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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

## A.Y. 2019-20 - Collaborative Activities

The following are the list of collaborations provided at the Institution for the academic year 2019-20:

S No		Details		Total
		Consortium of College	1	
		Fellowship Collaborations	9	
	Research	Journal Collaborations	32	
1	Collaboration	Proceeding Collaborations	5	55
		Collaboration of Books	4	
		Collaboration of Book Chapters	4	
2	Faculty Exchange			4
3	Student Exchange			10
4	Student Internship			197
			Total	266





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Criterion III Metric 3.7.1

### 1. Research – Consortium of College – Academic Year (2019-20)



#### Dr.N.G.P. ARTS AND SCIENCE COLLEGE An

Autonomous Institution, Affiliated to Bharathiar University, Coimbatore Approved by Government of Tamilnadu & Re-accredited by NAAC with 'A' Grade DST FIST| DBT STAR COLLEGE SCHEME

#### NATIONAL SYMPOSIUM ON GRADUATE RESEARCH (NSGR-2020)

February 21-22, 2020



Dr.N.G.P. ARTS AND SCIENCE COLLEGE
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DST - FIST| DBT- Star College



Dr. N.G.P.- Kalapatti Road, Coimbatore-641 108, Tamilnadu, India Website:www.drngpasc.ac.in|Email:drngparts@kmch.ac.in|Phone:+91-422-2369100

NATIONAL SYMPOSIUM ON GRADUATE RESEARCH (NSGR-20) February 21-22, 2020

Organized under DBT STAR SCHEME

Department of Biochemistry, Biotechnology, Microbiology and Food Science & Nutrition

Under DBT STAR college scheme, 2 day national symposium was conducted on February 21<sup>st nd</sup> of this year with grand success. The event was designed to instill the importance of and 22 research in the young minds and to nourish and nurture their skills to become future scientists. The broad areas which were covered in the symposium were literature reviews, systematic reviews, research methods, managing data and other such related topics.

It began with a formal inauguration with a cordial welcome address by Prof. Dr. V. Rajendran, principal, Dr. N.G.P. Arts and Science College, Coimbatore. The chief guests for the occasion were Dr. Basavaraj Madhusudhan, Professor, Former Chairman & Dean, Davangare University. The guests of honour were Mr.G.Sriram Prasad, Chief Executive officer, Keeraikadai Ventures Pvt.Ltd, Coimbatore. The above two members delivered lectures as the keynote speakers.

Dr. S.S. Sudha, the DBT STAR College Scheme Co-ordinator proposed the vote of thanks which marked the end of the inaugural session and the beginning of the symposium.

Following this, in the afternoon, the session was purely technical where the young researchers who were all under graduate students presented their findings with lot of enthusiasm and confidence awaiting exciting rewards. More than 50 students from different disciplines like Microbiology, Zoology, Physics, Chemistry, Mathematics, Biochemistry, Biotechnology and Computer science participated in the symposium. The peer group of students posed interesting questions which each of the participant took it up as a challenge and did their best to answer the questions as a dynamic defense session.

There were model presentation by the students of participating departments.students prepared working models, chart and displayed in conference centre. They enthusiastically took part in presentation.





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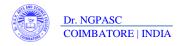
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1. Research – Fellowship Collaboration – Academic Year (2019-20)





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# 1.Prof. Dr. V. Rajendran - Leadership for Academics Program (LEAP)







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### 2. Dr. R. Karunathan - FARA - Fellow







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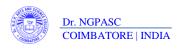
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### 3. Dr. K. Girija - FARA - Fellow







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Criterion III Metric 3.7.1

# 4. Ms. U. Suji - Virtual Trainers Training Programme on Entrepreneurship







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# 5. Prof. Dr. V. Rajendran - Top 2% World Scientist - Indian Researcher

### Certificate



COMMUNITY PAGE

# A standardized citation metrics author database annotated for scientific field

John P. A. Ioannidis 61 x, Jeroen Baas 62, Richard Klavans 3, Kevin W. Boyack 64

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### G OPEN ACCESS

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Competing interests: The authors have declared that no competing interests exist. JPAI is a member of the editorial board of PLoS Biology. Jeroen Baas is an Elsevier employee. Elsevier runs Scopus, which is the source of this data, and also runs Mendeley Data where the database is now stored.

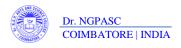
Provenance: peer reviewed, not commissioned.

#### Abstract

Citation metrics are widely used and misused. We have created a publicly available database of 100,000 top scientists that provides standardized information on citations, h-index, coauthorship-adjusted hm-index, citations to papers in different authorship positions, and a composite indicator. Separate data are shown for career-long and single-year impact. Metrics with and without self-citations and ratio of citations to citing papers are given. Scientists are classified into 22 scientific fields and 176 subfields. Field- and subfield-specific percentiles are also provided for all scientists who have published at least five papers. Career-long data are updated to end of 2017 and to end of 2018 for comparison.

Use of citation metrics has become widespread but is fraught with difficulties. Some challenges relate to what citations and related metrics fundamentally mean and how they can be interpreted or misinterpreted as a measure of impact or excellence [1]. Many other problems are of a technical nature and reflect lack of standardization and accuracy on various fronts. Several different citation databases exist, many metrics are available, users mine them in different ways, self-reported data in curriculum vitae documents are often inaccurate and not professionally calculated, handling of self-citations is erratic, and comparisons between scientific fields with different citation densities are tenuous. To our knowledge, there is no large-scale database that systematically ranks all the most-cited scientists in each and every scientific field to a sufficient ranking depth; e.g., Google Scholar allows scientists to create their profiles and share them in public, but not all researchers have created a profile. Clarivate Analytics provides every year a list of the most-cited scientists of the last decade, but the scheme uses a coarse classification of science in only 21 fields, and even the latest, expanded listing includes only about 6,000 scientists (https://hcr.clarivate.com/worlds-influential-scientific-minds), i.e., less than 0.1% of the total number of people coauthoring scholarly papers. Moreover, self-citations are not excluded in these existing rankings.

We have tried to offer a solution to overcome many of the technical problems and provide a comprehensive database of a sufficiently large number of most-cited scientists across science.





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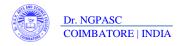
Here, we used Scopus data to compile a database of the 100,000 most-cited authors across all scientific fields based on their ranking of a composite indicator that considers six citation metrics (total citations; Hirsch h-index; coauthorship-adjusted Schreiber hm-index; number of citations to papers as single author; number of citations to papers as single or first author; and number of citations to papers as single, first, or last author) [2].

The methodology behind the composite indicator has been already extensively described along with its strengths and residual caveats in [2]. We offer two versions of the database. One version (supplementary Table S1, http://dx.doi.org/10.17632/btchxktzyw.1#file-ad4249ac-f76f-4653-9e42-2dfebe5d9b01) is calculated using Scopus citation data over 22 years (from January 1, 1996 until December 31, 2017; complete data for 2018 will not be available until later in 2019). For papers published from 1960 until 1995, the citations received in 1996–2017 are also included in the calculations, but the citations received up to 1995 are not. Therefore, this version provides a measure of long-term performance, and for most living, active scientists, this also reflects their career-long impact or is a very good approximation thereof. In order to assess the robustness and validity of the calculations, they have been replicated on a second, independent platform and a data set with a slightly different timestamp (less than one month difference). Correlations between the two independent calculations for the composite indicator (r = 0.983) and number of papers (r = 0.991) for the top 1,000,000 authors confirm the calculations are accurate and stable.

The other version (supplementary Table S2, http://dx.doi.org/10.17632/btchxktzyw.1#file-b9b8c85e-6914-4b1d-815e-55daefb64f5e) is calculated using data for citations in a single calendar year, 2017. It provides a measure of performance in that single recent year. Therefore, it removes the bias that may exist in comparing scientists with long accrual of citations over many years of active work versus younger ones with shorter time frame during which they may accumulate citations because it focuses on citation accrual only during a single year.

The constructed database shows, for each scientist, the values for each of the six metrics that are used in the calculation of the composite as well as the composite indicator itself, and all indicators are given with and without self-citations. Institutional affiliation and the respective country are inferred based on most recent publications according to the Scopus data as of May 2018. Therefore, only one affiliation is provided even though scientists may have worked in several institutions. Nevertheless, all their work in different institutions is all captured within their author record.

Extreme self-citations and "citation farms" (relatively small clusters of authors massively citing each other's papers) make citation metrics spurious and meaningless, and we offer ways to identify such cases. We provide data that exclude self-citations to a paper by any author of that paper and, separately, data including all citations, e.g., if a paper has 12 authors and it has received 102 citations, but 24/102 have as a (co)author at least one of these 12 authors of the original paper, only 102 - 24 = 78 citations are counted. Among the top 100,000 authors for 1996-2017 data, the median percentage of self-citations is 12.7%, but it varies a lot across scientists (interquartile range, 8.6%-17.7%, full range 0.0%-93.8%). Among the top 100,000 authors for the 2017 single-year data, the median percentage of self-citations is 9.2% (interquartile range, 4.8%-14.7%, full range 0.0%-98.6%). With very high proportions of self-citations, we would advise against using any citation metrics since extreme rates of self-citation may herald also other spurious features. These need to be examined on a case-by-case basis for each author, and simply removing the self-citations may not suffice [3]. Indicatively, among the top 100,000 authors for 1996-2017 and 2017-only data, there are 1,085 and 1,565 authors, respectively, who have >40% self-citations, while 8,599 and 8,534 authors, respectively, have >25% self-citations.





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We also provide data on the number of citing papers and on the ratio of citations divided by the number of citing papers. 5,709 authors in the career-long data set and 7,090 in the single-year data set have a ratio over 2. High ratios deserve more in-depth assessment of these authors. Sometimes, this may reflect that it is common for a small number of papers of the same author to be cited together. Alternatively, they may point to situations of spurious "citation farms."

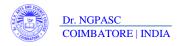
For each scientist, we provide the most common scientific field and the two most common scientific subfields of his/her publications, along with the percentage for each. All science is divided into 22 large fields (e.g., Clinical Medicine, Biology), and these are further divided into 176 subfields according to the Science-Metrix journal classification system [4] (http://science-metrix.com/?q=en/classification). Thus, users can rank scientists according to each of the six metrics or the composite indicator and can limit the ranking to scientists with similar scientific field or top subfield for different levels of desired similarity.

A separate file (supplementary Table S3, http://dx.doi.org/10.17632/btchxktzyw.1#file-e30a1e62-daf4-49f1-b1ca-484a979f6500) lists the total number of authors in Scopus who have published at least five papers and breaks this down by their most common area of publications (for the 22 fields and 176 subfields mentioned above). A total of 6,880,389 scientists have published at least five papers. Because each of the top 100,000 authors can be assigned to the most common field or subfield to which his/her work belongs, a ranking can be obtained among authors assigned to the same main area based on what journals they publish in; e.g., suppose a scientist is ranked 256 in some particular metric among the 120,051 scientists in the subfield of immunology. Therefore, the scientist is in the top 0.21% (256/120,051) of authors by that metric in immunology.

For all 6,880,389 scientists, Table 1 shows the career-long 25th, 50th, 75th, and 90th percentile of total citations and composite citation index according to each of the 22 fields. Table S3 provides the same information (along with 95th and 99th percentiles) for each of the 176 subfields as well. Thus, one can see the relative citation density of different fields. Moreover, any scientist who has published at least five papers can be ranked against these standard percentiles in his/her field or subfield based on his/her citation data from Scopus.

Existing ranking systems typically focus on single fields (e.g., ranking of authors in economics is performed by https://ideas.repec.org/top/) and use numbers of papers and total citations rather than multiple metrics. They also do not account for self-citation phenomena. Nevertheless, our databases still have limitations that have been discussed in detail previously in describing the methodology behind the composite indicator [2]. We should also caution again that citations from before 1996 are missing from our analysis. Overall, whole-career metrics place young scientists at a disadvantage. Single-year metrics remove much of this problem, although again, younger scientists have fewer years of publication history and thus probably fewer papers that can be cited in 2017. We have included the year of first (earliest) publication and the year of last (more recent) indexed publication of each author.

Publications of the scientists are extracted from the Scopus database using the author profiles, which are formed by a combination of curated profiles and profiles generated by an "author profiling" algorithm [5]. The reported precision and recall by Scopus in 2017 was 98% precision (i.e., on average, 98% of publications merged in a profile belong to one and the same person) at an average recall of 93.5% (i.e., on average, 93.5% of all publications of the same person are merged into one profile); the evaluation used a manual assessment of a sample of >6,000 authors for which the full publication history was collected and compared to what is available in the Scopus profiles. The precision/recall is higher as of April, 2019 at 99.9% and >94%, and the gold set used is also larger now, with >10,000 author records. Nevertheless, a few scientists still have their work split into multiple author records in Scopus; however, even





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Table 1. Percentiles of total citations and composite citation metric for each of 22 large scientific fields, career-long data (citations from 1996–2017). Total citations include self-citations.

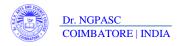
Scientific field	Authors	Percentile	total citatio	ons		Percentile,	composite in	ıdex	
		25th	50th	75th	90th	25th	50th	75th	90th
Agriculture, Fisheries, & Forestry	232,801	32	90	255	671	0.997	1.418	1.892	2.394
Built Environment & Design	36,534	17	51	143	370	0.953	1.344	1.821	2.335
Enabling & Strategic Technologies	475,142	23	75	233	678	0.890	1.330	1.807	2.300
Engineering	436,723	18	56	174	499	0.896	1.316	1.794	2.314
Information & Communication Technologies	339,284	20	60	193	574	0.970	1.380	1.862	2.383
Communication & Textual Studies	20,292	12	32	91	240	1.141	1.542	1.995	2.430
Historical Studies	25,277	16	40	105	263	1.138	1.568	2.012	2.429
Philosophy & Theology	13,861	12	32	87	217	1.145	1.558	2.003	2,453
Visual & Performing Arts	3,717	7	17	40	83	0.985	1.316	1.680	1.998
Economics & Business	108,277	28	83	258	708	1.191	1.651	2.194	2.73
Social Sciences	119,260	20	56	158	423	1.159	1.606	2.114	2.61
General Science & Technology	69,789	14	41	122	399	0.735	1.030	1.392	1.76
General Arts, Humanities, & Social Sciences	4,091	11	28	70	158	1.026	1.403	1.810	2.19
Biomedical Research	626,753	68	212	641	1,769	1.095	1.598	2.111	2.66
Clinical Medicine	2,113,734	41	141	467	1,430	0.935	1.420	1.979	2.56
Psychology & Cognitive Sciences	96,159	41	128	403	1,198	1.189	1.641	2.198	2.84
Public Health & Health Services	141,162	31	92	273	785	0.988	1.427	1.949	2.520
Biology	236,108	47	140	426	1,178	1.151	1.603	2.125	2.68
Chemistry	506,526	45	129	362	989	1.057	1.503	1.967	2.46
Earth & Environmental Sciences	223,246	40	126	405	1,192	1.096	1.562	2.120	2.70
Mathematics & Statistics	96,619	18	52	162	457	1.049	1.503	2.059	2.596
Physics & Astronomy	667,255	38	128	480	1,741	1.022	1.495	2.042	2.61
Unassigned*	287,779	2	7	18	42	0.463	0.672	0.985	1.30
TOTAL	6,880,389	29	102	346	1,077	0.946	1.420	1.951	2.51

In order to calculate the c (composite) indicator, any scientist may use the formula c = \frac{\left[sign(307117] \text{ | linkt(1711] \text{ | linkt(1711]

The data in the Table include all authors who have published at least five items that are classified by Scopus as "Articles," "Reviews," or "Conference Papers."

https://doi.org/10.1371/journal.pbio.3000384.t001

then, one record usually carries the lion's share of citations. We examined in depth a random sample of 500 author records among the top 1,000,000 records according to the 1996–2017 composite indicator, and we found 13 authors who had been split into two records each. It is possible that the most-cited/most-productive authors may have a higher chance of having split records. Among the top 150 in terms of composite indicator for 1996–2017, we found 20 who had two records and three who had three records among the top 1,000,000 records. However, in all cases, the top record captured the large majority of the citations, and for 11/23, the extra record(s) were not even among the top 100,000. Some other scientists with the same name may have been merged in the same record, but overall, disambiguation in Scopus has improved markedly in this regard, and major errors of this sort are currently very uncommon. They may be more common still for some Chinese and Korean names. Inappropriate merging





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may also be suspected when the top subfields are not contiguous, e.g., diabetes and particle physics.

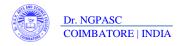
Some citation indicators such as the h-index are highly popular, but all single indicators have shortcomings. For practical purposes, it is usually desirable to have a set of bibliometric indicators, each emphasizing a different aspect of the scientific impact of a scientist [6]. We offer the means to practice routinely such an approach. Of note, the six components of the composite indicator are not orthogonal but have correlations among themselves. Some bibliometrics experts may not favor composites that include correlated metrics and may prefer to inspect each one of them independently. Our databases also allow this approach.

The data sets that we provide also allow placing scientists in reference standards of almost two hundred fields. Still, some scientists may work in very small sub-subfields that may have different citation densities. Moreover, for very early career scientists, any citation metrics would have limited use since these researchers may not have published much yet and their papers would not have time to accrue citations.

A citation database is most useful when it can be regularly updated. We also provide here data that have been updated with an annual interval. We repeated the same exact analyses for career-long data until the end of 2018 (as opposed to the end of 2017) using a timestamped Scopus data set released on April 22, 2019. The data on the top-100,000-ranked scientists are provided in supplementary Table S4 (http://dx.doi.org/10.17632/btchxktzyw.1#file-bade950e-3343-43e7-896b-fb2069ba3481). As one can see, the correlation between the two data sets is extremely high, and the vast majority of scientists do not change their ranking much. As an illustrative example, supplementary Table S5 (http://dx.doi.org/10.17632/btchxktzyw.1#file-5d904ef8-fc87-4dbf-aaa7-ad33db9ac561) provides the ranking for a random sample of 100 authors sampled from those who were in the top 100,000 based on the composite index excluding self-citations. 93 of the 100 were among the top 100,000 in both assessments. Another five were very close to the top 100,000 with one assessment and at the lower end of the top 100,000 in the other assessment. Another two with modestly larger differences still did not shift by much in terms of their percentile ranking across all authors, with changes of 1% and 2% on the percentile ranking, respectively. Both of these changes were due to corrections in which papers are included in the author record rather than simply accrual of citations. For the vast majority of scientists, it is likely that percentile ranking may take many years to change substantially; therefore, the current databases that we have compiled can be used meaningfully for several years by the wider community before a new update is needed. We provide the databases as spreadsheets in Mendeley Data for entirely open, free public use. Instead of creating a formulaic website, spreadsheets can be downloaded, searched, and tailored for analyses by scientists in whatever fashion they prefer. Moreover, the percentile information could be used for placing a field-specific ranking for any scientist, not just the top 100,000.

We hope that the availability of standardized, field-annotated data will help achieve a more nuanced use of metrics, avoiding some of the egregious errors of raw bean-counting that are prevalent in misuse of citation metrics. Citation metrics should be used in a more systematic, less error-prone and more relevant, context-specific, and field-adjusted way and also allowing for removal of self-citations and detection of citation farms.

Citation analyses for individuals are used for various single-person or comparative assessments in the complex reward and incentive system of science [7]. Misuse of citation metrics in hiring, promotion or tenure decision, or other situations involving rewards (e.g., funding or awards) takes many forms, including but not limited to the use of metrics that are not very informative for scientists and their work (e.g., journal impact factors); focus on single citation metrics (e.g., h-index); and use of calculations that are not standardized, use different frames, and do not account for field. The availability of the data sets that we provide should help





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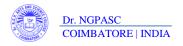
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mitigate many of these problems. The database can also be used to perform evaluations of groups of individuals, e.g., at the level of scientific fields, institutions, countries, or memberships in diversely defined groups that may be of interest to users. Linkage to other authorbased databases in the future may enhance the potential for further use in meta-research evaluations [8]. We discourage raw comparisons of scientists across very different fields. We cannot emphasize enough that use of these metrics needs to be prudent. Authors who detect errors in the entered data should contact Scopus to correct the respective entries and author records. We also welcome suggestions for more generic improvements that may augment the utility of the shared resource that we have generated.

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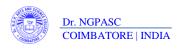
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Tiwari, Suresh	Indian Institute of Tropical Meteorology	106015	Meteorology & Atmospheric Sciences	Environmental Scien
Banerjee, Bubun	Indus International University	106076	Organic Chemistry	Inorganic & Nuclear
Ramesh, Maneesha Vinodini	Amrita University, Amritapuri Campus	106394	Networking & Telecommunications	Artificial Intelligence Processing
Sharmila, S.	Bharath Institute of Higher Education and Research	106398	Pharmacology & Pharmacy	Artificial Intelligence Processing
Agarwal, Anil Kumar	Department of Paediatric Orthopaedics, Chacha Nehru Bal Chikitsalaya	106635	Anesthesiology	Surgery
Kumar, Rakesh	National Institute of Technical Teachers' Training and Research, Chandigarh	106655	Agronomy & Agriculture	Dairy & Animal Scien
Khanna, A. S.	The Society for Surface Protective Coatings	106678	Materials	Polymers
Kavitha, P.	BIHER	106707	Artificial Intelligence & Image Processing	Networking & Telec
Thankappan, K. R.	Sree Chitra Tirunal Institute for Medical Sciences and Technology	106745	General & Internal Medicine	Public Health
Ashok, S.	National Institute of Technology Calicut	106951	Energy	Electrical & Electron
Kumar, Vinod	Indian Institute of Technology Delhi	107124	Applied Physics	Materials
Madhavan, Jagannathan	Thiruvalluvar University	107152	Applied Physics	Energy
Somasundaram, Kumaravel	Indian Institute of Science, Bengaluru	107161	Oncology & Carcinogenesis	Biochemistry & Mol
Agrawal, Amit	Indian Institute of Technology, Bombay	107177	Mechanical Engineering & Transports	Fluids & Plasmas
Rajendran, V.	Dr. N.G.P. Arts and Science College	107316	Materials	Applied Physics
Saha, Ujjwal K.	Indian Institute of Technology Guwahati	107317	Energy	Mechanical Enginee
Siddiqi, Khwaja Salahuddin	Aligarh Muslim University	107350	Inorganic & Nuclear Chemistry	General Chemistry
Kumar, Anil	Shoolini University	107379	Energy	Mechanical Enginee
Wazid, Mohammad	Graphic Era Deemed to be University	107430	Networking & Telecommunications	Artificial Intelligence Processing
Sinha, V. R.	University Institute of Pharmaceutical Sciences India	107537	Pharmacology & Pharmacy	Analytical Chemistry
Minwalla, Shiraz	Tata Institute of Fundamental Research, Mumbai	107623	Nuclear & Particle Physics	Mathematical Physic





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### 6. Dr. R. Karunathan - Travel Grant - International Conference

### Certificate



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18th - 20th December, 2019

Organized by: Department of Applied Physics, Delhi Technological University, Delhi, India

# Certificate

Prof. Man Mohan President, CAMNP-2019

Prof. Rinku Sharma Chairperson, CAMNP-2019 Dr. Vinod Singh Convener, CAMNP-2019





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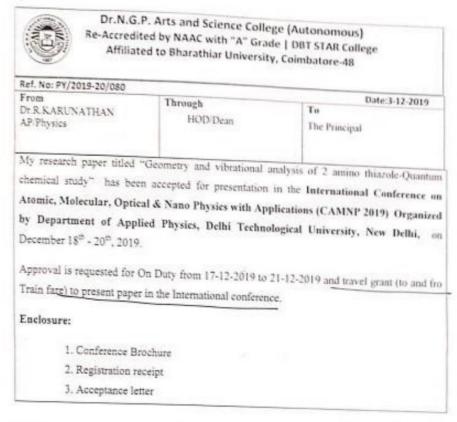
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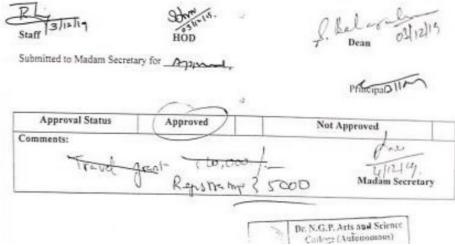
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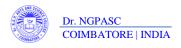
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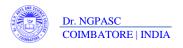
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### 7. Prof. Dr. V. Rajendran - Travel Grant - Invited Speaker Certificate







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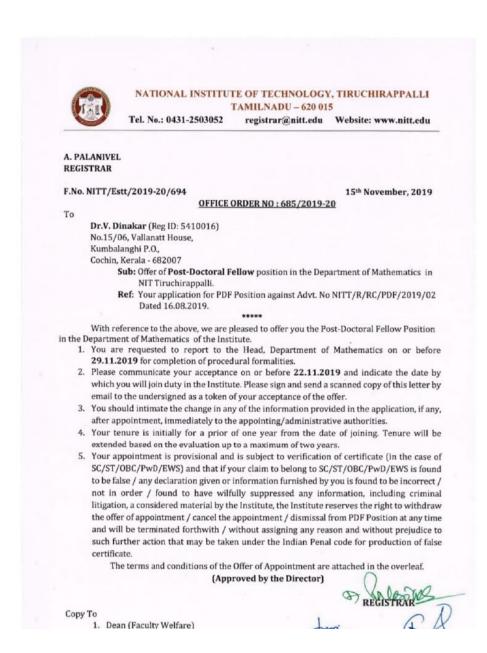
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### 8. Dr. V. Dinakar – National Post-Doctoral Fellow

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### **Approval letter**

Fr. V. DINAKAR,
12, Bahaji Nagas North,
Kalapathi,
Loimbretone - 641048.

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To

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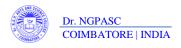
Sub: Joining duty as a Post-Ductions Fellew in the Department of Mathematics on 22/11/2019 (Forday).

I have been experted a post of Post-Dectoral Fellow the Department of Mathematics on 15th November, 2019. Hence I joining in the above mentioned post from the morning 22/11/2019 (Friday).

Thanking You

2. Dini

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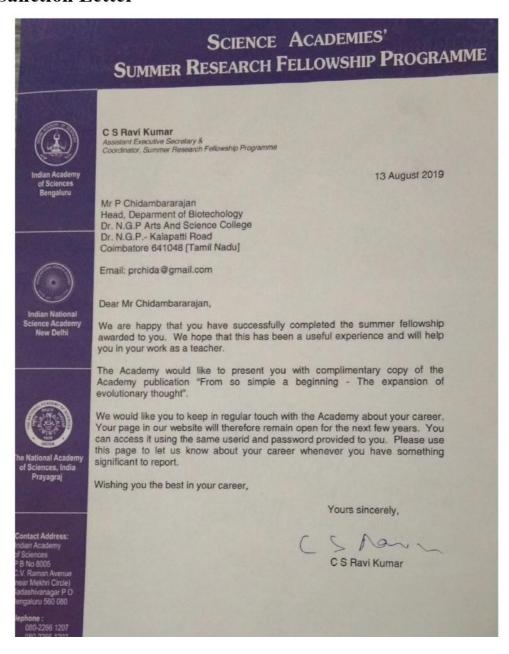
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# 9. Dr. P. Chidambararajan - Summer Research Fellowship Programme

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Ref. No: BT/2018-19/144 From		Date: 09.04.2019
Dr. P.Chidambara Rajan, Associate Professor and Head Department of Biotechnology.	The Principal	To The Madam Secretary

I would like to bring to your kind notice that, I am selected in Science Academies 'Summer Research Fellowship Programme for Teachers 2019' under the mentorship of Prof. Dr. Neha Garg, Indian Institute of Technology, Mandi, Himachal Pradesh. In this regard, I am applying for the abbatical leave (With Salary), for a duration of 60 days (23th April 2019 to 20th June 2019) inclusive of Saturday, Sunday and public holidays). I shall take interest to share the knowledge that I gain from this program with the students of our college. Herewith, I have enclosed the selection list Published from the Indian Academy of Sciences for your perusal. So, I request you to kindly accept my application. It would be helpful for me to proceed further.

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### 2. Research - Journal Collaboration – Academic Year (2019-20)

International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-11, September 2019

### Euler Movement Firefly Algorithm and Fuzzy Kernel Support Vector Machine Classifier for Keystroke Authentication

M. Rathi, A. V. Senthil Kumar

Abstract: User authentication can be successfully employed using keyboard typing patterns which is a form of behavioural biometrics. This modern method is highly analyzed for static authentication which refers to typing of fixed texts like password' and 'pin numbers'. Most of the methods with respect to keystroke dynamics are restricted to the study of user's activity involving fixed text. The formulated work concentrates on the investigation of the log of the user activity focused on the keyboard usage within the computer system through free text which refers to typing of texts throughout the login session. The Buffalo dataset is used in User Profiling Similarity Measurement (UPSM) stage and to recognize the time slice of the users, Euler Movement Firefly Algorithm (EMFA) is utilized. The typing behaviour is formulated in the form of time series in User Profiling Continuous Keystroke Authentication (UPCKA). Moreover the progression is made to user's Continuous Authentication of the classifier called Novel Fuzz Kernet Support Vector Machine (NPKSYM). The experimental results provide the enhanced performance by utilizing the formulated UPCKA in correlation with the NFKSYM classifier when compared with SVM and Iterative Keystroke Continuous Authentication (IRCA) techniques.

INDEX TERMS: Keystroke, Keystroke Time Series,

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INDEX TERMS: Keystroke, Keystroke Time Series,
Continuous Authentication, Buffalo dataset, User Profiling
Similarity Measurement (UPSM) and User Profiling Continuous
Keystroke Authentication (UPCKA).

#### INTRODUCTION

The greater diffusion of the digital recognitions has led to The greater diffusion of the digital recognitions has led to the development of security issues due to data transmissions [1]. Nowadays, the perspective of the large diffusion involving in the various activities transmitted over the internet through events like online transactions in banking, transaction involving

transaction involving

E-commerce, communication through e-mail tends to suffer
security attacks [2]. Due to this, the theft regarding the
identity of the person has become predominant and it has
gained new momentum. The illegal use of personal
information of someone else and pretending to be the actual person is generally termed as identity theft [3]. Under this person is generally termed as identity their [3]. Under this situation, a variety of modern techniques have been developed for the purpose of user authentication. The process of confirming the users' identity is called Authentication. For instance, within workstations, initial authentication takes place, which is the system initialization. Moreover highly secured authentication techniques do not even render complete safety security mechanisms,

Revised Manuscript Received on September 05, 2019
Rathi. M, Assistant Professor in Department of Computer Technology,
Dr. NGP Arts and Science College, Coimbatore since 2016.
Dr. A. V. Senthil Kumar, Professor and Director of Department of
Computer Applications, Hindusthan college of Arts and Science,

As the computers may be subjected to unauthorized users whenever the user is left from the workstation without ending the session. Similarly the unauthorized users could handle the system pretending like a legitimate person, which leads to theft of identity [3]. Out of several methods one such technique to solve the issue caused by the intrusion is that the use of detection mechanisms that focus on

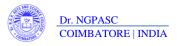
that the use of detection mechanisms that focus on workstation (host-based). Keystroke dynamics [4-5] (typing patterns) are considered to be the challenging tasks for the persistent authentication. To authenticate the typing patterns of an individual, the initial task was subjected to the text that remains static. For instance, static authentication related to that of typing pattern, the rhythm, recognize only when the users enter their credential data (username and password, or pin number) [6–7]. Keystroke dynamics is considered to be significantly precise to the choice of authentication due to its degree of transparency it produces. The most obvious way to take advantage of it is to gather timing information on data that users have already typed to login into the system that is, username and password. Keystroke Static Authentication (KSA) has been subjected by considering the applications including username, password and pin number authentication [6–7]. KSA remains unsuitable for the applications that are in need of regular authentication like the context of the online assessments applied in eLearning environments. Hence, Keystroke Continuous Authentication (KCA) is required. When compared to KSA, KCA is considered to be more promising as the process focuses on discovering patterns from the text which is set free (not as to that of KSA planning for a fixed pattern which remains single). The working strategy of KCA till date has focused on feature vector based binary classification where the statistical features like the average hold time (duration of a key press) and digraph latency (duration between the start or responses and agraph latency (duration between the start or end of pairs of common consecutive key presses) have been considered to be important [8–9]. These mechanisms function regularly by evaluating the similarity among the learnt user having a statistical profile and unseen data previously presented in the data stream.

The authors are motivated behind the time series approach

as it can be easily used to detect the suspicious behaviour during sequence of keystrokes. The idea presented in this work is to conceptualise the keystroke process in terms of which is to conceptualise the Reystone process in terms of time series from which the KCA have been identified without utilizing the feature vector based classification. More specifically the idea is to view keystrokes in terms of press-and-release temporal events such that a series of successive events can be recorded. In addition, Novel Fuzzy Kernel Support Vector Machine (NFKSVM) classifier need

to be built for each user and this in turn improves the efficiency of the application

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International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8 Issue-4, November 2019

### Multi-Label Classification with PSO based Synthetic Minority Over-Sampling Technique (Psosmote) for Imbalanced Samples

M.Priyadharshini, L.Pavithira,

Abstract: Recently, the learning from unbalanced data has emerged to be a pre-dominant problem in several applications and in that multi label classification is an evolving data mining task, learning from unbalanced multilabel data is being examined. However, the available algorithms-based SMOTE examined. However, the available algorithms-based SMOTE makes use of the same sampling rate for every instance of the minority class. This leads to sub-optimal performance. To deal with this problem, a new Particle Swarm Optimization based SMOTE (PSOSMOTE) algorithm is proposed. The PSOSMOTE algorithm employs diverse sampling rates for multiple minority class instances and gets the fusion of optimal sampling rates and to deal with classification of unbalanced datasets. Then, Bayesian technique is combined with Random forest for multilabel classification (BARF-MLC) is to address the inherent label dependencies among samples such as ML-FOREST classifier, doet classification (BAR-MLC) is to dadress the interent abet dependencies among samples such as ML-FOREST classifier, Predictive Clustering Trees (PCT), Hierarchy of Multi Label Classifier (HOMER) by taking the different metrics including precision, recall, F-measure, Accuracy and Error Rate.

Keywords: multi-label classification, multi-class imbalance, PSO, SMOTE, Bayesian approach. (DrNGPASC 2019-20 CS016)

#### INTRODUCTION

Several real-world applications, like text classification and sub cellular localization of protein sequences, deal with multi-label classification with unbalanced data. The classification of unbalanced data is a significant issue in machine learning and data mining [1]. In an unbalanced dataset, there are considerably lesser training instances of one class in comparison with another class. Accordingly, the former is called as the minority class, and the latter is known as the majority class. In [2], the imbalance problem for MLC is addressed and a novel scheme known as DEML is proposed. In [3] an algorithm BSHD (Block Sampling with choosing the Highest Degree nodes), an active learning based imbalanced networked multi-label classification algorithm is proposed.

In [4] a multi-label classification algorithm that depends on multi-rank neighbors is introduced. In [5] the random walk model is combined with multi-label learning to introduce a multi-label classification algorithm MLRW (Multi-Label Random Walk algorithm). In [6] the asymmetric stage-wise loss function is presented to move the positive class samples at some distance away from the classification boundary compared to the negative class samples by adjustment of the ramp in addition to the margin parameters. In [7] LEML algorithm is used, which is the low-rank property of the label matrix to develop a linear prediction model and then it helps in restoring the missing labels by reducing the kernel

Revised Manuscript Received on December 08, 2019.

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Retrieval Number: D8437118419/2019©BEIESP DOI:10.35940/ijrte.D8437.118419

In [8] the low-rank hypothesis is combined with manifold hypothesis, and then the proximal gradient descent algorithm is used for recovering the missing labels. In [9] the existing correlation among labels is completely exploited, and a considerably good data subset is selected with the help of cross-validation technique, and its prediction results is used in the next subsequent iteration, and eventually all the missing labels are recovered. But, this technique presumes that the training set gets balanced between positive and negative categories. In [10] different mechanisms are introduced and they are compared for the generation of synthetic samples for balancing the data sets during the training of multi-label algorithms. In [11] the SCUT hybrid sampling technique is brought into use and it is utilized for balancing the number of training examples in such a kind of multi-class environment.

In [12] the challenge occurring due to the multiclass imbalance problems is studied and the generalization capability of few ensemble solutions, including the recently introduced algorithm Adaboost is also investigated. In [13] the process of synthetic instance production for multilabel datasets (MLDs) and MLSMOTE multiclass imbalance (Multilabel Synthetic Minority Over-sampling Technique), which is a novel algorithm targeted at the generation of synthetic instances for unbalanced MLDs, is presented.

In this research work, a new PSO based on SMOTE algorithm, called as PSOSMOTE is introduced for multi-lable classification for unbalanced data to boost the performance of unbalanced data classification. The PSOSMOTE algorithm makes use of multiple sampling rates for various minority class instances and gets the combination of optimal sampling rates. Then, the newly introduced MLC is used on the dataset.

The remaining portion of this work is organized as below. Section 2 explains about the proposed technique. Section 3 discusses about the data sets, the experimental setup and experimental results. In the last section, the conclusions are discussed in Section 4.

#### PROPOSED METHODOLOGY

In this research work, PSOSMOTE is used for imbalanced dataset sampling. PSOSMOTE has combined both PSO and SMOTE process. Then, Bayesian scheme is merged with Random forest (BARF-MLC) that will be used for revealing the inherent label dependencies. The overview of the proposed scheme is illustrated in figure 1.

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INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 02, FEBRUARY 2020

ISSN 2277-8616

## Adaptive Fuzzy Chaotic Genetic Clustering Based Continuous Keystroke Authentication

M. Rathi, A. V. Senthil Kumar, Ismail Musirin

Abstract: Exponential growth in technology, has increased the security breaches day today. This is because the system which is standalone or connected with networks, are handled by different users for various purposes. The security of individuals is preserved using identification and authentication to prevent from intruders. The authentication of an individual is done either by using behavioral or physiological characteristics of the concern user. This paper aims to develop an optimized approach based on ballistic nature of typing behavior based authentication system. This system is used to identify an individual by their typing rhythm to confirm their genuineness. Determining authenticated persons by keystroke dynamics is very difficult in presence of uncertainty in their typing rhythm. This proposed model devised a fuzzy inference model with gene clustering to discover the pattern of the user as genuine or an intruder. There is no proper proof of handling indeterminacy in impersonate users as authenticated or not by discovering the keystroke pattern. Hence, this proposed work handles the indeterminacy of user keystroke recondition by applying membership degree with the obtained features involved in behavioral keystroke typing rhythm based authentication model

Index Terms: continuous keystroke dynamic, behavioral, typing rhythm, indeterminacy, Fuzzy inference model, Gene clustering, Buffalo Dataset

#### 1. INTRODUCTION

DUE to rapid increase in demand of strong security mechanism, conventional methods fail to face the challenges due to tokens and passwords are too many to evoke. One of the important issues in a restricted access of using computer system in remote is user authentication. Continuous spread of internet usage makes effectual remote authentication a key issue providing additional difficulties. Many biometric authentication models need dedicated hardware which was unhandy for remote applications [1]. Related with other biometrics, one of the emerging and attractive user-friendly biometric mechanisms is keystroke authentication. The dynamic data of keystroke can be gathered without disturbing the activities of the corresponding user. The keystroke dynamics is mainly used for recognition of an authenticated user by their typing rhythm. While a keystroke pattern sequence successfully matches a user input, then it spots the user as an authenticated person or if it is mismatched the user is treated as an intruder. An approach which uses rhythm of typing as a pattern of biometric authentication is referred as continuous keystroke authentication. This kind of authentication not only checks the value of the password but also the typing rhythm. In addition, after the successful initial log, the system does not assume that the user changes during a session, when a user fails to log out after completing his work, or leave away for short or long period of time. This situation easily allows the impostor to access the documents, delete the content or send mail as a genuine user. To overcome this kind of problem the necessity of continuous authentication is considered as a primary authentication tool in

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Coimbatore, India. e-mail: avsenthilkumar@yahoo.com, Faculty of Electrical Engineering, University Teknologi MARA, Selangor, Malaysia. e-mail: ismailbm@uitm.edu.my the field of security mechanism. The major difference between the static keystroke dynamics and the continuous keystroke dynamics is that in the former static method, the typed information used for authentication is fixed, while in latter the information is never fixed [2]. The main requirement of the continuous authentication is as follows:

- During continuous authentication the user is not interrupted in their daily activities
- The system utilizes each single keystroke to discover the genuineness of the user

This paper introduced the concept of uncertainty in determining the continuous keystroke pattern when there is a high degree of similarity in typing rhythm among the normal user and the impostor. This paper introduces genetic clustering based continuous keystroke pattern recognition in an optimized way.

#### 2 RELATED WORK

This section discusses about some of the existing works related to keystroke dynamics and the authentication process. Dowland et al. [3] developed a digraph, word latency and tri graph as features and for classification they used distance-based classifier for dynamic keystroke authentication over 35 users. Gunetti et al. [4] in their work, to perform keystroke dynamic authentication they used the digraph latency for extraction of features and they also used distance-based classifier to classify the users as legitimate users or imposter among 205 users. Stewart et al. [5] devised a burst authentication. Their main motive is to use the technique of burst authentication to decrease the frequency of sovereign checks of authentication. This model owns the merit of decreasing false alarm rate, evades capturing of huge volume of irrelevant data and unnecessary usage of resources to process the selected input, whilst it offers sufficient for continual biometric authentication training. The feature extraction is done on stylometry and keystroke time information along with KNN classifier and the nearest neighbours are discovered using Euclidean distance.

Messerman et al. [6] developed a non-intrusive authentication

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### Computation of eccentricity associated topological descriptors through Python for comb tree

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**Abstract**. Topological manifestation of a graph G is a numerical value which reveals it's topological properties. The eccentricity of one node  $u \in V$  (G)(that is  $e_G(u)$ ), is the greatest distance between u and also any other vertex of G. The degree of a In this paper, we are using Python program to compute eccentricity related Topological indices for Comb tree with any number of vertices, relation between descriptors and the bounds for indices also.

Keywords: Comb tree; eccentricity; Python; topological index;

#### 1. Introduction

An chemical compound's molecular structure can be represented by a graph in which we represent atoms of molecule as vertex of that graph and bonds between atoms as edges of the graph. This type of graph is called molecular graph or chemical graph. In Recent days inter discipline research is has high impact, especially mathematical chemistry is highly influencing in drug manufacturing, medicinal chemistry and bio chemistry etc.

We present bounds and comparison of various greatest distance based index of widely used chemical structures which often appear in mathematical chemistry.

Using Python we can compute all topological descriptors in minimum ravage of all resources Python is dynamic language. Now a days python is highly influencing language in all fields.

Readers who are having significance can test out the program in the net repl.it https://repl.it/@Manimekalai/eccentricity-based-index

https://repl.it/@Manimekalai/Total-Eccentricity-index

Various indices was introduced in various periods of time for a graph A,

Eccentric connectivity descriptor [4,8,9,10],  $\xi(A) = \sum d(v)\varepsilon(v)$ 

Total eccentricity descriptor [3],  $\zeta(A) = \sum_{v} \varepsilon(v)$ 

Average eccentricity [2] avec(A)=  $\frac{1}{n} \sum_{v \in V} \varepsilon(v)$ 

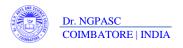
Alternate form of Eccentric connectivity[10] index  $\zeta^{c}(A) = \sum_{v \in \mathcal{E}(A)} (\varepsilon(u) + \varepsilon(v))$ 

Ghorbani et al. [5,6], First Zagreb eccentric descriptor  $M_1^*(A)$  or  $E_1(A) = \sum_{\nu} \varepsilon(\nu)^2$ 

Second Zagreb eccentric index  $M_2^*(A)$  or  $E_2(A) = \sum_{uv \in E(A)} (\varepsilon(u).\varepsilon(v))$ 

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### Fuzzy Clustering Based Image Denoising and Improved Support Vector Machine (ISVM) Based Nearest Target for Retina Images

B. Sivaranjani, C. Kalaiselvi

Abstract: A developing automated retinal disease diagnostic system based on image analysis has now demonstrated the ability in clinical research. Though, the accuracy of these systems has been negotiated repeatedly, generally due to the basic effort in perceiving the abnormal structures as well as due to deficits in perceiving the abnormal structures as well as due to deficits in the image gaining that affects image quality. Use the fuzzy clustering; the noises contained in the samples are omitted from the above. Unless the noises will be taken away from the samples instead dimension reduction initializes the optimization of Mutual Information (MI) as just a coarse localization process that narrows the domain of optimization and tries to avoid local optimization. Furthermore, the suggested work closer to the retina picture being done using the Improved Support Vector Machine (ISVM) system used in the area-based registration, offering a reliable approach. It is the first matching template algorithm for retina images with tiny template images of unconstrained retinal areas to the best understanding.

Keywords: Retina image template matching, Noise removal, Fuzzy clustering, Improved Support Vector Machine, teleophthalmology, dimension reduction, mutual information,

#### I. INTRODUCTION

Teleophthalmology is becoming increasingly important as an efficient way to deliver eye care worldwide. Teleophthalmology is used in many developing countries to provide all the underprivileged urban population and the remote rural population with reliable eye care. Technological innovations have strengthened proof over the years, and teleophthalmology has developed from such a learning tool to a clinical device. Teleophthalmology provides the same optimal therapeutic outcome as traditional system. Remote portals empower clinicians should provide treatment across a larger area, thus improving quality of life outcomes and growing accessibility to a larger population of specialty care. Leading to increased accessibility and decreased commuting costs and time, a high level of satisfaction and acceptance is recorded in most studies. Given the documented increased quality of patient safety and patient satisfaction for all these programs in telemedicine, this analysis examines how teleophthalmology

greatly improves health outcomes.

Teleophthalmology offers an easy and valueeffective way to detect many retinal diseases and eventually to preserve the eyesight of a patient. In the retina, there has also been a trend toward more teleophthalmology,

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Particularly in areas in which retinal specialists may not be easily available for diabetic retinopathy and premature retinopathy (ROP) screening. In this section, the difficult issue of matching and recording retinal images was discussed to allow for new applications for discussed to allow for new applications for teleophthalmology. A new technique for locating optic discs in retinal images was suggested in [1].

The first phase of certain vessel segmentation, disease diagnosis, and retinal recognition algorithms would be to locate the optic disc and its core. In [2] the latest research on the essential characteristics and features of DR eye telehealth services was evaluated in the categories listed: image gradability, mydriasis, sensitivity and specificity, cost-effectiveness, long-term efficacy, patient comfort and satisfaction, and patient-related results change. In [3] analyzed recent trends in DR screening imaging and new technologies, showing potential for growth on existing

approaches to screening.

In [4] the value-benefit analysis to use a digital retinal imaging assessment based on telemedicine was examined, compared to conventional diabetic retinopathy evaluation of diabetic patients. The economic impact of eye care telemedicine in a mountainous, rural health center in West Virginia over a period of seven years from 2003-2009 was evaluated in [5]. In [6] established if proliferative diabetic retinopathy (PDR) screening of tele-ophthalmology could be price-saving. In [7], it was proposed that primary care hospitals may use telemedicine to monitor for diabetic retinopathy and track for disease intensifying over a prolonged period of time. In [8], patient preference for diabetic retinopathy (DR) screening is evaluated with teleophthalmology or face-to-face ophthalmology in Nairobi. Kenya. In [9] the history about using telemedicine care telemedicine in a mountainous, rural health center in teleophthalmology or face-to-face ophthalmology in Nairobi, Kenya. In [9] the history about using telemedicine technology to assess ophthalmology in diabetic and hypertensive cases reporting to a community clinic in rural West Virginia was identified.

In [10], the ability to assess non-diabetic retinal observations in diabetes patients either using non-mydriatic fundus photography (NMFP) or Ultra Wide Field Imaging (UWFI) into a known teleophthalmology program was compared using verified retinal imaging methods. In [11], a method was suggested to identify in retinal images of objects and to mask the affected areas in order to prevent them from being regarded for the automatic detection of retina diseases. In [12] the cost-effectiveness of a rural Southern India telemedicine diabetic retinopathy (DR) screening system conducting 1-off screening camps (i.e. screening provided once) in villages was assessed and the actual cost-effectiveness proportions of different screening intervals were assessed.

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A STUDY ON RURAL SELF HELP GROUPS WOMEN WITH SPECIAL REFERENCE TO MICRO CREDIT IN SALEM DISTRICT.

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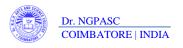
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#### Abstract

The Women constitute half the population of the world. But in many parts of the world, they seem to be underpowered. Compared to men, they are relegated to secondary position, be it in the household, society in general and in work place. It is this perceived gender inequality and the urge to remove it and to "empower" women who have constituted the motive force for the formation of Self Help Groups (SHGs).A Self Help Group can be defines as a 'voluntary association' of the poor with a common goal of social and economic empowerment. The purpose behind the formation of the Self Help Group may be to pool the resources of members to meet their needs. Group should be homogenous and democratically functioning. The habit of thrift and contributing to common funds mobilized to mitigate the urgent needs of the members and ensuring prompt recovery are required for better functioning of SHGs.Non -Government Organization (NGO) is a voluntary organization established to assist the undertaking of social intermediation, namely organizing the SHGs of micro entrepreneurs entrusting them to the interested banks. Some NGOs borrow funds from financial institutions for extending to SHGs and others for social intermediation. The financial assistance together with promotional and developmental activities by SIDBI has played a crucial role in the upliftment of small and tiny sector to a self-sustained path of growth. They have set up Micro Credit Scheme (MCS) in March 1994, and financial assistance has been provided to the rural poor, particularly women through NGOs for taking up income generation activities at micro level. NABARD has also introduced a scheme in the year 1992 for linking of SHGs with banks in order to strengthen the efforts of NGOs and improve the financial position of SHGs. The present study is on Self Help Groups with special reference to micro credit in Salem District.

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### A Study on Problems Faced by Customers in Online Reservation With reference to Madurai City

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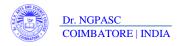
#### Abstract

The world has seen a great technological boom in the last fifty years, with innovations in every field making it possible for human life to be easier and comfortable. Tickets are documents that confirm the purchase and guarantee a seat on a chosen journey, hotel or for a show. Tickets are required as proof to get a boarding pass which is essential. Traditional tickets of earlier days were made of paper and were to be collected from the travel agencies or office for purchasing. Along with globalization and the development of the aviation industry, the process of ticket purchasing has also changed. Since the rapid growth and use of the internet since the 2000s, reservation has been possible online.

### Introduction

The new era of information technology has brought multiple advantages to mankind. The world has seen a great technological boom in the last fifty years, with innovations in every field making it possible for human life to be more easier and comfortable. Tickets are documents that confirm the purchase and guarantee a seat on a chosen journey, hotel or for a show. Tickets are

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#### **ORIGINAL RESEARCH PAPER**

#### **Mathematics**

AN INTERVAL VALUED LINEAR PROGRAMMING PROBLEM WITH TRAPEZOIDAL Z FUZZY NUMBER

KEY WORDS: Z number, interval valued Z fuzzy number (IVZFN), Z fuzzy linear programming problem (ZFLPP), interval valued Z fuzzy linear programming problem (IVZFLPP)

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This paper gives the modified interval valued Z fuzzy numbers (IVZFN) for solving interval valued Z fuzzy linear programming problem (IVZFLPP) with trapezoidal Z fuzzy numbers by assuming different cut values. An illustrative numerical example is presented in order to clarify the proposed approach.

#### 1.INTRODUCTION:

The belief of fuzzy sets was introduced by Zadeh [9] and it was indiscriminate to trapezoidal fuzzy sets by Atanassov [2,3]. Zadeh have also anticipated a belief, namely Z-number, which is an order pair of fuzzy numbers ( $\overline{A}, \overline{R}$ ) The first component  $\overline{A}$ , plays the role of a fuzzy restriction. And the second component  $\overline{R}$  is a reliability of the first component[10]. This manuscript focuses on trapezoidal Z fuzzy numbers (TZFNS) and interval valued Z fuzzy numbers by presumptuous various cut values from them. When we judge the interval valued Z fuzzy numbers(IVZFNS), the arithmetic operations interval valued Z fuzzy numbers(IVZFNS), the arithmetic operations defined on them are of great authority. In the literature, Interval Arithmetic was first suggested by Dwyer [5] in 1951. The same was developed by Moore [6], Ganesan.K. and Veeramani.P[6] and Nagoor Gani. A and Irene Hepzibah. R[8]. Here in this work, we used the same operations to interval valued Z fuzzy numbers(IVIFNS) to get the preferred conclusion. Many researchers have applied the fuzzy set theory to the field of decision making. Bellman and Zadeh [4] proposed the concept of decision making In fuzzy envoironment. Zimmermann[11] proposed the first formation of fuzzy linear programming problem. The paper is organized as follows: Section 2 introduces the preliminaries of fuzzy set, trapezoidal fuzzy number, Z fuzzy new programming to the preliminaries of fuzzy set, trapezoidal fuzzy number, Z fuzzy new programming to the control of the preliminaries of fuzzy set, trapezoidal fuzzy number, Z fuzzy new programming problem. the preliminaries of fuzzy set, trapezoidal fuzzy number, Z fuzzy n number, interval valued Z fuzzy numbers. Section 3 deals with the formulation of Z fuzzy linear programming problem(ZFLPP), interval valued ZFLPP and ranking function. Section 4 discusses the algorithm for solving IVZFLPP. In section 5, an application of these are discussed by a numerical illustration and some concluding remarks are given in Section 6.

### II.PRELIMINARIES

A. **DEFINITION 1: [9]**Let X be a nonempty set. A fuzzy set  $\overline{A}$  of X is defined as  $\overline{A} = ((\kappa, \mu_A(\kappa)) \times \epsilon \times)$  where  $\mu_A(\kappa)$  is called the membership function which maps each element of X to a value between 0 and 1

A fuzzy number is a generalization of a regular real number and which does not refer to a single value but rather to a connected set of possible values, where each possible value has its weight between 0 and 1. This weight is called the membership function

A fuzzy number  $\tilde{a}$  is a convex normalized fuzzy set on the real line R

- There exist at least one  $x \in \mathbb{R}$  with  $\mu_{\widetilde{A}}(x) = 1$
- $\mu_{\overline{A}}(x)$  is piecewise continuous

#### C. DEFINITION 3: [1]

A trapezoidal fuzzy number A can be expressed as [a1,a2,a3,a4] and its membership function is defined as

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$$\widetilde{a} = \begin{cases} \frac{x - a_1}{a_2 - a_1}, & \text{for } x \in [a_1, a_2] \\ 1 & \text{for } x \in [a_2, a_3] \\ \frac{a_4 - x}{a_4 - a_3}, & \text{for } x \in [a_3, a_4] \\ 0 & \text{otherwise} \end{cases}$$

#### D. DEFINITION 4: [1]

If  $\widetilde{A} = [a1, a2, a3, a4]$  is a trapezoidal fuzzy number, we will let  $\widetilde{A}_{\alpha} = [A_{\alpha}^{-}, A_{\alpha}^{+}]$  where  $[A_{\alpha}^{-}, A_{\alpha}^{+}] = (\alpha(a_2-a_1)+a_1, a_4-be$  the closed interval which is  $\alpha$ —cut for  $\widetilde{A}_{\alpha}^{-} = a_1$ .

A Z-number is an ordered pair of fuzzy numbers denoted as Z-( $\lambda$ ). The first component  $\lambda$  a restriction on the values, is a real-valued uncertain variable X. The second component  $\lambda$  is a measure of reliability for the first component.

#### III FORMULATION OF PROBLEM:

### A. FORMULATION OF Z FUZZY LINEAR PROGRAMMING

The general form of optimization problem with Z- fuzzy objective function ₹ and mZ-fuzzy constraints is given by

$$\max \ \mathbf{z}_{k}(\widetilde{\mathbf{A}}, \widetilde{\mathbf{R}}) = \sum_{i=1}^{n} \widetilde{\mathbf{c}}_{j}^{k} \widetilde{\mathbf{R}}_{j}^{k} \widetilde{\mathbf{x}}_{j},$$

Where 
$$k=1,2,3,....,K$$
 
$$\sum_{j=1}^{n}\widetilde{a}_{ij}\widetilde{K}_{ij}\widetilde{x}_{j}\leq\widetilde{k}_{i}\widetilde{K}_{iJ},$$
 Subject to 
$$i=1,2,3,....,m; \quad j=1,2,3,....,n$$
 
$$\widetilde{x}_{j}\geq0, j=1,2,3,....,n.$$

#### B. Formulation of Interval Valued Z Fuzzy Linear Programming Problem (IVZFLPP):

By assuming the prescribed value of  $\alpha$  the problem can be restated as  $\mathbf{z}_{k}(\widetilde{A}, \widetilde{R})_{\alpha} = \sum_{j=1}^{n} (\widetilde{c}_{j}^{k})_{\alpha} (\widetilde{R}_{j}^{k})_{\alpha} (\widetilde{x}_{j})_{\alpha}$ 

$$\begin{split} & \text{Where } k = 1, 2, 3, \dots, K \\ & \text{Subject to} \quad \sum_{l=1}^{n} \left(\widetilde{\boldsymbol{a}}_{ij}\right)_{a} \left(\widetilde{\boldsymbol{K}}_{jl}\right)_{a} \leq \left(\widetilde{\boldsymbol{K}}_{i}\right)_{a} \left(\widetilde{\boldsymbol{K}}_{jl}\right)_{a}, \\ & \quad i = 1, 2, 3, \dots, m; \quad j = 1, 2, 3, \dots, n \\ & \quad \left(\widetilde{\boldsymbol{X}}_{j}\right)_{a} \geq 0, \ j = 1, 2, 3, \dots, n. \end{split}$$



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## Arithmetic operations on Pythagorean Z Numbers

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Abstract – This document gives the idea of Pythagorean Z numbers, operations on Pythagorean Z numbers which helps us to overcome the situation where the membership function and non- membership function is greater than one in uncertainty and reliability.

Keywords : Pythagorean fuzzy set (PFS), Pythagorean Z numbers (PZN), Arithmetic Operations, θ – cut of PZN.

#### LINTRODUCTION

Pythagorean set theory is a documented technique to manage uncertainty in the optimization problem. The generalization of intuitionistic fuzzy set is a Pythagorean fuzzy set. Considering a situation where the sum of the membership function and non-membership function is greater than one. For example, suppose a person expresses his preferences towards the alternative in such a way that degree of their satisfaction is 0.6 and degree of rejection is 0.8. Obviously its sum is greater than one. To solve these types of problems, Yager (2013, 2014) [110, 111] introduced the concept of another set called Pythagorean fuzzy set. PFS proposed a new tool to deal with vagueness considering the membership and non membership grade satisfying its conditions. Garg [39] presented an improved score function for the ranking order of interval valued Pythagorean fuzzy sets. Other explorations of the theory of PFS can be found in [31, 35, 42, 45, 70, 75]. Perez – Dominguez L [72] who presented a multi-objective optimization on the basis of PFS. Zadeh [123] defined a Z number associated with an uncertain variable which represents an idea of certainty. Z number is used in the consign where the simplest problem ends up with complex optimization problems. Computations with Z numbers are a topic which is both interesting and useful. In this chapter a new concept called Pythagorean Z numbers (PZN) is defined to manage uncertainty and reliability together. This methodology is considered as a generic decision making procedure, especially when PZNs are applied to real decision making problems.

#### II PRELIMINARIES

Here we have defined Pythagorean Z number (PZN) and various operations on the same are also defined.

#### A. Pythagorean Z number

Let X be the non empty set and I be the unit interval [0,1]. A Pythagorean Z number (PZN) is defined as  $PZN = \left\{ \langle x, \langle \delta_U(x), \xi_U(x) \rangle \langle \delta_R(x), \xi_R(x) \rangle : x \in X \rangle \right\}$  where  $\delta_U(x) : X \to [0,1], \xi_U(x) : X \to [0,1], \delta_R(x) : X \to [0,1], \xi_R(x) : X \to [0,1]$  denote the degree of member ship and non member ship of uncertainty and reliability with  $0 \le (\delta_U(x))^2 + (\xi_U(x))^2 \le 1$  and  $0 \le (\delta_R(x))^2 + (\xi_R(x))^2 \le 1$ 

B. Logical Operations on Pythagorean Z numbers

Let the two PZNs be  $PZN = \langle x \langle \delta_{U_1}(x), \xi_{U_1}(x) \rangle \langle \delta_{U_1}(x), \xi_{U_2}(x) \rangle \langle \delta_{U_1}(x), \xi_{U_2}(x) \rangle \langle \delta_{U_2}(x), \xi_{U_2}(x), \xi_{U_2}(x), \xi_{U_2}(x) \rangle \langle \delta_{U_2}(x), \xi_{U_2}(x), \xi_{U_$ 

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Research Article

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## Procreation and Quality Analysis of Cow Curd by Using Starter Culture as Fermented Rice Rinsed Water

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#### Abstract

Lactic acid bacteria are a diverse group of bacteria that produce lactic acid as their major fermentation product. The LAB is widespread in nature and is beneficial probiotics in our digestive systems. Cow's milk offers a rich source of calcium for bone development. The protein in cow's milk is 20% whey protein and 80% casein protein.

The production of cow curd by fermentation of cow's milk with *Lactobacillus planetarum* which is isolated from rice rinsed water was studied. The efficacy of using rice rinsed water of 10%, 15%, 20%, 25% of prepared LAB solution is added to cow's milk (C1, C2, C3 and C4) as a starter culture. Fermentation of cow milk was done by using 20% of LAB solution which is noted as imparted beneficial effects of sensory, physiochemical, nutrient and microbial properties of curd. The overall acceptability was greatest for cow curd C3, crude protein content (2,6 g), fat (6,0 g), calcium of 100 mg and lactose (5.2 g) were recorded from cow curd of 20%. So this type of curd is recommended for weight watcher and ortho persons.

Keywords: Lactic acid bacteria; Cow's milk; Fermentation; Starter

#### Introduction

The LAB is used as natural or selected starters in food fermentations The LAB is used as natural or selected starters in tood termentations in which they perform acidification due to the production of lactic and acetic acids flavor. Protection of food from spoilage and pathogenic microorganisms by the LAB is through production of organic acids, hydrogen peroxide, and diacetyl, antifungal compounds such as fatty acids or phenylacetic acid and/or bacteriocins [1]. Probiotics are defined as "Living organisms which upon ingestion in certain number exert health benefits beyond inherent basic nutrition". LAB are useful for human being and animals in many aspects these include, prevention of diarrhoea, effects in lactose intolerance, treating ulcer, stimulation of immunity both at intestinal and systemic level, food preservation effects, antifungal activity, role in infectious diseases prevention, role in allergy, effects on the incidences of colon cancer and slow the progression of cancer, and produce many valuable dairy products [2]. Yogurt is considered as healthy food due to its high digestibility and bioavailability of nutrients and also can be recommended to the people with lactose intolerance, gastrointestinal disorders such as inflammatory bowel disease and irritable bowel disease, and aids in immune function and weight control. Because of these health benefits associated with yogurt consumption, there is an increasing trend for yogurt and is the fastest growing dairy category in the market, in particular, standard yogurt and yogurt drinks [3]. Global interest in rice and its fermented product is increasing due to their caloric value, unique quality, and high acceptability. Rice is a good source of carbohydrates (77-89 percentage) and energy (1460-1560 KJ). It also provides a moderate amount of protein (6.3-7.1 percentage), though it is devoid of lysine. There are many popular rice fermentation procedures used to make it more nutritious (i.e., enrichment with essential amino acids and removal of phytic acid, a major anti-nutrient in rice), easily digestible (as microbial enzymes predigest it), and acquire therapeutic properties (antimicrobial peptides, antioxidants, etc.) and symbiotic properties [4].

#### Materials and Methods

#### Preparation of rice water

Take 150 gm of rice and 400 ml of drinking water in a vessel. Soak

the rice in this measured quantity of the water in a bowl. Kept it for half an hour. After half an hour filter the rice rinsed with water and rice water separately. Make sure that there is no rice in this collected rinsed water.

#### Preparation of lab solution

Fill a clean glass jar about two by third full with rice rinsed water. Cover the mouth of the jar with breathable cloth (such as muslin) or paper (not plastic) and secure with rubber bands or ties to keep out pests. Store at room temperature away from direct light. Be careful not to shake or move the jar while it ferments. After 5 days, LAB will multiply and give off a slightly sour odor. There will be a mat of semi-solid material floating on the top of the cloudy liquid in the jar. Collect only the cloudy liquid (fermented rinse-water) by pouring off and discarding the mat layer. Measure one part of fermented rinse-water and add 10 parts of milk to fill your jar 2/3 full. As in the next step, cover the mouth of the jar with cloth or paper and secure with rubber bands or ties to keep out pests. Store at room temperature away from direct light. Be careful not to shake or move the jar while it ferments. After 2 to 3 days, the contents of the jar will separate into a floating solid fraction and a yellow liquid fraction. It may take longer in cooler climates. The yellow liquid is the LAB culture. Pour off the liquid fraction, being careful not to mix any solids back into the LAB culture. The preparation of LAB solution procedure was presented in Figure 1.

### Preparation of fermented cow's milk

Pure cow's milk is selected for the preparation curd. Cow's milk is boiled at the 100°C. After that kept in room temperature till it reaches 40°C. Add four different quantity of LAB solution (fermented rice rinsed water) as the starter culture in C1, C2, C3, and C4 variations of cow's

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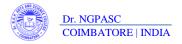
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## High Dimension Multi Class Algorithms (HDMCA) For Classification And Prediction: An Analysis Of Different Algorithms, Performance Measures And Datasets.

V.Shobana, Dr. K.Nandhini

Abstract: The dissection of a particular disorder is a needy one in the modern environment of our living. Our modern living which is not of much physical activity prone to many disorders in our body. Healthcare is a paramount part where so many research designs and proposals are made. Most of the algorithms entangled in healthcare, lets in for a number of results each of which was finer in their own way. The line of work carried out in this research is of applying a dataset for most leading algorithms and the best one is chosen for the next stage. The work is administered through the big data tool R and the results are compared across different metrics. From the results the top two sustaining algorithms are chosen for the forthcoming part.

Keywords: multiclass classification, random forest, SVM, LDA, kNN, CART, big data, HDMCA

#### 1 INTRODUCTION

Algorithms based on data mining are very much useful in the field of healthcare for prediction of disorders. Classification and prediction are the two forms of data analysis. Of the entire classification algorithms decision tree takes a predominant position in predicting the target variable. Decision tree induction or decision tree is a flowchart like tree structure used to predict and classify data more precisely. Many researchers have formulated so many hypothesis using decision trees and they all have shown good results. The dataset taken in this research is thyroid data. The thyroid disorder is one of the most common endocrine disorders which is common worldwide especially in women. Most of the women around the globe suffer from this particular disorder and if they are not treated on time, it will result in serious issues. For predicting thyroid disorders various researches has been done worldwide. The main objective of this research is to compare some of the well known decision tree algorithms such as LDA, CART, kNN, SVM and random forest. These algorithms are performed on the data set using big data open source tools. The performance metrics such as ACC, MAE, PRE, REC, FME and kappa statistic are used to measure the performance of the algorithms.. These algorithms are compared with the above mentioned performance metrics. Each algorithm performs in their own way and the results are compared for the best one

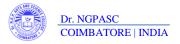
### **II. LITERATURE REVIEW**

Comparison of algorithms forms an important part in the field of machine learning research ( Kibler and Langley

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The thyroid dataset analysis started in the year 1984 by Breiman et.al[1984], followed by Cestnik et.al in 1987,Quinana in 1988 and 1989. In the year 1992, Wray Buntine et al. [1] compared the decision tree for several datasets such as breast cancer, hypothyroid, iris etc., the decision tree implementation applied in his work was proposed originally by David Harper, Chris Carter, and other students at the University of Sydney from 1984 to 1988. Bruntine then proposed new splitting rules for decision tree induction. In his article [2] he used CART and ID3 algorithms and compared their performance. J. Huang et al. [3] compared NaiveBayes, SVM and decision trees with AUC and accuracy as performance metrics. The performance metric AUC (Area under Curve of ROC) exhibits several desirable properties compared to other metrics. In 2008, Keles. A et al. [4] formulated an expert system which was based on Neuro-Fuzzy classification for thyroid disorders, with an accuracy of 95.33%. Yuwei Hao et.al [5] generated as MsaDtd (Decision Tree based on MS-Apriori) approach that follows association rule mining and turns out with an accuracy of 87.21%. Maysanjaya et al. [6] used Multilayer Perceptron method to identify the type of thyroid (normal, hypothyroid, hyperthyroid) using WEKA tool. The accuracy of the prediction was 96.74%. A. Tyagi et al. [7] proposed a analysis of thyroid dataset using kNN, SVM, ANN and Decision Trees. The result shows SVM as the best predictor with 99.63%. Many researchers have so many findings with thyroid data set in their own way. Our work is to focus on the decision tree algorithms such as LDA, SVM, CART, kNN and Random Forest. These algorithms are implemented using the open source framework R studio and the results are compared.The framework for comparison of the decision tree algorithms goes in this way. The proposed methodology is shown in

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Journal of International Pharmaceutical Research, ISSN: 1674-0440

### Drug suggestion concerned automated drug knowledge ontology construction framework

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Drug effect identification suggesting proper drug is the most critical task in the medical care environment which needs to be done with more concern. In our previous research work, drug effect identification is performed from the real world tweets gathered from the twitter website using Relevancy and Similarity Aware Drug Comment Classification Framework (RSDCCF). However this method doesn't focus on the faster response and proper drug suggestion based on side effects. This is focused in this research work by introducing the method namely Drug Suggestion Concerned Automated Drug Knowledge Ontology Construction Framework (DSCADKOCG). This research work can ensure the proper drug suggestion to the patients based on side effects. In this research work, automated ontology construction is performed based on drug tweets gathered from the social websites which can lead to construction of Drug Knowledge Source Ontology Construction. After ontology construction, drug learning is performed using the constructed ontology and the drug database using TSVM classifier. Based on this learned knowledge automated and fast drug suggestion is performed using Semantic query based drug suggestion approach. The overall evaluation of the research method is performed in the matlab simulation environment from which it can be proved that the proposed research technique can lead to provide the optimal outcome than the existing research techniques. than the existing research techniques

Keywords: Drug Effect, Side Reactions, Drug Suggestion, Ontology Construction, Semantic Query, Drug Tweets.

Adverse drug reactions (ADRs) are unavoidable outcomes of pharmacotherapy [1]. It is notable that all medications convey the possibility to deliver both alluring and unwanted impacts. No medication is totally sheltered under all conditions of utilization or in all patients and ADRs may happen regardless of whether a medication is accurately chosen and dosed [2]. Drawback of not detailing may bring about injurious impacts of a restorative item not being detectable for quite a while or the affiliation turned out to be clear overall e.g. Headache medicine in the amydopyrine tract, Gastro-intestinal agranulocytosis, phocomelia with thalidomide [3]. For a similar reason it might take too some time before it is perceived that delayed manhandle of a therapeutic item can create consider wellbeing impacts e.g. Phenacetin in renal papillary putrefaction

In the course of the most recent decade, sedate wellbeing information acquired from spontaneous reporting systems (SRSs) have been dissected quantitative information methodology to recover firmly related medication/ ADR sets [4]. These featured affiliations are hence

looked into and examined by space specialists. Shockingly, investigate recommends information gathered by SRS are restricted by lengthy time span inactivity, mistaken or deficient clinical data, underreporting and detailing predisposition [5]. Thusly, clinicians and specialists have likewise used existing human services information sources, for example, Electronic Health Records (EHRs) to endeavor to recognize already unreported ADRs.

However, these information are intrinsically loud as medications and potential reactions may co-happen in the EHR for some reasons [6]. What's more, the EHR frequently contains free-content information, and the precision of Natural Language Processing (NLP) apparatuses isn't great. New techniques are required to specifically distinguish conceivably dangerous medication/ADR affiliations. Thus, the improvement of computational ways to deal with all the more precisely distinguish potential reactions is as of now a functioning zone of research [7]. These methodologies have overwhelmingly centered around enhancing signal discovery utilizing factual strategies, machine learning (ML) or some blend thereof [8]. We consider an arrangement of late mark changes for our investigation of the early ID of ADRs from logs of

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# A STUDY ON SATISFACTION OF PASSENGERS TOWARDS AMENITIES PROVIDED BY COIMBATORE JUNCTION

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#### **ABSTRACT**

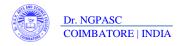
The Servqual approach is the most common method for measuring service quality. It was formulated on the tenet the passengers entertain expectations of performance on the service dimensions, observe performance and later performance perceptions transform in to satisfaction degree. The main objective of the study is to analyse the level of satisfaction of passengers in Coimbatore junction based on service quality provided. For this, a sample of 250 was collected each from Coimbatore junction were percentage analysis, Descriptive statistics and Kruskal-Wallis test were used as tools to analyse the data. The conclusion is that the level of satisfaction of passengers booking clerk competency & behaviour, unauthorized vendors& passengers, cleanliness of platforms, safety, linen/bedroll cleanliness is higher with Coimbatore junction.

Keywords: Servqual, level of satisfaction and Performance.

#### INTRODUCTION TO THE STUDY

Public transportation systems provide the most efficient means for moving large number of people, especially in density populated rural and urban centers in a vast country like India. For this reason, providing services characterized by high levels of quality is very important in order to customize the users of the services and attract new users. Key literature review on the passengers' experiences and their satisfaction towards railway services offered in Indian railways. Service quality may be defined as passenger perception of how well a service meets or exceeds their expectations. Satisfaction from service quality is usually evaluated in terms of technical quality and functional quality. This paper is an attempt to put forth the role of service quality in affecting passenger satisfaction in the train, with special reference to South Indian Railways. The study is to compare the satisfaction of passengers in Coimbatore junction in

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### Hydrothermal synthesis of ZnO-CdS nanocomposites: Structural, optical and electrical behavior



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ARTICLE INFO

Keywords. ZnO-CdS nanocomposites Band gap Flake-like morphology Dielectric properties

ZnO-CdS nanocomposites with three different molar ratios of 25:75, 50:50 and 75:25 were synthesized by simple hydrothermal technique. Powder X-ray diffraction patterns confirmed the phase formation of ZnO and CdS in ZnO-CdS nanocomposites. The calculated crystallite size was found in the range of 33–38 nm and 15-21 nm for ZnO and CdS respectively. HRSEM images revealed flake-like morphology for all samples. Energy dispersive X-ray spectra confirmed the presence of all the elements. The estimated optical bandgap was found in the range of 3.71-3.35 eV. IR spectra confirmed the formation of stretching vibration in ZnO and CdS. Dielectric analysis was performed in order to study Ac conductivity, dielectric constant and dielectric loss. Photoconductivity studies revealed that ZnO-CdS nanocomposites material exhibited sound photo-response characteristics.

#### 1. Introduction

Inorganic composite materials at nano scale region exhibit unique electrical and optical properties which make them suitable for versatile applications [1–7]. Zinc oxide is a well-known wide band gap semiconductor (II-VI) compound and it exhibits high exciton binding energy (60 meV) at ambient temperature. Taking aid of such attractive behavior zinc oxide is widely used to fabricate electronics devices such as photonic and optical modulators, waveguides, phosphor material in Cathode Ray Tube (CRT) screens and ultra-violet laser diodes [8–15].

In particular, quantum confinement effects and surface to volume ratio of nano-sized ZnO modify the photosensitive, magnetic and electronic properties compared to the properties of their bulk counterparts. Cadmium sulphide with wide band gap (~2.42 eV) is also a known semiconductor (II-VI) compound and exhibits 28 MeV of exciton binding energy [16]. This notable property of CdS used in different applications like photoresistors, solar cells, X-ray detectors and optoe lectronic devices [17-23]. Further the materials such as CdO, CdS, ZnS and ZnO at nano scale region are successfully utilized in applications such as nanolasers, transistors and light emitting diodes (LED's) [17,18,21-24].

It is found that the performance of ZnO-CdS nanocomposite is enhanced due to the combination of cadmium sulphide and zinc oxide [25]. ZnO nanowires [26,27] and CdS nanoribbons [28,29] were investigated for their photoconductivity properties and it is found that these nanomaterials possess higher photoresponse with strong polarization dependence [30–32]. Photoconductivity is a well-known tool to obtain detail information about the nature of the photo-excitations. The photoconductive behavior of the inorganic nanomaterials has been investigated successfully in the last decade [33]. Recently, ZnO nanoparticles enhanced with ultrathin coatings of other metal oxides to develop new electrode for getting electrons in photovoltaic devices [34]. In addition, it revealed that the physical behavior of ZnO could be adequately altered by surface modification with certain biological, inorganic and organic materials leading to a pronounced improvement in photoelectronic, mechanical and electronic behavior. The techniques viz. co-precipitation [35], spray pyrolysis [36], sol-gel [37], chemical vapor deposition [38] and hydrothermal route [39] are widely employed to synthesize ZnO and CdS nanoparticles. Among these, the hydrothermal method was chosen owing to some advantage like ease of synthesis and low cost when compared with other synthesis route.

In this paper, ZnO-CdS nanocomposites with three different molar

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# A Study on Impact of Digital Marketing in Customer **Purchase Decision in Coimbatore city**

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#### Abstract

This study shows the impact of digital marketing on behavioral prospect of consumers. Modern day marketing has been going through a radical change. Fast moving marketing trends based on the growth and innovation of new technologies as well as portable communication devices influencing the customer behavior significantly. The study is carried out through survey from50 respondents. The results of the survey are analyzed using chi square test. The findings revealed that customers a<mark>re awa</mark>re of digital marketing and they prefer to by electronic and shopping goods through digital channels in their purchase behavior.

Keywords: Customer Purchase Behavior, Digital Channels, Digital Marketing.

## Introduction:

Digital marketing encompasses all marketing efforts that use an electronic device or the internet. Businesses leverage digital channels such as search engines, social media, email, and other websites to connect with current and prospective customers. At a high level, digital marketing refers to advertising delivered through digital channels such as search engines, websites, social media, email, and mobile apps. Using these online media channels, digital marketing is the method by which companies endorse goods, services, and brands. Consumers heavily rely on digital means to research products.

While modern day digital marketing is an enormous system of channels to which marketers simply must onboard their brands, advertising online is much more complex than the channels alone. In order to achieve the true potential of digital marketing, marketers have to dig deep into today's vast and intricate cross-channel world to discover strategies that make an impact through engagement marketing. Engagement marketing is the method of forming meaningful interactions with potential and returning customers based on the data you collect over time. By engaging customers in a digital landscape, you build brand awareness, set yourself as an industry thought leader, and place your business at the forefront when the customer is ready to buy.

By implementing an Omni channel digital marketing strategy, marketers can collect valuable insights into target audience behaviours while opening the door to new methods of customer engagement. Additionally, companies can expect to see an increase in retention. According to a report by Invest, companies with strong Omni channel customer engagement strategies retain an average of 89% of their customers compared to companies with weak omni channel programs that have a retention rate of just 33%.

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# A STUDY ON ONLINE BUYING BEHAVIOUR OF PREGNANT **LADIES**

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Abstract: This study aims to explain the implementation of methodologies used for promoting product and services through the web for healthy gestation welfares. As the use of digital media for health promotion has become more and more common, descriptive exploring current and innovative promoting methods will enhance understanding of effective strategies and best practices. This study supports the employment of digital promoting as a very important avenue for delivering health messages and directive internet users to credible sources of data. The chance to achieve massive, nevertheless targeted audiences, together with the flexibility to watch and value metrics to optimize activities throughout a campaign could be a powerful advantage over ancient promoting techniques. Health organizations will use the results and insights of this study to assist inform the look and implementation of comparable Webbased activities.

Key words: Online Marketing, Pregnant women, Impact, Website





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# Enhanced ultrasensitive detection of ozone gas using reduced graphene oxide-incorporated LaFeO<sub>3</sub> nanospheres for environmental remediation process

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#### **Abstract**

An efficient and facile benign approach to develop reduced graphene oxide (rGO) incorporated into perovskite LaFeO\_3 nanostructure with excellent surface area to detect ultrasensitive Ozone (O\_3) gas for environmental remediation has been demonstrated. The prepared rGO/LaFeO\_3 nanocomposites have diameter in the range ~ 1  $\mu m$  constituting nanospheres with average size ~ 50 nm. Phase purity and chemical composition of rGO/LaFeO\_3 nanocomposites were revealed through XRD and XPS analysis. The ozone gas sensing performance of rGO/LaFeO\_3 nanocomposites was investigated and found to exhibit excellent sensitivity, high selectivity, good response (20 and 31 s) and recovery time (39 and 31 s) for 80 ppb at 100 °C when compared to pure LaFeO\_3 nanostructures. These results indicate that the composites of rGO not only enhanced the ozone gas sensing response at low ppb concentration, but also a decrease in the working temperature. From these perspectives, rGO/LaFeO\_3 nanocomposites based ozone gas sensor can be regarded as a promising candidate for environmental remediation process in near future.

#### 1 Introduction

Detection of toxic gases play a critical role in environment remediation process, because fast development in industries and passionate use of automobile have caused sever air pollution. The monitoring of toxic gases such as carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ammonia (NH<sub>3</sub>) and ozone (O<sub>3</sub>) etc., have attracted huge attention [1–3]. In particular, O<sub>3</sub> is the most common air pollutant produced and powerful oxidizing reagent, having continuing demand for its efficient detection not only for industrial safety concerns but also environment remediation [4, 5]. Those exposed to O<sub>3</sub> below 100 ppb for 3 h will sustain a 20% loss of breathing capacity and 1 ppm of O<sub>3</sub> for 6 h will suffer an attack of bronchitis. It was observed that a mouse exposed to 10

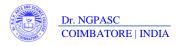
ppm of  $O_3$  for 10 h did not survive as reported by World Health Organization, WHO [6]. Thus, the sensitivity and selectivity measurement of  $O_3$  has dynamic importance for a pollutant-free ecosystem [7]. In this regard, intensive attention to develop new ozone gas sensor reliable at ppb level detection with fast response, recovery time and low operating temperature is required.

To meet these requirements, shape-dependent perovskite (ABO3)/graphene oxide (GO) nanocomposite based toxic gas sensors have considerable interest, because it significantly enhances the catalytic properties. Reduced GO (rGO), an attractive carbon family member and allotrope of carbon have two-dimensional single atomic layers. It has unique structure with sp2 hybridized carbon atoms. It shows remarkable properties such as good electrical conductivity, large surface area and fast charge carrier density. rGO plays an important role in adsorbing catalytic molecules, because rGO sheets desire to aggregate irreversibly, due to the stack of strong  $\pi$ - $\pi$  interactions [8–10]. In addition, p-type semiconductors have distinct surface reactivity and oxygen adsorption capacity, which benefits the enhancement of gas sensing performance when incorporated with other components especially GO [8-10]. LaFeO<sub>3</sub>, a p-type material with majority hole carriers have good oxidation-reduction characteristics at wide temperature due to its

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Cellular Oncology https://doi.org/10.1007/s13402-020-00505-9

**REVIEW** 



# Insulinoma-associated protein 1 (INSM1): a potential biomarker and therapeutic target for neuroendocrine tumors

B. Mahalakshmi¹ • Rathinasamy Baskaran² • M. Shanmugavadivu³ • Ngoc Tuan Nguyen⁴ • Bharath Kumar Velmurugan⁵ ©

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#### Abstract

Background Insulinoma-associated protein 1 (INSM1), a transcriptional regulator with a zinc-finger DNA-binding domain, has been validated as a cytoplasmic marker for neuroendocrine differentiation of tumor cells. Next to its abundant expression in the fetal pancreas, it is expressed in brain tumors, pheochromocytomas, medullary thyroid carcinomas, insulinomas and pituitary and small-cell lung carcinomas. INSM1 is not expressed in normal adult tissues and/or most non-neuroendocrine tumors. It regulates various downstream signaling pathways, including the Sonic Hedgehog, PI3K/AKT, MEK/ERK1/2, ADK, p53, Wnt, histone acetylation, LSD1, cyclin D1, Ascl1 and N-Myc pathways. Although INSM1 appears to be a subtle and specific biomarker for neuroendocrine tumors, its role in tumor development has remained unclear.

Conclusions Here, we highlight INSMI expression, as well as its diagnostic significance and use as a therapeutic target in various neuroendocrine tumors. Targeting signaling pathways or gene expression alterations associated with INSM1 expression may be instrumental for the design of novel therapeutic strategies for neuroendocrine tumors.

Keywords Neuroendocrine tumor · Insulinoma-associated protein 1 · Tumor marker · Chromogranin A · Synaptophysin 1

#### 1 Introduction

Neuroendocrine tumors (NETs) are epithelial neoplasms exhibiting neuroendocrine differentiation characteristics. Immunohistochemical markers are used to diagnostically evaluate these tumors [1]. As such, the transcription factor

B. Mahalakshmi and Rathinasamy Baskaran are contributed equally to this publication

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insulinoma-associated protein 1 (INSM1) is of relevance. Previously, Goto et al. constructed a human insulinoma cDNA library (ISL-153) and, by screening this library, identified a novel insulinoma-associated cDNA, i.e., insulinassociated antigen-1 (IA-1), which is now known as insulinassociated protein 1 (INSM1) [2]. The INSM1 gene encodes a 58 kDa protein encompassing five zinc-finger DNA-binding motifs and dibasic amino acid pro-hormone conversion sites [2, 3]. Its N-terminus exhibits repressor activity [4]. The INSM1 gene is located on chromosome 20p11.2 (Fig. 1a). An amino acid region between positions 167 and 262 at the N-terminus is responsible for its transcriptional activity [5–9]. Reactivation of INSM1 has been observed in tumors of neuroendocrine origin, including insulinomas, pituitary tumors, pheochromocytomas, medullary thyroid carcinomas, smallcell lung carcinomas, medulloblastomas, neuroblastomas and retinoblastomas.

Different regulatory elements upstream of the *INSMI* gene have been found to act in different NETs [10]. The 5'-upstream region (2,090 bp) of *INSMI* contains several tissue-specific regulatory elements that appear to account for its unique tumor-associated expression pattern [11]. Since INSM1 is highly expressed in tumors of neuroendocrine





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Research Article

# Wet chemical preparation of herbal nanocomposites from medicinal plant leaves for enhanced coating on textile fabrics with multifunctional properties



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#### Abstract

The present study is aimed at the synthesis of different herbal nanoparticles from Acalypha indica, Azadirachta indica, Piper betle, Tridax procumbens and Aloe vera plant leaves through wet processing method i.e., solution based synthesis for the development of a biocompatible nanomaterials with excellent medicinal properties. The efficiency of herbal nanoparticles are determined by subjecting a comparative assessment among the various herbal nanoparticles in virtue of their physico-chemical as well as their functional properties when coated on cotton fabrics. The prepared five different herbal nanoparticles show amorphous nature having an average particle size distribution ranges from 21 to 27 nm. Tridax procumbens nanoparticles exhibit higher antioxidant activity (98.17%) while tested against DPPH assessment. Nevertheless, the herbal nanocomposites prepared from Aloe vera with chitosan polymer shows higher protection (UPF = 62.3) than the fabric coated with other herbal nanoparticles. The superhydrophobic properties (154.5°) and higher antibacterial properties against Escherichia coli (33.13 mm) and Staphylococcus aureus (35.62 mm) for the Azadirachta indica nanocomposite coated cotton fabrics shows comparably more effectiveness than that of the other counterpart. The present study helps to identify the appropriate processing methods as well as herbal nanoparticles for enhanced the self-cleaning, UV-protection, antibacterial and antioxidant activity in biomedical textiles.

Keywords Herbal nanoparticles · Cotton fabrics · Antimicrobial activity · UV-protection · Antioxidant activity · Hydrophobicity

#### 1 Introduction

Nanotechnology, the study of the technological aspects of nanoparticles is playing a major role in terms of textile due to the ease of surface modification of these materials [1] and its higher surface to volume ratio [2]. The growing public awareness of contagious pathogens facilitates the need of new surface modification of cotton fabrics, because of its large surface area and moisture retainment ability resulting in an excellent medium for microbial growth [3, 4]. The development of new cotton fabrics based nanocomposites to wide spectrum applications in different fields such as antimicrobial [5], wound healing [6], water repellence [7, 8], hygienic application [9]

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Original research article

# Gas sensing nature and characterization of Zr doped TiO<sub>2</sub> films prepared by automated nebulizer spray pyrolysis technique



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#### ARTICLE INFO

Automated nebulizer spray pyrolysis method Structural study Optical study and gas sensing behavior

#### ABSTRACT

This paper investigates the Zr doped TiO2 films deposited by automated nebulizer spray pyrolysis (ANSP) technique at 500 °C as coating temperature. The manipulation of Ti/Zr ratio on XRD study shows the stabilized anatase tetragonal crystal structure in all deposited films, and the XPS study shows C 1s, Ti 2p, Zr 3d and O 1s are spin orbits of the relative elements. The surface morphological study of FESEM shows the compact granular spherical structure for all the Zr doped  $TiO_2$  films. The optical study reveals the blue-shift of band gap energy  $E_g = 3.20 \text{ eV}$  to 3.64 eV with respect to dopant (Zr). Gas sensitivity response of all films exhibits the better response to NH3 reducing gas among the other gas (C2H6O, C3H6O, CH4O, C3H8O) with a function of constant temperature (°C) and gas concentration (ppm).

#### 1. Introduction

The gas sensor materials of metal oxide holds an enormous of unpleasant properties; such as long-range signal drift, humidity sensitivity, slow sensor response and high cross sensitivity. In order to improve sensor performance, a progression of different metaloxide semiconductors has been tested. The n-type metal oxide of TiO2 semiconductors have been gained more attention due to their low cost, non-toxicity, long term stability, high and quick response with relatively simplicity of their uses; and ability to detect a maximum number of gases. Especially, the doping component is used to modify and improve the progression of oxides for the new and advanced performance of various electronic devices, thus modifying the electrical, structural, optical and morphological properties of parent metal oxides (TiO2). The recent survey report says that the introduction of few amount of Zr could drastically improve the thermal stability of anatase phase and surface properties of the coated films [1]. The elements IV B of Ti and Zr have the same valence state (+4) and the same diameters Ti: 2 Å, Zr: 2.16 Å. Both oxides are in n-type semiconductors with similar physicochemical properties. Therefore, it is possible that Zr enters the TiO2 lattice, changes and increases the length of the bond to form anatase crystallites of Zr doped TiO2 [2-7].

The Zr doped TiO2 have been prepared by various methods, such as electro spinning [1], spray pyrolysis [2], APCVS [3] sol-gel [5,8,9], co-precipitation [10] complexation of citric acid [11,12], screen printing [13,14], RF magnetron sputtering [15], mechanical ball milling [16] and immersion coating [17]. Despite the fact that the Zr-doped TiO2 film has been synthesized by various methods, to our knowledge, no study of anatase-stabilized gas sensors has been identified using existing methods on Zr doped TiO2. ANSP is a simple deposit method that allows you to mix the precursor solution at the level of the molecule before deposition and effectively dope high quality films on different substrates. It can be extended to large-scale commercialization processes [18,19]. The main

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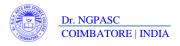
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Dual property of chitosan blended copolymer membranes: Antidiabetic drug release profile and antimicrobial assay

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# **Neutrosophic Sets and Systems**

Volume 32 Article 29

3-22-2020

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D. Sasikala

K. C. Radhamani

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# Optical character recognition based on local invariant features

Sandhya Balakrishnan Poodikkalam & Pavithira Loganathan

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# Analytical and Numerical Study on Cross Diffusion Effects on Magneto-Convection of a Chemically Reacting Fluid with Suction/Injection and Convective Boundary Condition

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**Keywords:** MHD; Soret/Dufour effects, heat generation, suction/injection, chemical reaction, convective boundary condition

Abstract: The purpose of this paper is to investigate the Soret and Dufour effects on unsteady mixed convective boundary layer flow of a viscous fluid over a stretching surface in a porous medium in the presence of magnetic field with heat generation/absorption, chemical reaction, suction/injection and convective boundary condition. The governing time-dependent partial differential equations are transformed into non-linear ordinary differential equations using similarity transformations. These equations subject to the appropriate boundary conditions are solved analytically by homotopy analysis method (HAM) and numerically by Runge-Kutta fourth order method and shooting technique. The numerical solution is compared with analytical solution. The influence of the different parameters on velocity, temperature and concentration profiles are discussed in graphical as well as in tabular form. It is observed that the fluid velocity and temperature increase on increasing the buoyancy ratio parameter and heat generation/absorption parameter. Also found that the surface heat and mass transfer rates increase on increasing the suction/injection and heat generation/absorption parameters.

#### Nomenclature

<i>a,b,c</i> positive constants	$h_f, h_\theta, h_\phi$ non-zero auxiliary parameters
A unsteady parameter	$j_{\rm w}$ surface mass flux
B <sub>0</sub> magnetic strength	$k_1$ permeability of the porous medium
Bi Biot number	k <sub>2</sub> coefficient of chemical reaction
C concentration of the fluid	k <sub>m</sub> mass transfer coefficient
$C_f$ local skin friction coefficient	$k_T$ thermal diffusion ratio
$C_i$ , (i = 1 to 7) arbitrary constants	$L_f, L_\theta, L_\phi$ linear operators
c <sub>p</sub> specific heat	N buoyancy ratio parameter
Cr chemical reaction parameter	$N_f, N_\theta, N_\phi$ non-linear operators
c <sub>s</sub> concentration susceptibility	Nu local Nusselt number
D <sub>e</sub> mass diffusivity	Pr Prandtl number
$f_w$ suction (> 0) or injection (< 0) parameter	p embedding parameter
Df Dufour number	Q heat generation ( $> 0$ ) or absorption ( $< 0$ )
g acceleration due to gravity	$q_r$ radiative heat flux
Gr local Grashof number	$q_w$ surface heat flux
Ha Hartmann number	Re local Reynolds number

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## In vitro antiviral activity of BanLec against herpes simplex viruses type 1 and 2

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The present study evaluates the antiviral activity of banana lectin (BanLec) against herpes simplex virus type 1 and 2 (HSV-1 and HSV-2). Lectin was isolated from the ripen pulp of bananas (Musa paradisiaca). The study showed that lectin exhibited hemagglutination activity towards human erythrocytes A, B, AB and O group. The molecular weight of BanLec using SDS gelelectrophoresis was found to be 14,000-30,000 Da. Cytotoxicity of BanLec on the Vero cell lines showed an inhibitory concentration of 172.7 µg/mL. BanLec was virucidal and showed no cytotoxicity at the concentration tested. The lectin showed a dose-dependent antiviral activities, inhibiting HSV-1 by 16.0 μg/mL with selectivity index 10.8 and HSV-2 inhibition by 67.7 μg/mL with selectivity index 2.6. These results corroborate that BanLec could be a rich source of potential antiviral compound for HSV-1 when compared to

## Introduction

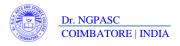
Lectins are a unique and heterologous class of proteins with the ability to recognize and reversibly bind a variety of sugar structures present on the cell surface (Santos et al., 2014). They are found in a wide range of organisms, from viruses and bacteria to animals, plants, and humans (Mitchell et al., 2017). They have important biological functions in the organisms, including cell-cell interaction, protection from pathogens, cell adhesion, and intracellular translocation of glycoproteins, and they also act as storage proteins (Yamashita et al., 1999; Jiang et al., 2006; Wang et al., 2007). At present, they are being widely used in studies of biochemistry, cell biology, immunology, glycobiology and have wide-spread applications in biomedical researches (Sharon and Lis, 1989). Due to its fine specificity, most plant lectins have been employed for various applications including cancer therapy and virus research.

Banana lectin (BanLec) was first isolated from Musa paradisiaca (Koshte et al., 1990). It is a homodimeric protein that binds mannose and mannose-containing oligosaccharides and functions as a potent T-cell mitogen (Meagher et al., 2005; Koshte et al., 1992).

Herpes simplex virus (HSV) is a DNA-containing enveloped virus, which brings commonly viral infections in humans causing a variety of diseases. HSV-1 and HSV-2 can be distinguished based on clinical manifestations, biochemical and serological characteristics. However, in patients with an immature or weak immune system, such infections can be serious and even life-threatening (Naesens and De Clercq 2001; Whitley and Roizman 2001). The current investigation was undertaken to test the BanLec for their antiviral activity against HSV-1 and HSV-2. The lectin was found to possess various in vitro activity towards HSV strains and potent anti-viral response against HSV-1 at low concentration far below the cytotoxicity threshold.



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Current Genomics, 2020, 21, 26-33

#### RESEARCH ARTICLE

# Extremely-randomized-tree-based Prediction of N<sup>6</sup>-Methyladenosine Sites in Saccharomyces cerevisiae

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#### ARTICLE HISTORY

Received: November 01, 2019 Revised: December 28, 2019 Accented: January 24, 2020

DOI: 10.2174/1389202921666200219125625 Abstract: Introduction: N<sup>6</sup>-methyladenosine (m6A) is one of the most common post-transcriptional modifications in RNA, which has been related to several biological processes. The accurate prediction of m6A sites from RNA sequences is one of the challenging tasks in computational biology. Several computational methods utilizing machine-learning algorithms have been proposed that accelerate in silico screening of m6A sites, thereby drastically reducing the experimental time and labor costs involved.

Methodology: In this study, we proposed a novel computational predictor termed ERT-m6Apred, for the accurate prediction of m6A sites. To identify the feature encodings with more discriminative capability, we applied a two-step feature selection technique on seven different feature encodings and identified the corresponding optimal feature set.

**Results:** Subsequently, performance comparison of the corresponding optimal feature set-based extremely randomized tree model revealed that Pseudo k-tuple composition encoding, which includes 14 physicochemical properties significantly outperformed other encodings. Moreover, ERT-m6Apred achieved an accuracy of 78.84% during cross-validation analysis, which is comparatively better than recently reported predictors.

Conclusion: In summary, ERT-m6Apred predicts Saccharomyces cerevisiae m6A sites with higher accuracy, thus facilitating biological hypothesis generation and experimental validations.

**Keywords:** Extremely randomized tree, feature optimization, N<sup>6</sup>-methyladenosine sites, cross-validation, RNA sequences, Saccharomyces cerevisiae.

#### 1. INTRODUCTION

Post-transcriptional modifications in RNA are the variations that occur on a newly transcribed primary RNA transcript. To date, approximately 150 kinds of RNA modifications have been determined [1, 2]. The most abundant RNA modification is N<sup>6</sup>-methyladenosine (m6A), which is prevalent among viruses, plants, insects, mammals, and eukaryotes such as yeast [3-7]. m6A denotes the methylation at N-6 position of adenosine nucleotide catalyzed by a methyltransferase complex and this reaction is reversible by demethylases (ALKBH5 and FTO). m6A modification has been involved in a series of biological processes, such as mRNA exporting, nascent mRNA synthesis, splicing events, nuclear translation, and translocation [8-10]. Importantly, unusual modifications of m6A have been associated with several diseases, including prostate cancer, thyroid tumor, leukemia, etc. [11-13]. Therefore, accurate identification of m6A modification sites would be of great benefit for cell biologists to better understand the disease mechanism.

\*Address correspondence to this author at the Department of Physiology, Ajou University School of Medicine, 16499, Suwon, Republic of Korea; Tel/Fax: +82-31-219-4555/ +82-31-219-5049; E-mail: bala@ajou.ac.kr

1389-2029/20 \$65.00+.00

Several experimental approaches, including high performance liquid chromatography [14], next-generation sequencing technologies [15, 16], and two-dimensional thin layer chromatography [17] have been widely applied in the identification of m6A sites. Particularly, next-generation sequencing is not available for large-scale genomic sequences' m6A identification. Overall, these experimental approaches are time-consuming and cost-ineffective, when applied on large-scale genome analysis. Therefore, the development of an accurate and efficient computational method for m6A identification is necessary to complement experimental approaches.

Previous decade has witnessed tremendous growth in the development of various machine-learning (ML)-based methods to predict m6A sites from RNA sequences in different species, such as Homo sapiens, Saccharomyces cerevisiae, Mus musculus, and Arabidopsis thaliana. In this study, we focused on S. cerevisiae because it has been widely recognized as an attractive model organism. To date, 14 prediction models have been developed for this species to predict m6A sites. Chen et al., [18] proposed the first predictor, where they constructed a reliable benchmark dataset of 1307 positive samples (m6A sites) and an equal number of negative samples (non-m6A sites) for S. cerevisiae based on the experimental data [19]. They developed a predictor called

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Molecular Geometry, NLO, MEP, HOMO-LUMO and Mulliken Charges of Substituted Piperidine Phenyl Hydrazines by Using Density Functional Theory

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The quantum chemical calculations of organic compounds viz. (E)-1-(2,6-bis(4-chlorophenyl)-3-ethylpiperidine-4-ylidene)-2-phenylhydrazine (3ECl), (E)-1-(2,6-bis(4-chlorophenyl)-3-methylpiperidine-4-ylidene)-2-phenylhydrazine (3MCl) and (E)-1-(2,6-bis(4-chlorophenyl)-3,5-dimethylpiperidine-4-ylidene)-2-phenylhydrazine (3,5-DMCl) have been performed by density functional theory (DFT) using B3LYP method with 6-311G (d,p) basis set. The electronic properties such as Frontier orbital and band gap energies have been calculated using DFT. Global reactivity descriptor has been computed to predict chemical stability and reactivity of the molecule. The chemical reactivity sites of compounds were predicted by mapping molecular electrostatic potential (MEP) surface over optimized geometries and comparing these with MEP map generated over crystal structures. The charge distribution of molecules predict by using Mulliken atomic charges. The non-linear optical property was predicted and interpreted the dipole moment  $(\mu)$ , polarizability  $(\alpha)$  and hyperpolarizability  $(\beta)$  by using density functional theory.

 $Keywords: Mulliken \ charges, Molecular \ electrostatic \ potential, Non-linear \ optical \ property, Molecular \ geometry, Piperidin-4-ones.$ 

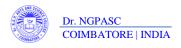
#### INTRODUCTION

To analyze the biological activity of a molecule is a risk task today. Every molecule possesses some hidden properties based upon their electronic interactions with neighboring atoms and their biological activities are based on these interactions. Molecular docking is such type of a technique gives a basic idea of binding potency of a ligand with different selective proteins in a 3D arrangement [1]. It is an attractive platform to prospect rational drug design and discovery [2]. Another important emerging technique is computational quantum mechanical modeling [3]. ab initio DFT calculations are the most important method to determine the behaviour of a molecule on the basis of quantum chemical considerations [4]. From these calculations, several bond parameters like bond angle, bond length, and torsion angle can be calculated and also able to explore the activities of the selected molecules. Once we got an idea about the molecule then there is no hesitation to explain the nature of binding aspects.

Advances in organic chemistry were generally measured by the availability of simple and highly functionalized building blocks. It could be used in synthesizing larger molecules with tuning properties and its applications. Piperidine ring system plays a wide role in innumerable natural compounds and drugs. This variety of compounds manifests countless pharmacological properties [5]. Generally, substituted 4-piperidones are the modules of a many alkaloids which holds broad-ranging of biological activity [6]. Piperidine-4-one compound has been attained much attention in recent years due to their biological activities and their molecular structures in various drugs [5]. Piperidones are a class of organic compounds consist of piperidine skeleton, that mimic the naturally occurring alkaloids and steroids which have been synthesized in order to study their biological activity and compare with naturally occurring compounds. It has been reported as antimicrobial, antiviral, analgesic, antioxidant and anticancer activities [6-10].

Previously, we reported the bond topological and electrostatic properties of piperidine-4-one compounds by using DFT

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| Ginseng Res xxx (xxxx) xxx



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Review Article

## Till 2018: a survey of biomolecule sequences in genus Panax

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#### ARTICLEINFO

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#### ABSTRACT

Ginseng is popularly known to be the king of ancient medicines and is used widely in most of the traditional medicinal compositions because of its various pharmaceutical properties. Numerous studies are being focused on this plant's remedial/curative effects to discover their potential health benefits in most human diseases, including cancer— the most life-threatening disease worldwide. Modern pharmacological research has focused mainly on ginsenosides, the major bioactive compounds of ginseng, because of their multiple therapeutic applications. Various issues on ginseng plant development, physiological processes, and agricultural issues have also been studied widely through state-of-the-art, high-throughput sequencing technologies. Since the beginning of the 21st century, the number of publications on ginseng has rapidly increased, with a recent count of more than 6,000 articles and reviews focusing notably on ginseng. Owing to the implementation of various technologies and continuous efforts, the ginseng plant genomes have been decoded effectively in recent years. Therefore/consequently, this review focuses mainly on the cellular biomolecular sequences in ginseng plants from the perspective of the central molecular dogma, with an emphasis on genomes, transcriptomes, and pro-teomes, together with a few other related studies.

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#### 1. Introduction

Decoding the genetics of medicinal plants is significant in understanding their phytochemical constituents with the trace of known/characterized enzymes in their genome, and the knowledge acquired from each plant is greatly benefiting the pharmaceutical industries in standardizing the development of natural drugs. So far, the knowledge obtained from the history of traditional medicine has taught the importance of medicinal plants and how they are useful in protecting the health of humans from various disorders [1]. Additionally, the current science is continuously acknowledging the benefits of those derived knowledge and impelling the researchers/scientists toward evidence-based science from a pseudoscience through empirical search. By these prominently emerging empirical searches, the term "phytochemical genomics" has originated, a discipline that systematically integrates multiple "omics" studies including genomics, transcriptomics, proteomics, and metabolomics [2,3]. This systematic integration

helps researchers to discern the biosynthesis mechanisms of plantspecific phytochemicals. For example, the "gene-to-metabolite" concepts have been successfully applied in Arabidopsis thaliana to characterize its flavonoids and also in other plants to characterize their secondary metabolites [4,5]. This field of study is becoming extensively acceptable as a proof-of-concept to annotate the array of novel phytochemicals and their biosynthesis mechanisms through derived and multitested hypotheses [5]. The "gene-tometabolite" concept is more familiar among model plants, as they consist of enormous data sets in comparison to nonmodel plants, such as crops and medicinal plants. To produce similar data structure in nonmodel plants, a theoretical framework that was used to generate a testable hypothesis in model plants was implemented in nonmodel plants using high-throughput technologies—namely, next-generation sequencing technologies and LC/GC-MS/MSbased metabolomics. Advantageously, those high-throughput sequencing technologies are made more accessible to the general plant communities with an affordable cost for implementing the

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#### Journal Pre-proof

# Structural, morphological and magnetic properties of Algae/CoFe $_2$ O $_4$ and Algae/Ag-Fe-O nanocomposites and their biomedical applications

$$\label{eq:market} \begin{split} \text{M. K. Satheeshkumar}^a, \text{E. Ranjith Kumar}^{b*}, \text{P. Indhumathi}^c, \text{Ch. Srinivas}^{d*}, \text{M.} \\ \text{Deepty}^d, & \text{S. Sathiyaraj}^c, \text{N. Suriyanarayanan}^{f*}, \text{D. L. Sastry}^{g*} \end{split}$$

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#### Abstract

Algae-assisted auto-combustion method was adopted to prepare Algae/CoFe $_2$ O $_4$  and Algae/Ag-Fe-O nanoparticles (NPs). Structural properties of the samples were investigated using XRD (X-ray Diffraction) FTIR (Fourier Transform Infra-red Spectroscopy), SEM (Scanning Electron Microscopy), and EDX (Energy Dispersive X-ray Analysis) and magnetic properties using VSM (Vibrating Sample Magnetometer). EDX spectra revealed the presence of expected stoichiometry in Algae/CoFe $_2$ O $_4$  system but not in Algae/Ag-Fe-O. XRD patterns indicate the cubic phases of nanoparticles en-capsulated in the algae matrix. The sizes of the particles are found to be in the range of 15-21 nm. The room-temperature magnetic behaviour of the composites depends on the nature of dopant as Algae/CoFe $_2$ O $_4$ NPs show ferromagnetic nature with significant coercivity whereas Algae/Ag-Fe-O NPs are super-paramagnetic. In-vitro anti-proliferative effect of Co-NPs and Ag-NPs at different concentrations (10, 25, 50, 75, 100µg/ml) was evaluated against IMR 32 cell-line after 24h incubation. The result of MTT assay affirmed that the cell-line deteriorates showing higher toxicity caused by Ag-NPs as compared to the results observed with the Co-NPs.

Key words: Nanoparticles; Structural analysis; FE-SEM; Biomedical applications

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## ARTICLE IN PRESS

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## Hydrothermal synthesis of ZnO-CdS nanocomposites: Structural, optical and electrical behavior

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#### ARTICLE INFO

Keywords: ZnO-CdS nanocomposites Band gap Flake-like morphology Dielectric properties

#### ABSTRACT

ZnO-CdS nanocomposites with three different molar ratios of 25:75, 50:50 and 75:25 were synthesized by simple hydrothermal technique. Powder X-ray diffraction patterns confirmed the phase formation of ZnO and CdS in ZnO-CdS nanocomposites. The calculated crystallite size was found in the range of 33-38 nm and 15-21 nm for ZnO and CdS respectively. HRSEM images revealed flake-like morphology for all samples. Energy dispersive X-ray spectra confirmed the presence of all the elements. The estimated optical bandgap was found in the range of 3.71–3.35 eV. IR spectra confirmed the formation of stretching vibration in ZnO and CdS. Dielectric analysis was performed in order to study Ac conductivity, dielectric constant and dielectric loss. Photoconductivity studies revealed that ZnO-CdS nanocomposites material exhibited sound photo-response characteristics.

#### 1. Introduction

Inorganic composite materials at nano scale region exhibit unique electrical and optical properties which make them suitable for versatile applications [1-7]. Zinc oxide is a well-known wide band gap semiconductor (II-VI) compound and it exhibits high exciton binding energy (60 meV) at ambient temperature. Taking aid of such attractive behavior zinc oxide is widely used to fabricate electronics devices such as photonic and optical modulators, waveguides, phosphor material in Cathode Ray Tube (CRT) screens and ultra-violet laser diodes [8-15].

In particular, quantum confinement effects and surface to volume ratio of nano-sized ZnO modify the photosensitive, magnetic and electronic properties compared to the properties of their bulk counterparts. Cadmium sulphide with wide band gap (~2.42 eV) is also a known semiconductor (II-VI) compound and exhibits 28 MeV of exciton binding energy [16]. This notable property of CdS used in different applications like photoresistors, solar cells, X-ray detectors and optoelectronic devices [17-23]. Further the materials such as CdO, CdS, ZnS and ZnO at nano scale region are successfully utilized in applications such as nanolasers, transistors and light emitting diodes (LED's) [17,18,21-24].

It is found that the performance of ZnO-CdS nanocomposite is enhanced due to the combination of cadmium sulphide and zinc oxide [25]. ZnO nanowires [26,27] and CdS nanoribbons [28,29] were investigated for their photoconductivity properties and it is found that these nanomaterials possess higher photoresponse with strong polarization dependence [30-32]. Photoconductivity is a well-known tool to obtain detail information about the nature of the photo-excitations. The photoconductive behavior of the inorganic nanomaterials has been investigated successfully in the last decade [33]. Recently, ZnO nanoparticles enhanced with ultrathin coatings of other metal oxides to develop new electrode for getting electrons in photovoltaic devices [34]. In addition, it revealed that the physical behavior of ZnO could be adequately altered by surface modification with certain biological, inorganic and organic materials leading to a pronounced improvement in photoelectronic, mechanical and electronic behavior. The techniques viz. co-precipitation [35], sprav pyrolysis [36], sol-gel [37], chemical vapor deposition [38] and hydrothermal route [39] are widely employed to synthesize ZnO and CdS nanoparticles. Among these, the hydrothermal method was chosen owing to some advantage like ease of synthesis and low cost when compared with other synthesis route.

In this paper, ZnO-CdS nanocomposites with three different molar

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# 1. Research- Proceeding Collaborations – Academic Year (2019-20)

Recent Innovations in Science and Technology (RIST- 2018)

# EVALUATION OF CHITOSAN DERIVATIVES FOR THE DELIVERY OF SALICYLIC ACID Sathya Priya\*, S.Sheeba Joy Bellb, R.Menaka\*, S.Subhashini\*

Research Scholar, Department of Chemistry, Avinashilingam Institute for Home Science and Higher Education for Research School of Chemistry, Avingability, Dr. N.G.P arts and science college, Coimbatore, India Women. Assume of Chemistry, Or. N.G.P arts and science college, Coimbatore, India professor, Department of Chemistry, Avinashilingam Institute for Home Science and Higher Education for Women.

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TRACI
Chitosan (CS), a versatile biopolymer was chemically modified with Maleic anhydride to obtain water soluble N-Chitosan (NMC). The obtained water soluble derivative was further blended with Polyvinyl Alcohol in 1:1 ratio Maleyl Chitosan (Chitosan Victoria) and a soluble derivative was further blended with Polyvinyl Alcohol in 1:1 ratio to get PVA composite of NMC. Derivatives of chitosan were characterized using UV-Visible spectroscopy (UV). fourier transform resonance spectroscopy (FT-IR) and TGA. The drug releasing behaviour of the chitosan derivatives was tested using salicylic acid as a model drug. Drug was loaded into the composite by solvent evaporation technique.

Drug entrapment efficiency of CS, NMC and NMC-PVA are found to be 88%, 86% and 96% respectively. Effect of Drug chitage.

Drug c was followed for the drug release.

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KEY WORDS: Chitosan, Maleic Anhydride, Polyvinyl Alcohol, FTIR, Salicylic acid.

Polymers are playing important role in pharmaceuticals. They are used as binders in tablet, increases solubility of poorly soluble drugs, used as film coatings on drugs to disguise their taste and enhances their stability etc. (Mohammadet al, 2012). Biodegradable polymers that are mostly used in drug delivery systems because of its nontoxic and biocompatible nature (Janaet al, 2011). Among the natural polymers Chitosan (CS) has received major attention mainly due to their biodegradable, biocompatible, non-toxic, mucoadhesiveness, antimicrobial, antioxidant, low immunogenicity etc. which enhance its potential in different biomedical applications (Jing et al, 2014). Chitosan is a cationic linear copolymer polysaccharide made up of random distribution of  $\beta$  (1 $\rightarrow$ 4) linked 2- amino- 2- deoxy- D-

a cationic linear copolymer polysaccharide made up of random distribution of β (1→4) linked 2- amino- 2- deoxy- D-glucose (D-glucosamine) and 2- acetamido- 2- deoxy- D- glucose (N- acetyl- D- glucosamine) units.

Maleic acid (MA) is commonly used in the pharmaceutical industries as a drug intermediate to form the maleate salts of several categories of therapeutic agents (Abuet al, 2015). Use of even small quantities of diprotic acid proved to impart remarkable properties to the hydrogels of starting monomers and/or homo polymers (Tasdelenet al, 2004). Poly (vinyl Alcohol), PVA is a non-toxic, water-soluble synthetic polymer and has good physical and chemical properties and film-forming ability. The use of this polymer is important in many applications such as controlled decompositions. properties and film-forming ability. The use of this polymer is important in many applications such as controlled drug

The aim of the present study is to modify Chitosan with Maleic acid to obtain water soluble N-maleyl Chitosan delivery systems (Sumanet al, 2012). (NMC), and blending with Polyvinyl Alcohol, and to analyse the drug loading capacity and release behaviour of those polymers using Salicylic Acid as a model drug at various pH

# MATERIALS AND METHODS

Materials

Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Maleic Chitosan with 75% of degree of deacetylation, Poly vinyl alcohol (molecular weight 1, 40,000) and Dimethyl Formamide (DMF) were used for the synthesis was Hydrogen Phosphate, Dimethyl Sulphoxide (DMSO) and Dimethyl Formamide (DMF) were used for the synthesis was Hydrogen Phosphate, Dimethyl Sulphoxide (DMSO) and Dimethyl Formamide (DMF) were used for the synthesis was the poly of the synthesis was the synthes

Preparation of CS-MA-PVA

Preparation of N-Maleyl Chitosan: Chitosan (1g) was dissolved in 100ml of 1% acetic acid. The solution was Preparation of N-Maleyl Chitosan: Chitosan stirring. Maleic anhydride (2.4g) was dissolved in 5ml of ethanol and allowed to stand for half an hour with constant stirring (Schemel). The mixture was allowed to stand for 15 added drop wise to the Chitosan solution with constant stirring (Schemel). The product was air dried hours at room temperature. The product was precipitated and washed with acetone. The product was air dried





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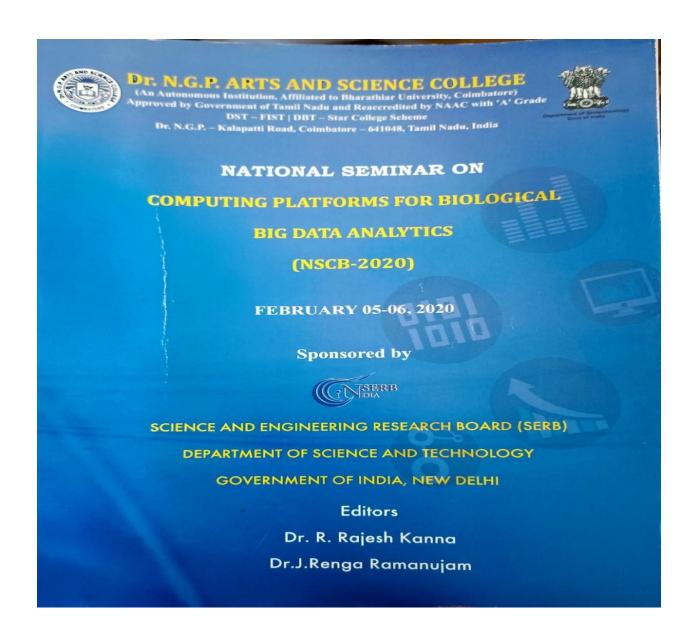
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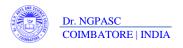
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New strategies for Enhancing English Academic Writing Skill among Rural Learners

## EXPERIENCING ACADEMIC TENOR IN WRITING AMONG RURAL LEARNERS: SUPPOSITIONS AND PRACTICES

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#### Abstract:

Academic writing suffers decisive drawback among Indian learners. Teaching academic writing needs regular efforts, continual interventions and constant feedback. Teachers, rather teaching academic writing, must allow learners to experience. Teaching academic writing is not a product but process. Academic writing is a progressive and prospective way of expression where learners' ideas are clearly and meticulously expressed so that national and international learning community could understand. Academic writing is to absorb the ideas and express the same in standard register. There are kinds of academic writing and so learners' awareness on academic writing must be practiced in real time experience. Any academic writers should actualize the ideas of the mind through following steps: planning, drawing an outline, absorbing the tone, choosing language style, point-of-view and approach to be inducted. It has a proper introduction, body of work and conclusion. Besides, academic writing is characterized by evidence-based arguments, precise word choice, logical organization, and an impersonal tone. So with all these presuppositions, learners are inducted with experiential learning where they actually experience the modules of academic writing where they are facilitated with constant feedback. Hence, how academic writing could be enhanced with experiential learning is the main focus of research paper.

KEYWORDS: academic writing analysis practice internation.

KEYWORDS: academic writing, analysis, practice, intervention, awareness.

Language is an extraordinary gift of God to man. Language only makes the man fully human, Man, in the words of Aristotle, is a rational animal. Man has attained this rationality because he has the ability to reason, and this reasoning capacity depends on the bountiful benefit of the language. Language is a resort to man's aesthetic senses as he recites beautiful poems which engages his fellow humans in their leisure time and of course, academically also it is utilized. Spread of religions and religious harmony depends entirely on the language as all scriptures are put in language only.

Students of English as a second language are besieged with the skill of writing for academic purposes. Our students even studying English for 14 years at the time of getting their degree might not have been in speaking situations. But they cannot get a degree without in writing situation. Can we rightly argue with thumping hope that our graduates are good in writing, having this particular experience academically for around 14 years? Definitely not. The reason is that the questions in the university examinations are mostly not open-ended. Students may memorize most of the answers and even get first class. And, yet, they may not know what is coherence and cohesion in writing.

Reading and Writing skills are the fundamental skills for learning any language whereas rural students have only limited exposure to learn English. So, proficiency in writing in English as a second language is required.

The following activities may help students to get better on writing skills:

- Writing daily events
- Writing Day today experience

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# New strategies for Enhancing English Academic Writing Skill among Rural Learners

New because learning a second language is different from that of a native language. activities, Krishnanaswamy et al comment:

In the case of adult learning a second language it has to be noted that the learner has passed In the case of acquiring language naturally, and is exposed to negative evidence in the less critical period for acquiring language naturally, and is exposed to negative evidence in the less community process from the first language acquisition (as the second language in the less community process from the first language acquisition (as the second language in the less community). critical period for consideration of those factors might lead to the view that the second language acquisition (96). classroom. Consider the view to classroom the first language acquisition (96). is a very different process from the first language acquisition (96).

y different progressing different pave a way to get a steady progress in this paper the author discussed and analyzed the factors are steady progress in The language of the author discussed and analyzed the factors regarding the second acquisition theories, and how those can be used to develop writing skills. learning. Hearning learning le language acquisition difference and the second language requires a lot methods, approaches, techniques, materials, and environment. In view of this Cathy and Julia remark: Teaching English and environment. In view of this Cathy and Julia remark:

English is a vibrant and wide-ranging subject. Its scope and range have evolved over time English is a violent the aspects of language and literacy that children need to develop.

Figure as language itself evolves to reflect social, cultural and technological to the social lo reflect changing benefit evolves to reflect social, cultural and technological development

Thus the present paper attempts to create a way to use linguistics concepts and language Thus the property of L2 phenomenon at rural region.

- Works Cherry

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# New strategies for Enhancing English Academic Writing Skill among Rural Learners

New strategies for Emiliances, between the different language structures: phonological, syntactic and conceptual, establishing their

ionship:
...language as a whole can be thought of as a mapping between sounds and Meanings;
...language as a whole can be thought of as a mapping between sounds and Meanings; ...language as a whole can be thought of as a modern of sounds, and conceptual structure is the specifically linguistic encoding of sounds, and conceptual structure is phono logical structure is the specifically linguistic encoding of sounds, and conceptual structure is phono logical structure is the specifically iniguistic the encoding of meaning. Syntactic structure serves as a way-station between these two structures, the encoding of meaning. Syntactic structure serves and precise (Jackend 126). making the mappings between them more articulate and precise (Jackend 126).

As it can be seen, the phonological and the conceptual components of a language are closely As it can be seen, the phonological and the seen as well as for the acquisition of conceptual interrelated and this holds for the language as a whole as well as for the acquisition of conceptual words. So the capacity to associate sounds, graphic representations, images and words is a key human faculty, basic for the development of language and thought. With the assistance of learning strategies, faculty, basic for the development of language and mental images of words are involved, as well as in which sounds, graphic representations, and mental images of words are involved, as well as syntactic rules, adult learners build mental principles to help them acquire new vocabulary.

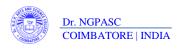
The study of human language is a complex process and it embraces many fields of study such as Linguistics, Psychology and Sociology. Linguistics is defined as the scientific study of language and the field is so developed that there are several sub fields involving various other fields of knowledge; for example, Neuro-linguistics involves neurology; Educational linguistics involves education and linguistics and so on. Linguistics involves the observation of language data, the formulation of hypotheses and the confirmation or rejection of them through experiments. Each branch of linguistics selects its data based on its aims or goals and contributes to one or the other aspects of ELT; for example, Structural Linguistics, the goal of which is to describe the structure of the verbal utterances of human beings contributes more to the issues of materials production in ELT and the discovery procedure used in Structural Linguistics teaches the teachers of English analysis of classroom language.

Language acquisition has a strong cognitive base and we might reasonably expect there to be widely different language abilities at any one age level. Moreover these differences may be quantitative, as in size of vocabulary or length and complexity of sentence, or qualitative, as in the different kinds of word and structure used. "In teaching and learning we may well bear in mind that...no teacher can escape the necessity of trying to understand and engage the intellectual powers of his pupils" (Hazel Francis 37). Second language acquisition is a very broad and rich area that covers many sub-topics, including the different approaches to SLA, interlanguage studies, L2 learning and individual differences in acquisition.

Teaching of writing skills depends on the three various sub skills such as; vocabulary, grammar and structure. "Learning a new language is basically a matter of learning the vocabulary of that language" (Inbaraj et al 156). All the existing approaches mainly focus on vocabulary, because it is mandatory and very basic to learn a number of words in second or foreign language, so that a leaner can use them appropriately in his written or spoken communication. Producing words in the target language makes greater demands on the learner. When these three skills are used in a single unit, it becomes a correct discourse (sentence). Written communication stands for ever, so it has to be a proper. Cathy, Julia aptly say: "Written language has an enduring quality, surviving after it has been produced" (68)

Krishnaswamy remarks: "The study of words is as important as the study of sentence because sentences are made up of words. The study of words not only helps us recognize the parts of speech (ie. the grammatical class of word)..." (365). In learning of English as a second language, the learners ought to be proper, they need to follow the teacher's advice, be careful on the language development

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# New strategies for Enhancing English Academic Writing Skill among Rural Learners

to the listeners at the time of speaking, whereas the writer leaves his mistakes on record for ever where all others can peruse and the writer's ignorance will be revealed to many.

Linguistic theories have often generally assumed that language is learned separately from cognitive skills and operates according to the principles that differ from the most learned behaviors. This assumption is represented in the analyses of unique language properties such as developmental language order, grammar, knowledge of language structures, social and contextual influences on language use, and the distinction between language acquisition and language learning.

Cognitive theories try to get inside the mind of the child and to propose the types of mental structures and thinking processes that may be taking place. They argue that the child cannot move on the learning a new language skill until he or she is intellectually ready for the next stage. This theory has to have a certain psychological capacity or cognitive ability before s/he can learn particular aspects of using language in order to make themselves understood. Piaget views language acquisition within the context of the child's broader intellectual development. Piaget (1972) stressed the language cannot be as straight forward as being solely reliant on a developing intellect – if it were, then the sixteen-year-old should learn the new language more easily.

As it can be seen, opposite to Innatism, which focuses on the first language acquisition, Cognitivism, by its own nature, also aims its efforts at explaining the second language acquisition (these theorists called it "acquisition", but nowadays in this area of L2 the term "learning" is more appropriate). A cognitive theory sees the second language learning as a conscious and reasoned thinking process, involving the deliberate use of learning strategies. Learning strategies are special ways of processing information that enhance comprehension, learning or retention of information. This explanation of language learning strongly contrasts with the behaviorist account of language learning, which sees language learning as an unconscious, automatic process.

Knowing a language involves more than knowing what form it takes: it involves knowing how it functions too. According to Widdowson (18) referring to adults: "What is distinctive about it (linguistics) is that it uses the abstracting potential of language to categorize and explain language itself". Language may be considered from different though complementary points of view: the study of language itself and the human ability to acquire it and to use it in concrete situations. Both aspects should be borne in mind by L2 teachers if they are to help learners in their process of acquiring new languages. The traditional distinction between linguistic competence and performance, i.e. between the speakers, or hearers, knowledge of a language and their ability to use it in concrete situations, is a highly cognitive ability.

On the other hand, the essence of cognition appears to rely on mechanisms of memory. Now we know that our memory is based on neural connections of the hippocampus area of the brain, though the localization of various forms of memory is under research. Much of the neuroscience of language has been concerned with how memory can be dependent on context; that is, how an area of knowledge may be activated and become working memory at a given point in time. Caramazza and Miozzo stated that the way words stored in long-term memory is activated in the course of sentence perception and production is another area of concern still under study.

The link between the linguistic sign and its meaning is a matter of convention. Learning a language involves making links or associations between a particular linguistic sign and its meaning in a particular language; i.e. linking the particular graphic representation of a word and its sound in a given language (dog, chien, perro) with its meaning. Jackend (2002) highlights the interconnections







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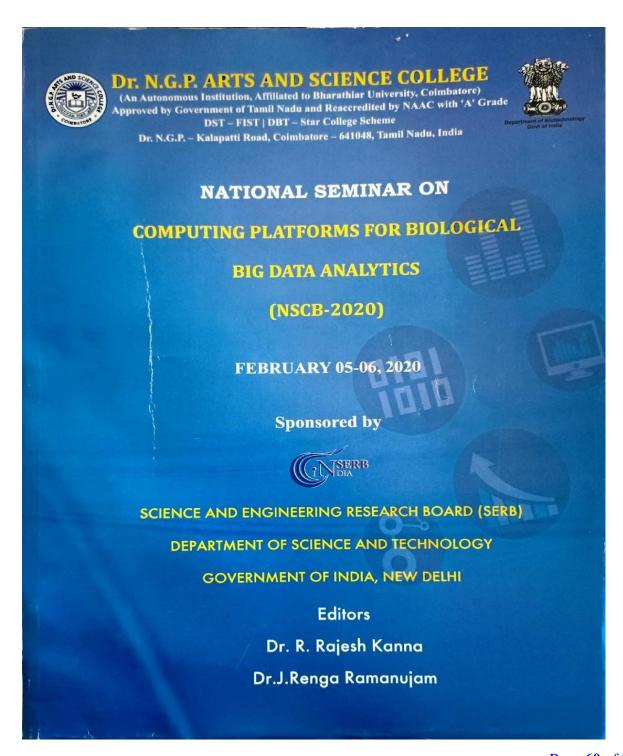
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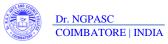
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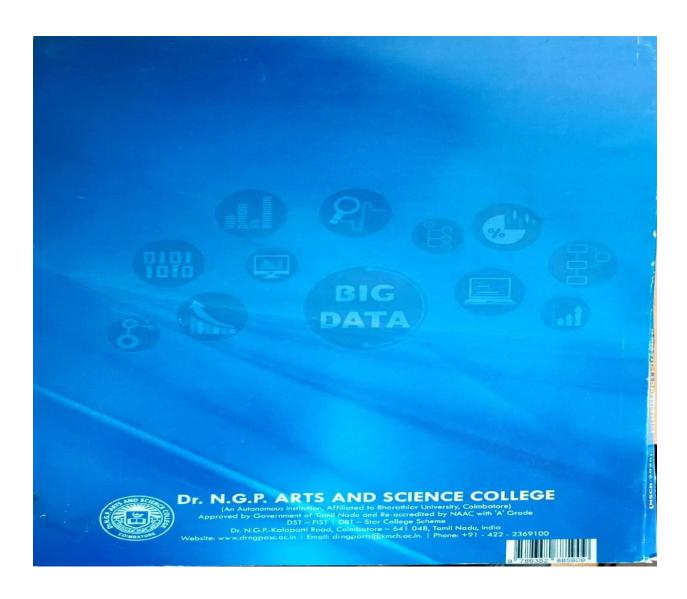
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# RETINA MATCH BASED ON IMPROVED SUPPORT $V_{E_G}$ MACHINE (ISVM) USING FUZZY CLUSTERING

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#### ABSTRACT:

Nowadays, the development of automatic retinal diseases diagnosis systems based on image processing has shown their potential for clinical practice. However, the accuracy of these systems is often compromised, mainly due to the intrinsic difficulty in detecting the abnormal structures and also due to deficiencies in the image acquisition which affects image quality. Further, with noise being present in the images, retinal matching is difficult to be analyzed. In this work new image denoising is performed based on the clustering algorithm. The proposed fuzzy clustering algorithm finds the similarity between the retina noisy and pixels. From this noises un-noisy presented in the samples are removed by using the fuzzy clustering. If the noises are removed from the samples then initializes dimension reduction Mutual Information (MI) optimization as a coarse localization process, which narrows the optimization domain and avoids local optima. In addition, proposed work nearest template of the retina image is performed by using the Improved Support Vector Machine (ISVM) method has been used with areabased registration, providing a robust approach. To the best of knowledge, this is the first template matching algorithm for retina images with small template images from unconstrained retinal areas.

Keywords: Retina image template matching, Noise removal, Fuzzy clustering, Improved Support Vector Machine, teleophthalmology, dimension reduction, mutual information, healthmonitoring

#### 1. 2. INTRODUCTION

Teleophthalmology is gaining in as an effective eye care delivery worldwide. In many developing teleophthalmology is being un provide quality eye care to the und urban population and the unserved population. Over the rural technological innovations have evidence improvement in teleophthalmology has evolved tool to a clinica research Teleophthalmology produces the desired clinical outcome as the train system. Remote portals allow specprovide care over a larger region improving health outcomes and inc accessibility of specialty care to population. A high satisfaction les acceptance is reported in the majorn studies because of increased acces and reduced traveling cost and Considering the improved quality of care and patient satisfaction report these telemedicine services, this explores how teleophthalmology her improve patient outcomes. Teleophthalmology provides an easy effective way to diagnose many diseases and ultimately to preserve an evesight. In retina, there has been a toward teleophthalmology, particular diabetic retinopathy and retinopat prematurity (ROP) screenings, espec areas where retinal specialists are not available. In this part, the challenging of retinal image matching and registrat to addressed been applications.In teleophthalmology proposed a new method for localizing disc in retinal images. Localizing the disc and its center is the first step of vessel segmentation, disease diagnos retinal recognition algorithms. In [2]rev the current evidence on the critical fe and characteristics of ocular tele programs for DR in the following cates image gradability, mydriasis, sensitivi



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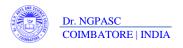
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sufficient water if the necessary conditions are not satisfied. The solution preferred is to maintain the stable growth of the crops that directly increases the yield.

# IMAGE DENOISING USING IMPROVED SUPPORT VECTOR MACHINE (ISVM) – A CLUSTERING METHOD

(ISVM) — A CLUSTERING METHOD

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#### ABSTRACT:

Nowadays, the development of automatic retinal diseases diagnosis systems based on image processing has shown their potential for clinical practice. However, the accuracy of these systems is often compromised, mainly due to the intrinsic difficulty in detecting the abnormal structures and also due to deficiencies in the image acquisition which affects image quality. Further, with noise being present in the images, retinal matching is difficult to be analyzed. In this work new image denoising is performed based on the clustering algorithm. The proposed fuzzy clustering algorithm finds the similarity between the retina noisy and un-noisy pixels. From this noises presented in the samples are removed by using the fuzzy clustering. If the noises are removed from the samples then dimension reduction initializes the Mutual Information (MI) optimization as a coarse localization process, which narrows the optimization domain and avoids local optima. In addition, proposed work nearest template of the retina image is performed by using the Improved Support Vector Machine (ISVM) method has been used with area-based registration, providing a robust approach. To the best of knowledge, this is the first template matching algorithm for retina images with small template images from unconstrained retinal areas.

#### STUDY ON MACHINE LEARNING

Associate Professor, Department of Computer Science, M. Kayalvizhi, D. Ranjani, UG Student, Department of Computer Science, Sri Ramakrishna College Of Arts and Science for Women, Coimbatore. khanchanacs@srcw.ac.in, m.kayalmuna@gmail.com.ranjanid1527@gmail.com

#### ABSTRACT-

Nowadays, large amount of data is available everywhere. This can be achieved through data mining and machine learning. Machine learning is an integral part of artificial intelligence, which is used to design algorithm based on the data trends and historical relationships between data. The objective of this briefing is to present an overview of the machine learning techniques currently in use or in consideration at statistical agencies worldwide. Machine learning is the scientific study of algorithm and statistical models that computer system use to perform specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of Artificial Intelligence.

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#### SCHEDULING ALGORITHM WITH PARTICLE SWARM OPTIMIZATION (PSO) IN CLOUD COMPUTING SYSTEMS

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This article investigates in cloud computing systems about problem of delay optimal Virtual Machine (VM) scheduling holds constant resources with full infrastructure like CPU, memory and storage in the resource pool. Cloud computing offers users with VMs as utilities. Cloud consumers randomly demand different VM types over Cloud computing offers users with VMs as utilities. Cloud consumers randomly demand different VM types over time, and the usual length of the VM hosting differs greatly. A scheduling algorithm for a multi-level queue divides the prepared queue towards lengthy and various queues. System is allocated with single queue in to several longer queues. The systems are allocated to one queue indefinitely, usually on any basis of process property, like memory size, process priority, or process sort. Every queue will have its self-algorithm for scheduling. Likewise, a system that's taking in a less preference queue is so lengthy, a high-priority queue can be transferred. Using Particle Swarm Optimization Algorithm (MQPSO), Multi-level queue scheduling has been done. To evaluate the solutions, it explores both Shortest-Job-First (SJF) buffering and Min-Min Best Fit (MMBF) programming algorithms, i.e., SJF-MMBF. The scheme incorporating the SJF-ELM-specific scheduling algorithms depending SJF buffering and Extreme Learning Machine (ELM) is also being proposed to prevent work hunger in an SJF-MMBF system. Furthermore, the queues must be planned, which is usually used as a preventive fixed priority schedule. The results of the simulation show that the SJF-ELM is ideal inside strong duty as well as maximum is environment dynamically, with an efficient average employment hosting rate.

#### STUDY OF DATA MINING

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#### ABSTRACT:

The main reason of selecting Data mining is to inform the people of how data's are processed and how larger set of data's are solved using patterns. They were considered illegal at the early periods but nowadays they are considered a noble field since the usage of probability it become a suitable for AI's since they want it to make it realistic. They have been even used in the field of medical, farming and agriculture etc...wherever there is digital data there is presence of data mining process. The paper also describes what are the problems faced during the processing the data and it also describes the recent advancement in AI. There are some disadvantages since every technologies has their downfall as well as their peak.

#### A STUDY OF COMPLEXITY SECURITY ALGORITHM FOR WIRELESS SENSOR NETWORKS

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<sup>2</sup>Sri Krishna Arts and Science College, coimbatore Tamil Nadu, India
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#### ABSTRACT:

Wireless Sensor Networks are used for different sensitive applications in the vein of in military operations, health care and for surveillance in smart cities etc. Thus security in WSN is an important concern which provides

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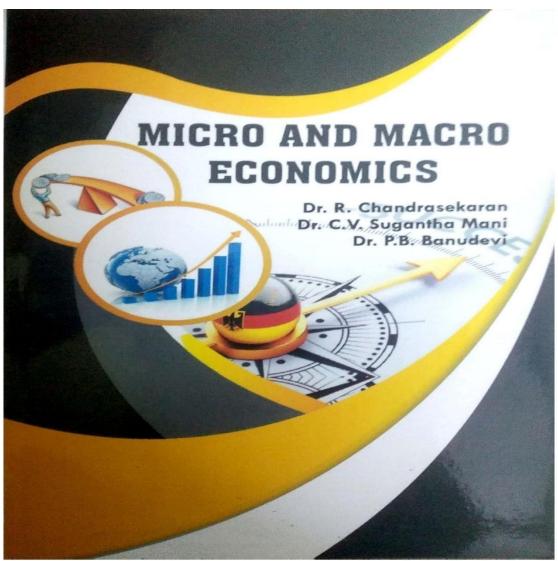
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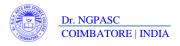
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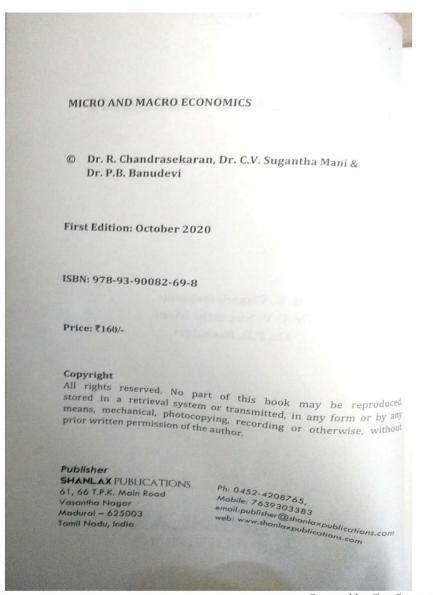
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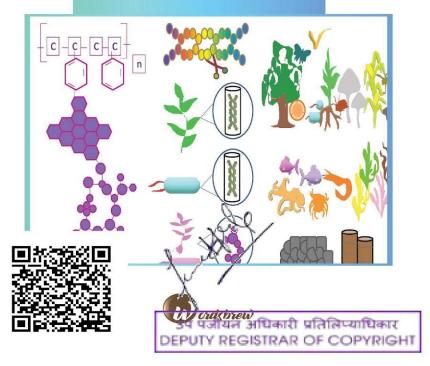
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# BIOPLASTICS

A simple guide to bioplastics

By Harsini Venkatachalam Dr. Radha Palaniswamy Dr. VL Mangesh







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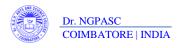


Radha Palaniswamy Nithya Devi S

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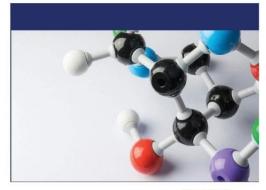
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The efficacy of N arbortristis as an anticancer agent for HeLa cell lines and L132 cell lines was studied. In the present study, it was revealed that the minimum effective concentration of ethyl acetale extract of N arbortristis was toxic to 50% HeLa cervical cancer cells was recorded ( $IC_{Q0}$ ) at a concentration  $AT_{QGM}$  were as 50% human embryonic pulmonary epithelial cells L132 was recorded ( $IC_{Q0}$ ) at a concentration  $S_{QGM}$  53%  $IC_{QGM}$  1. The phytoconstituents present in N arbortrists ethyl acetale extract are predicted to be responsible for anticancer activity. The results obtained in the study, it was revealed that the plant extracts possess increased anticancer nature against HeLa cell lines compared to L132. In future the N arbortrists can be considered to be an important pharmacophore.



Deepalakshmi J. Lakshmi R.

Mrs. J. Deepalakshmi, working as Assistance Professor in PG & Research Department of Biochemistry, Mohamed Sathak College of Arts and Science, Sholinganallur, Chennal, Mrs. Deepa has more than 15 years of teaching and research experience in life science fields. Her main research area is focused on phytochemical agents for cancer treatment purpose.

## In-vitro Cytotoxic Activity of Nyctanthes arbortristis Extracts

Cytotoxic Activity of Nyctanthes arbortristis Extracts in HeLa and L132 Cell Line









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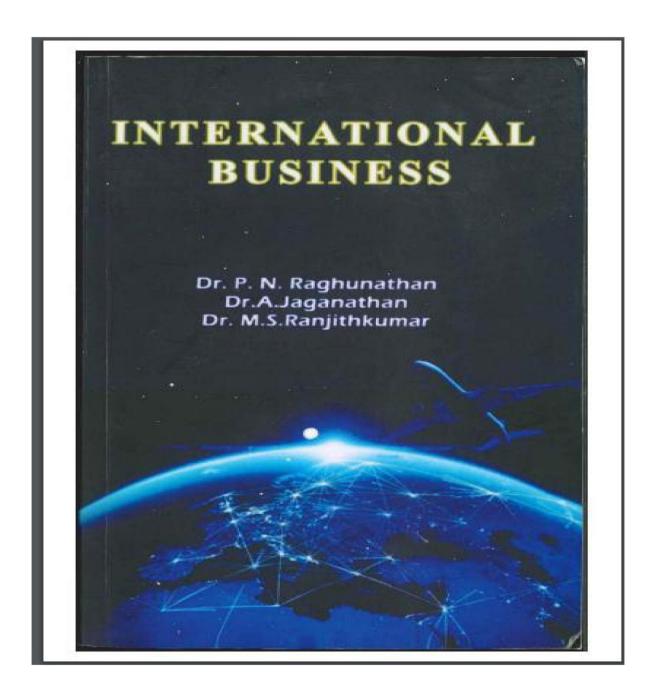
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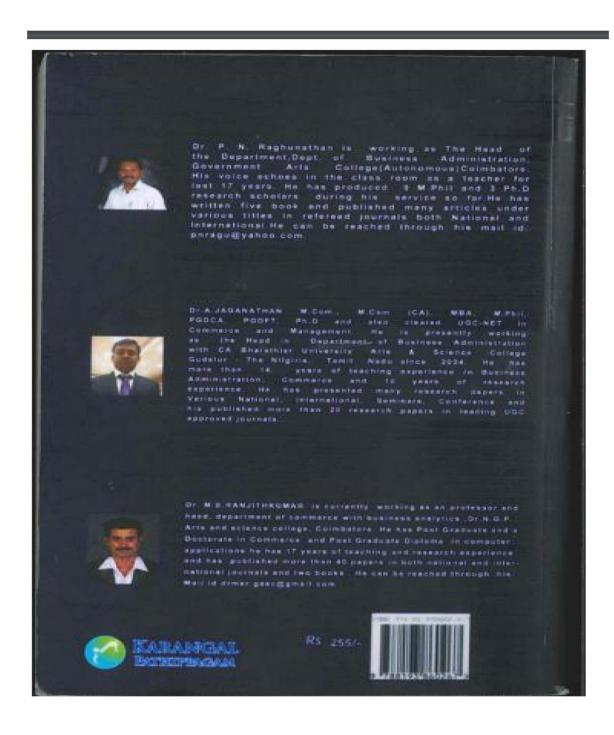
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# Interfacial Engineering in Functional Materials for Dye-Sensitized Solar Cells

Editor(s): Professor Alagarsamy Pandikumar, Professor Kandasamy Jothivenkatachalam, Professor Karuppanapillai Bhojanaa

First published: 8 November 2019

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#### Binary Semiconductor Metal Oxide as Photoanodes

S.S. Kanmani<sup>1</sup>, I. John Peter<sup>2</sup>, A. Muthu Kumar<sup>2</sup>, P. Nithiananthi<sup>2</sup>, C. Raja Mohan<sup>2</sup>, and K. Ramachandran<sup>2</sup>

<sup>1</sup> Dr. N.G.P. Arts and Science College, Coimbatore, Tamilnadu, India
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## Why Metal Oxide Semiconductors?

As both natural and synthetic metal oxide semiconductors (MOSs) have diverse applications and the properties of MOS can be tailored in many ways, viz., varied choice of morphologies, introducing oxygen vacancies, doping. In photovoltaics, MOSs serve as a scaffold layer for loading dyes in dye-sensitized solar cells (DSSCs) and organic-inorganic hybrid perovskites in perovskite solar cells (PSCs), as well as electron and hole transport layers in DSSCs and organic solar cells (OSCs). The function of scaffold in DSSCs is to facilitate charge separation and charge transport, whereas that of the transport layers is to conduct one type of charge carrier block to the other type. Therefore, tailoring their properties is inevitable to develop high-performing photovoltaic devices using them. On the other hand, the electrochemical properties of the MOS such as band edge energies determine their success as photocatalysts [1]

The wide-band-gap MOSs (e.g. > 3 eV) having suitable band position relative to dye (or photosensitizer) have been used for the fabrication of DSSCs. Owing to the wide band gap, the MOSs employed for the fabrication of DSSCs have absorption at the ultraviolet region. Therefore, photosensitizer/dye is responsible for the absorption of light at the visible and near-infrared region. Furthermore, the high surface area of nanoporous MOS increases dye loading; thereby enhancing light absorption leading to improved performance of DSSCs. In addition to the above-mentioned physical characteristics, low cost, natural abundance, and facile synthesis methods of MOS combined with facile solution processibility is another key advantage for the application in DSSCs. Binary MOSs such as TiO2, ZnO, Fe2O3 SnO2, ZrO2, Nb2O5, Al2O3, and CeO2 are the typical materials that have been well tested now for their use as photoelectrodes in DSSCs [2–8]. Among them  $TiO_2$ , ZnO, and  $Fe_2O_3$  are 3d transition metal oxides,  $ZrO_2$  and  $Nb_2O_5$  are 4d transition metal oxides,  $SnO_2$  and  $Al_2O_3$  are p-block metal oxides, and  $CeO_2$  is a following metal oxide. In  $TiO_2$ , the Tif-block metal oxide. In TiO2, the Ti ions are in a distorted octahedral environment and formally have a  $Ti^{4+}(3d_0)$  electronic configuration.

Ternary oxides and inorganic perovskites such as BaTiO3, SrTiO3, SrSnO3 and organicinorganic hybrid halide lead perovskites such as CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> (toxicity of lead is being seriously viewed these days) also are contributing to the development of efficient solar cells [9-13]. As the lifetime of free charges and open-circuit voltages in DSSC are determined by the flatband potential and trap states in the semiconductor oxide, core-shell nanostructured photoanodes were developed. Here comes the above binary metal oxides for such designs of core-shell structures

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8 Binary Semiconductor Metal Oxide as Photoanodes

### 8.2 Development of MOS-Based DSSC

There are lot of reports available in the literature for ZnO-TiO2 core-shell nanostructuresbased DSSCs to solve some of the shortcomings of the physical and chemical properties of these individual oxides, however, not much improvement has surfaced. Irrespective of their similar band-gap energies of 3.2 eV, their different electronic structures influence their interfacial energetics. It is established that electron transport times are about two orders of magnitude faster in ZnO than in TiO2. However, ZnO exhibits poor dye attachment caused by ZnO/TiO2/N719 dye aggregation and dissolution of  $I^-/I^-_3$  electrolyte, resulting in reduced electron injection rates and higher dark current than TiO2 photoanodes, in DSSC. Consequently, different ways are there to employ ZnO as a inner core with  $\mathrm{TiO}_2$  as a barrier layer to prevent ZnO dissolution and  $\rm ZnO/TiO_2/dye$  aggregation, i.e.  $\rm ZnO/TiO_2$  core–shell nanostructures have been proposed as photoanodes. Manthina et al. reported that ZnO nanorods with a good  ${\rm TiO_2}$  nanoparticle coverage had a faster electron transport and exhibited higher dye adsorption but provided low short circuit current density  $(I_{SC})$  due to the absence of an energy gradient [14]. Wang et al. also studied ZnO nanorods with 10 nm thickness over layer of TiO2. The prepared ZnO/TiO2 core—shell sintered at 450°C and achieved a current density  $(J_{SC})$  of 5.3 mA/cm<sup>2</sup>, an open-circuit voltage ( $V_{\rm OC}$ ) of 704 mV, and fill factor (FF) of 56% [15]. Kanmani and Ramachandran, reversibly employed TiO<sub>2</sub>/ZnO core–shell nanoparticles because of the faster electron mobility in ZnO than in TiO2 that could potentially enhance interfacial electron transfer. However, they achieved a low  $I_{SC}$  which might be due to the dissolution of ZnO or higher interfacial charge recombination [16]. Roh et al. have demonstrated power conversion efficiency (PCE) of 4.51% with a 30 nm ZnO layer on TiO2 DSSC photoanode. Employing ZnO/TiO2 core-shell nanostructures as photoanodes requires that the conduction band (CB) potential of the shell material (TiO2) be more negative than the core to successfully act as an energy barrier and thereby reduce recombination of transport electrons with oxidized dye and triiodide species in I<sup>-</sup>/I<sup>-</sup><sub>3</sub>liquid DSSC. More so, ZnO should be protected from dissolving in  $I^-/I^-_3$  electrolyte. The CB edge of bare  $TiO_2$  is shown to be slightly more positive than that of bare ZnO [17].

It is therefore highly desirable to design semiconductors with tunable band edge positions and band gap. In this contribution, we describe such band-gap engineering by means of the synthesis of nanoporous titanium–zirconium mixed oxides. As indicated in Figure 8.1, the band edge positions of  $\mathrm{Ti}_{1-x}\mathrm{Zr}_x\mathrm{O}_2$  are expected to change with the content of zirconium, x, between the positions of  $\mathrm{TiO}_2$  and  $\mathrm{ZrO}_2$ , similar to earlier observed band edge movement in mixed oxide systems. An increase of zirconium content should therefore allow for a higher CB edge and, in consequence, for a higher open-circuit voltage when used in DSSC. Indeed, very recently, it

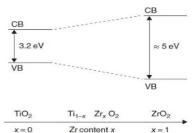


Figure 8.1 Schematics of the dependence of conduction band edge and valence band (VB) edge as a function of zirconium content.





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Mrs. N. Vanitha B.Sc., IT

Handbook of Research on

Machine and Deep
Learning Applications
for Cyber Security





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# Handbook of Research on Machine and Deep Learning Applications for Cyber Security

As the advancement of technology continues, cyber security continues to play a significant role in today's world. With society becoming more dependent on the internet, new opportunities for virtual attacks can lead to the exposure of critical information. Machine and deep learning techniques to prevent this exposure of information are being applied to address mounting concerns in computer security.

The Handbook of Research on Machine and Deep Learning Applications for Cyber Security is a pivotal reference source that provides vital research on the application of machine learning techniques for network security research. While highlighting topics such as web security, malware detection, and secure information sharing, this publication explores recent research findings in the area of electronic security as well as challenges and countermeasures in cyber security research. It is ideally designed for software engineers, IT specialists, cybersecurity analysts, industrial experts, academicians, researchers, and post-graduate students.

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## Chapter 11 Traffic Analysis of UAV Networks Using Enhanced Deep Feed Forward Neural Networks (EDFFNN)

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Padmavathi Ganapathi
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#### ABSTRACT

The world is moving to an autonomous era. Autonomous vehicles take a major role in day-to-day activity, helping human personnel do work quickly and independently. Unmanned aerial vehicles (UAVs) are autonomous vehicles controlled using senutes in ground station by human personnel. These UAVs act as a network that plays a vital role in the digital era. There are different architectures of UAV networks available. This chapter concentrates on centralized UAV network. Because of wireless and autonomy characteristics, these networks are prone to various security issues, so it's very important to monitor and analyze the traffic of the UAV network in order to identify the instrusions. This chapter proposes enhanced deep feed forward network (EDFFN) in order to monitor and analyze the traffic of the UAV network to detect the instrusions with nextinum detection rate of 94.4%. The results have been compared with the previous method of intrusion detection.

#### INTRODUCTION

Unmanned Aerial Vehicles (UAV) systems or drones plays a vital role in recent days, which can fly au-tonomously or it can be functioned remotely. Due to the high mobility of drones they have been widely used for a lot of applications like military, search and rescue operations, health care, delivery, monitor-ing etc. Ad-hoc networking between UAVs or drones (FANET-Flying Ad-hoc Networks) can solve the DOE 10.4018/978-1-5225-9611-0.cb011





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#### Traffic Analysis of UAV Networks Using Enhanced Deep Feed Forward Neural Networks

problems that arising from the infrastructure-based UAV network. Because of lot of applications the communication between UAVs are very important, so it is vital to have the communication architecture for creating a UAV networks. These Communication architectures prone to various cyber-attacks, it is mandatory to have an Intrusion detection systems (IDS) to detect the cyber- attacks on those architectures. IDS performances are essential in cyber security. This paper aims to introduce the Intrusion detection systems (IDS) for centralized Unmanned Arial Vehicle (UAV) assisted Vehicular ad-hoc network (VANET) architecture having U2V/V2U communication. This chapter concentrates on the Centralized UAV networks assisted VANET architecture. Network Intrusion Detection System (NIDS) shields a network from nasty software attacks. Traditionally, there are two forms of NIDS according to the strategies to detect network attacks. At first, signature-based detection, compares new data with a knowledge base of known intrusions. Regardless of the state of affairs that, this method cannot spot new attacks, this ruins the most widespread tactic in commercial intrusion detection systems. Latter, anomaly-based detection, compares new data with a model of standard user behavior and marks a significant deviation from this model as an anomaly using machine learning. As a result, this approach can detect anomaly-based attacks that have never been seen before. The anomaly-based detection approach is usually combined with flow-based traffic monitoring in NIDS. Flow based monitoring is based on the information which is existing in the packet headers, so flow-based NIDS have to handle a lower amount of data compared to a payload-based NIDS. This exertion builds a Deep Neural Network (DNN) model for an Intrusion detection system and train the model with simulated dataset. (Hichem Sedjelmaci, 2017)

#### Applications

UAVs or drones have a countless imminent to build abundant applications in military and civilian domains. Applications include,

#### Military

- Military men and women are protected by drone anytime; they will be armed with live video remote communications to ground troops, essential gear, or weapons.
   The main drone use overseas in war zones is reconnaissance of unknown areas/buildings, adver-
- The main drone use overseas in war zones is reconnaissance of unknown areas/buildings, adversary tracing, and force defense (making sure our crowds are safe and no one is approaching them).
- Drones are a very good searching tool for lost or injured soldiers as well as a real-time view of various situations and missions, allowing for commanders to make better decisions in resource allocations.

#### Civilian

Applications of Civilian contains, Healthcare, Filmmaking, Archaeology, Cargo transport, Conservation, Hobby and recreational use, Journalism, Law enforcement, Scientific research, Search and rescue and Surveillance.





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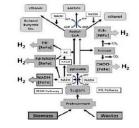
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Biomass, Biofuels, Biochemicals

# BIOHYDROGEN SECOND EDITION



**EDITORS** ASHOK PANDEY S. VENKATA MOHAN JO-SHU CHANG PATRICK C. HALLENBECK CHRISTIAN LARROCHE





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# **BIOHYDROGEN**

#### SECOND EDITION

Reviews biotechnology processes for producing biohydrogen to enable a sustainable future for the energy and transportation sectors

- · Depicts a holistic view of biohydrogen in a unified approach, making it a single point of reference
- Highlights new technologies and perspectives, giving up-to-date, state-of-the-art information on research and commercialization
- Provides strategic integrations of acidogenesis with various bioprocesses essential in establishing a circular biorefinery
- Includes updated and new scientific findings on subjects such as biotechnology, bioengineering, molecular biology, environmental science, and more

Biomass, Biofuels, Biochemicals: Biohydrogen, second edition, provides general information, basic data, and knowledge on one of the most promising renewable energy sources, including its production and applications. The book describes a green technology for abating environmental crises and enabling the transformation into a sustainable future. Researchers, students, and science enthusiasts alike will appreciate this holistic view of biohydrogen production, which details the functional mechanisms employed, operational configurations, influencing factors, and integration strategies. With 50% more content, this new edition outlines the scaling of processes and features material from experienced international researchers working at the interface of biotechnology and engineering.

Ashok Pandey, Distinguished Scientist, Center for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, Lucknow, India

S. Venkata Mohan, Scientist, CSIR-Indian Institute of Chemical Technology, Hyderabad, India

Jo-Shu Chang, University Chair Professor, Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan

Patrick C. Hallenbeck, Emeritus Professor, Department of Microbiology and Immunology, University of Montreal, Canada

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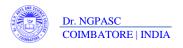
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## Metabolic Engineering and Molecular Biotechnology of Biohydrogen Production

S. Mohanvaj<sup>1</sup>, Ashok Pandey<sup>2</sup>, S. Venkata Mohan<sup>3, 6</sup>,
K. Anbalagan<sup>4</sup>, S. Kodhaiyolii<sup>3</sup>, V. Pugalenthi<sup>5</sup>

\*KMCH Research Foundation, Coimbatore, India; \*Centre for Innovation and Translational Research, CSIR-Indian Institute of Toxicology Research, Lucknow, India; \*Bioenginsering and Environmental Sciences Lab, CEEFF, CSIR-Indian Institute of Chemical Technology (CSIR-IKCT), Hyderahad, India; \*Department of Biothemistry, Dr. N.G.P. Arts and Science College, Coimbatore, India; \*Department of Biothemistry, Dr. Nach and Institute of Technology, Arma University, Tiruchiroppalli, India; \*Academy for Scientific and Industrial Research (AcSIR), Hyderahad, India

## 1. INTRODUCTION

The global energy supplies are deeply dependent on fossil hads, such as stil, coal, and natural gas, which generale an environmental issue because of CO<sub>2</sub> emission. Possil fuels not only impart a serious global warming problem but also cause depletion of fossil resources at a faster rate. The second generation biofusels, such as methans, hydrogen, and ethansil, play a vital role in solving the energy crisis. Among the various biofusel options, biohydrogen (9½) gas is a viable alternative fuel and becoming a nonpolluting ideal energy carrier in the future. It is safer and the mast important fact being that it is a carbim-free fuel, conditiong into water vapor and energy as a numbustion product. Thus Pt<sub>2</sub> is an ecosale renewable energy to replace fossil fasts [1,2]. Hydrogen can be obtained from naturally available resources, such as water, fossil hydrocarbons, hydrogen sulfide, and biomass. At present natural gas (40%), crude oil (30%), coal (18%), water electrolysis (4%), and (1%) biomass are main sources of the production of Pt<sub>2</sub> [1,2]. Hydrogen production from carbon sources by using microorganism is called as biological hydrogen production (500)ydrogen) and that processes can be operated at ambient tempor-

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ature and atmospheric pressure. The methods available for the biohydrogen production from

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# Biometric Authentication in Online Learning Environments

A.V. Senthil Kumar Hindusthan College of Arts and Science, India

A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series







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## Advances in Educational Technologies and Instructional Design (AETID) Book Series

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Education has undergone, and continues to undergo, immense changes in the way it is enacted and distributed to both child and adult learners. In modern education, the traditional classroom learning experience has evolved to include technological resources and to provide online classroom opportunities to students of all ages regardless of their geographical locations. From distance education, Massive-Open-Online-Courses (MOOCs), and electronic tablets in the classroom, technology is now an integral part of learning and is also affecting the way educators communicate information to students.

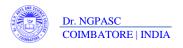
The Advances in Educational Technologies & Instructional Design (AETID) Book Series explores new research and theories for facilitating learning and improving educational performance utilizing technological processes and resources. The series examines technologies that can be integrated into K-12 classrooms to improve skills and learning abilities in all subjects including STEM education and language learning. Additionally, it studies the emergence of fully online classrooms for young and adult learners alike, and the communication and accountability challenges that can arise. Trending topics that are covered include adaptive learning, game-based learning, virtual school environments, and social media effects. School administrators, educators, academicians, researchers, and students will find this series to be an excellent resource for the effective design and implementation of learning technologies in their classes.

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- · Social Media Effects on Education
- Educational Telecommunications
   Virtual School Environments
- Bring-Your-Own-Device
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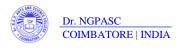
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#### Chapter 8

#### Keystroke Dynamics: A Behavioral Biometric Model for User Authentication in Online Exams

Senthil Kumar A. V. Hindusthan College of Arts and Science, India

Rathi M.
Dr. N. G. P. Arts and Science College, India

#### ABSTRACT

Online learning has entirely transformed the way of learning by the students. Online tests and quizzes play an important role in online learning, which provides accurate results to the instructor. But, the learners use different methods to cheat during online exams such as opening a browser to search for the answer or a document in the local drive, etc. They are not authenticated once they login and progress to attend the online exams. Different techniques are used in authenticating the students taking up the online exams such as audio or video surveillance systems, fingerprint, or its recognition, etc. Keystroke dynamics-based authentication (KDA) method, a behavioral biometric-based authentication model has gained focus in authenticating the users. This chapter proposes the usage of KDA as a solution to user authentication in online exams and presents a detailed review on the processes of KDA, the factors that affect the performance of KDA, their applications in different domains, and a few keystroke dynamics-based datasets to authenticate the users during online exams.

#### INTRODUCTION

Authentication is the process to ensure an individual's identity. This provides access control for systems by verifying the user's credentials with the credentials stored in a database. Only authenticated users are allowed to access the protected resources of the organizations which are called as authorization process. The terms authentication and authorization are often used interchangeably; Authentication confirms the identity of a registered user before permitting access to the protected resource, whereas authorization confirms that the authenticated user has the permission to access the requested resources or not. Security

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Ref. No. DRNGPASC/ADMIN/2019-20/108

27.2.2020

The Principal Vellalar College for Women Erode

Dear Madam,

Prof. Dr. V. RAJENDRAN

Sub: DRNGPASC-VCE Innovative teaching, Staff and Student exchange- Invitation-Reg.

Ref: MoU signed with your esteemed Institution on 03.02.2020.

Greetings from Dr. N.G.P. Arts and Science College, Coimbatore.

With reference to the MoU, we are pleased to inform you that under Innovative Teaching-Exchange of Staff category, we would like to invite your Staff members to share their valuable knowledge on the syllabus mentioned below during 3-5<sup>th</sup> March, 2020.

Department	Name of the Course	Unit to be Covered
Computer Science	Relational Database Management System	Unit V in the enclosed Syllabus
	Multimedia & Animation	Unit V in the enclosed Syllabus
Maths	Mechanics	Unit V in the enclosed Syllabus
Commerce	Management Accounting	Unit V in the enclosed Syllabus
Costume Design and Fashion Technology	Fabric Construction	Unit III in the enclosed Syllabus

We hereby inform you that the necessary arrangements for the boarding and Lodging of the Staff members from Vellalar College for Women will be made by us.

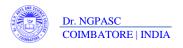
Thanking you,

Yours sincerely,

(Prof.Dr.V.Rajendran)
Principal

Administrative Office:

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Dr.N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-05/2020

Date: 29.02.2020

To The Principal Dr.N.G.P. Arts and Science College Coimbatore.

Sir,

 $Sub: MoU-Innovative\ Teaching-Exchange\ of\ Staff-reg.$ 

Ref.: Your e-mail dt.28.02.2020

Warm Greetings!

With reference to your e-mail communication, as a part of MoU - Innovative Teaching - Exchange of Staff, we are pleased to send Dr.P.K.Saranya, Assistant Professor, Department of Computer Science and Ms.K.Kiruthika, Assistant Professor, Department of CT & IT of our college to share their knowledge with the students of Department of Computer Science of your esteemed institution from 3<sup>rd</sup> March to 5<sup>th</sup> March, 2020.

ERODE-1

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Dr.N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-06/2020

Date: 03.03.2020

To
The Principal
Dr.N.G.P. Arts and Science College
Coimbatore.

Sir,

Sub: MoU - Innovative Teaching - Exchange of Staff - reg.

Ref.: Your e-mail dt.28.02.2020

Warm Greetings!

With reference to your e-mail communication, as a part of MoU – Innovative Teaching – Exchange of Staff, we are pleased to send Ms.S.N.Subhathra, Assistant Professor, Department of Mathematics (CA) of our college to share her knowledge with the students of Department of Mathematics of your esteemed institution on 4<sup>th</sup> and 6<sup>th</sup> March, 2020.



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## Prof. Dr. V. RAJENDRAN

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DRNGPASC/ADMIN/2019-20/118

March 3, 2020

The Principal Vellalar College for Women (Autonomous) Thindal Erode – 638 012

Dear Madam

Sub: MoU - Staff Exchange Programme - Reg.

With reference to the above subject, we would like to bring to your kind notice that under the MoU between Dr.N.G.P.Arts and Science College and Vellalar College for Women, - Staff exchange category, our staff member each from the department of Commerce, Computer Science, Mathematics and Costume Design & Fashion will be coming to your campus during 9<sup>th</sup> to 11<sup>th</sup> March, 2020 for interaction with your students.

Thanking you,

Yours sincerely,

(Prof.Dr.V.Rajendran)

Principal

Administrative Office:

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## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/121

March 5, 2020

## **APPRECIATION NOTE**

This is to certify that Dr.P.K.Saranya, Assistant Professor, Department of Computer Science from Vellalar College for Women, Erode has handled classes for II year B.Sc.Computer Science during 3<sup>rd</sup> to 5<sup>th</sup> March 2020 under staff exchange programme between Dr.NGPASC, CBE & VCW, Erode. The students were benefited through the programme. Her contribution in knowledge exchange is highly appreciated. The students feedback are commendable.

(Prof.Dr.V.Rajendran)
Principal





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

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DRNGPASC/ADMIN/2019-20/122

March 5, 2020

## **APPRECIATION NOTE**

This is to certify that Mrs.K.Kiruthika Assistant Professor, Department of Computer Technology from Vellalar College for Women, Erode has handled classes for II year B.Sc.Computer Science during 3<sup>rd</sup> to 5<sup>th</sup> March 2020 under staff exchange programme between Dr.NGPASC, CBE & VCW, Erode. The students were benefited through the programme. Her contribution in knowledge exchange is highly appreciated. The students feedback are commendable.

(Prof.Dr.V.Rajendran)
Principal





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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/120

March 3, 2020

The Principal Vellalar College for Women (Autonomous) Thindal Erode – 638 012

Dear Madam,

Sub: MoU between Dr.N.G.P.ASC and Vellalar College for Women - Reg.

We are pleased to thank the Management and Principal of Vellalar College for Women, Erode for deputing Dr. P.K.Saranya, Assistant Professor, Department of Computer Science and Mrs.K.Kiruthika Assistant Professor, Department of Computer Technology to our college under innovative teaching learning process in their respective department during March 3 - 5, 2020 to our campus. We record our sincere appreciation for their teaching effort and interaction with our students.

Thanking you,

Yours sincerely,

(Prof.Dr.V.Rajendran)

Principa





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/123

March 6, 2020

The Principal Vellalar College for Women (Autonomous) Thindal Erode - 638 012

Dear Madam,

Sub: MoU between Dr.N.G.P.ASC and Vellalar College for Women - Reg.

We are pleased to thank the Management and Principal of Vellalar College for Women, Erode for deputing Ms.S.N.Subhathra, Assistant Professor, Department of Maths (CA), to our college under innovative teaching learning process in their respective department on 4<sup>th</sup> & 6<sup>th</sup> March 2020. We record our sincere appreciation for their teaching effort and interaction with our students.

Thanking you,

Yours sincerely,

61312 (Prof.Dr.V.Rajendran) Principal







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/125

March 7, 2020

The Principal Vellalar College for Women (Autonomous) Thindal Erode – 638 012

Dear Madam,

Sub: MoU - Innovative Teaching - Exchange of Staff - reg.

Ref: Your e-mail dt. 05.03.2020.

students of your esteem institution:

With reference to your e-mail communication, as a part of MoU – Innovative – Exchange of Staff, we are pleased to send the following staff members of our college to share their knowledge with the

S.No.	Date	Name of the Staff	Department
1.	9 <sup>th</sup> to 11 <sup>th</sup> March 2020	Mr.M.A.Prasad	Commerce
2.	9 <sup>th</sup> March 2020	Dr.V.Usharani	Computer Science
3.	10 <sup>th</sup> & 11 <sup>th</sup> March 2020	Mrs.M.Savithri	Computer Science
4.	9 <sup>th</sup> to 11 <sup>th</sup> March 2020	Ms.V.Meenakshi	Costume Design & Fashion
5.	9 <sup>th</sup> to 11 <sup>th</sup> March 2020	Dr.M.Sangeetha	Mathematics

Thanking you,

Yours sincerely,

(Prof.Dr.V.Rajendran)

Principal





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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#### VELLALAR COLLEGE FOR WOMEN (AUTONOMOUS)

"COLLEGE WITH POTENTIAL FOR EXCELLENCE"

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Thindal, Erode - 638 012, Tamilnadu, India.

©: 0424 - 2244101 Mob: 99767 51115 Fax: 0424 - 2244102

e-mail: principalvcw@gmail.com \* website: vcw.ac.in



Date: 12.03.2020

Dr.(Mrs.) N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-18/2020

To
The Principal
Dr.N.G.P. Arts and Science College
Coimbatore.

Dear Sir,

Sub: MoU - Innovative Teaching - Exchange of Staff - reg.

We are immensely pleased to thank the Management and Principal of Dr.N.G.P. Arts and Science College, Coimbatore for having deputed the following faculty members of your esteemed institution to our college under collaborative and innovative teaching learning process in their respective departments. Their sharing of academic expertise and teaching efforts are sincerely appreciated.

S.No.	Name of the Faculty with Designation	Department	Date/s	
1	Mr.M.A.Prasad Assistant Professor	Commerce	09.03.2020 11.03.2020	-
2	Ms.V.Meenakshi Assistant Professor	Costume Design and Fashion	09.03.2020 11.03.2020	-
3	Dr.M.Sangeetha Associate Professor	Mathematics	09.03.2020 11.03.2020	-
4	Mrs.M.Savithri Assistant Professor (SG)	Computer Science	10.03.2020 12.03.2020	

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## Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/124

March 6, 2020

## **APPRECIATION NOTE**

This is to certify that Ms.S.N.Subhathra, Assistant Professor, Department of Maths (CA), from Vellalar College for Women, Erode has handled classes for II year B.Sc.Mathematics on 4<sup>th</sup> & 6<sup>th</sup> March 2020 under staff exchange programme between Dr.NGPASC, CBE & VCW, Erode. The students were benefited through the programme. Her contribution in knowledge exchange is highly appreciated. The students feedback are commendable.

(Prof.Dr.V.Rajendran) Principal







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**Criterion III Metric 3.7.1** 



## VELLALAR COLLEGE FOR WOMEN (AUTONOMOUS)

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e-mail: principalvcw@gmail.com \* website: vcw.ac.in

Dr.(Mrs.) N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA

Ref.:OAC/VCW-19/2020



#### CERTIFICATE OF APPRECIATION

This is to certify that Mrs.M.Savithri, Assistant Professor (SG), Department of Computer Science of Dr.N.G.P. Arts and Science College, Coimbatore has handled classes for II B.Sc. Computer Science at our institution from  $10^{th}-12^{th}\,$  March 2020 under Staff Exchange Programme between the two institutions. Her contribution in knowledge sharing is commendable based on the students' feedback and is sincerely appreciated.



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Date: 12.03.2020





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NAAC
3rd Cycle

Criterion III Metric 3.7.1



# VELLALAR COLLEGE FOR WOMEN (AUTONOMOUS) "COLLEGE WITH POTENTIAL FOR EXCELLENCE"

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②: 0424 - 2244101 Mob: 99767 51115 Fax: 0424 - 2244102

e-mail: principalvcw@gmail.com ★ website: vcw.ac.in

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Dr.(Mrs.) N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-10/2020

Date: 09.03.2020

## CERTIFICATE OF APPRECIATION

This is to certify that Dr.V.Usharani, Assistant Professor (SG), Department of Computer Science of Dr.N.G.P. Arts and Science College, Coimbatore has handled classes for II B.Sc. Computer Science at our institution on 9<sup>th</sup> March 2020 under Staff Exchange Programme between the two institutions. Her contribution in knowledge sharing is commendable based on the students' feedback and is sincerely appreciated.



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Dr.(Mrs.) N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-17/2020

Date: 11.03.2020

#### CERTIFICATE OF APPRECIATION

This is to certify that Dr.M.Sangeetha, Associate Professor, Department of Mathematics of Dr.N.G.P.Arts and Science College, Coimbatore has handled classes for III B.Sc. Mathematics (CA) at our institution during 9<sup>th</sup>-11<sup>th</sup> March 2020 under Staff Exchange Programme between the two institutions. Her contribution in knowledge sharing is commendable based on the students' feedback and is sincerely appreciated.



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Dr.(Mrs.) N. MARAGATHAM, M.Sc., M.Phil., Ph.D., M.A.(G&C), D.A.P., PGDCA Principal

Ref.:OAC/VCW-15/2020



CERTIFICATE OF APPRECIATION

This is to certify that Mr.M.A.Prasad, Assistant Professor, Department of Commerce of Dr.N.G.P.Arts and Science College, Coimbatore has handled classes for III B.Com (CA) at our institution during 9<sup>th</sup>-11<sup>th</sup> March 2020 under Staff Exchange Programme between the two institutions. His contribution in knowledge sharing is commendable based on the students' feedback and is sincerely appreciated.

ERODE-12

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Date: 11.03.2020





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NAAC 3<sup>rd</sup> Cycle

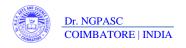
**Criterion III Metric 3.7.1** 



#### Dr.N.G.P. Arts and Science College (Autonomous) Coimbatore – 48



Cla	me of the Department/Institute: B.Sc. Compu ss: II B.Sc. Section: A me of the Teacher: Mrs.M.Savithri, Assistant F	Semester: IV	r Science,Dr.	N.G.P.Arts ar	nd Science Co	Ilege, Coimbatore
	eject Taught & Course Code: 18CSUC407-RI al number of lectures delivered by teacher in					3 2020
	THE FOLLOWING TABLE TICK ( ✓) THI					3.2020
	ting	(Below	(Avg.)	(Good)	(Very	(Excellent)
		Avg.)	2	3	Good)	5
A.	SUBJECTCOMMAND				-	3
1.	Focus on Syllabi				1	
2.	Self-confidence & Communication skills				~	
3	Conducting the classroom discussions					
1.	Teaching the subject matter					
5.	Delivery of structured lecture				1	
5.	Skill of linking subject to life experience & interest in the subject	creating				
·.	Refers to latest developments in the field				/	
3.	USEOF TEACHING METHODS/ TEACH	UNG AIDS				
	Use of teaching aids (OHP/Blackboard/PPT's)	and must				1
	Blackboard/Whiteboard work in terms of leg visibility and structure	sibility,				1
:.	OTHER MEASURES					W 1
0.	Helping approach towards varied academic i of students	nterests				~
1.	Inspires students for ethical conduct					
	ional Remarks(If any): The Lody					





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**NAAC** 3rd Cycle

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## 3. Student Exchange – AY: 2019-20



#### Dr. N.G.P. ARTS AND SCIENCE COLLEGE (Autonomous)

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#### Prof. Dr. V. RAJENDRAN

M.Sc., M.Phil., B.Ed., M.Tech (Nanotech)., Ph.D., (D.Sc.)., FinstP. (London) Professor and Principal

DRNGPASC/ADMIN/2020-21/04

June 17, 2020

The Principal Vellalar College for Women Erode

Dear Madam,

Sub: MoU - Participation in the online International Conference on Diaspora across Time and Space: Multifarious Understandings of Indian Diaspora Literature - reg.

Warm Greeting from Dr. N.G.P Arts and Science College!

As a part of MoU, we are pleased to depute 03 members and 01 research scholar from English department to participate and present paper in the online International Conference on Diaspora across Time and Space: Multifarious Understandings of Indian Diaspora Literature organised by Department of English in your esteemed institution, from June 18, 2020 to June 20,2020.

Kindly consider for fee waiver.

List of Members for participation and paper presentation:

- 1. Dr.R. Vithya Prabha Prof. & Head English
- Dr.S. Sudha Asst. Prof. English
   Ms.S.Nithya Devi Asst. Prof. English
   Ms.A.Govardhini Ph.D. FT Scholar English

Thanking you,

Yours sincerely,

7161~ (Prof. Dr. V. Rajendran)

Principal

Administrative Office

Kovai Medical Center Research and Educational Trust

Kovai Estate, Kalapatti Road, Coimbatore - 641 048 Ph: 0422 - 2369321 Website: www.kmch.ac.in E-mail: info@kmch.ac.in





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Criterion III Metric 3.7.1



### Dr. N.G.P. ARTS AND SCIENCE COLLEGE (Autonomous)

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Website: www.drngpasc.ac.in | Email: drngparts@kmch.ac.in

#### Prof. Dr. V. RAJENDRAN

M.Sc., M.Phil., B.Ed., M.Tech (Nanotech)., Ph.D., (D.Sc.)., FlnstP. (London) Professor and Principal

Ref. No. DRNGPASC/ADMIN/2019-20/107

February 26, 2020

The Principal Gobi Arts And Science College Karattadipalayam (Post) Gobichettipalayam - 638453

Dear Madam,

Sub: DRNGPASC-VCE Innovative teaching, Staff and Student exchange-Invitation- Reg.

Ref: MoU signed with your esteemed Institution on 17.02.2020.

Greetings from Dr. N.G.P. Arts and Science College, Coimbatore.

With reference to the MoU signed between Dr.N.G.P. Arts and Science College and Vellalar College for Women. We would like to invite 3 Staff and 10 students to participate with Registration fee waiver. We will be happy if you could kindly reciprocate the same.

The following are the details of the forthcoming Conferences Scheduled to be organissed at our College:

Date	Name of the Conference	Organized by
2 <sup>nd</sup> and 3 <sup>rd</sup> March, 2020	National Conference on Recent Trends in Bio Applied Sciences	Faculty of Basic Applied Sciences
6 <sup>th</sup> and 7 <sup>th</sup> March,2020	Futuristic approaches in transformation of Biological research	Faculty of BioSciences
11 <sup>th</sup> March,2020	Contemporary perspectives and development in humanities and Management	Faculty of Management and Humanities

Kindly mail me the hit of participants to the above events by mail.

Yours sincerely,

(Prof.Dr.V.Rajendran) Principal

Administrative Office:

Kovai Medical Center Research and Educational Trust Kovai Estate, Kalapatti Road, Coimbatore - 641 048 Ph: 0422 - 2369321 Website: www.kmch.ac.in E-mail: info@kmch.ac.in





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### Dr. N.G.P. ARTS AND SCIENCE COLLEGE

COPY

DRNGPASC/ADMIN/2019-20/114

March 3, 2020

The Principal Vellalar College for Women (Autonomous) Thindal Erode – 638 012

Dear Madam

Sub: MoU - Participation in National Conference on Recent Trends in Basic and

Applied Sciences - reg.

Ref: Your letter No.OAC/VCW-04/2020 dt.29.02.2020.

With reference to your letter cited above, as a part of MoU - the following Staff and students of your institution have participated in National Conference on Recent Trends in Basic and Applied Sciences on  $2^{nd}$  &  $3^{rd}$  March 2020, organized by our college under exchange programme:

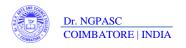
S.No.	Name of the Participant	Department
1.	Dr.M.Suganthi, Assistant Professor	Chemistry
2.	P.Keerthana	II B.Sc.Chemistry
3.	A.Rathna Prabha	II B.Sc.Chemistry
4.	N.Pavithra	II B.Sc.Chemistry
5.	S.Monesha	II B.Sc.Chemistry
6.	K.P.Sharulatha	II B.Sc.Chemistry
7.	B.Vinotha	II B.Sc.Chemistry
8.	S.Pavithra	III B.Sc.Computer Science
9.	L.Pavithra	III B.Sc.Computer Science
10.	S.Divya	III B.Sc.Computer Science
11.	S.Yuvana Prithiya	III B.Sc.Computer Science

Thanking you,

Yours sincerely,

(Prof.Dr.V.Rajendran)

Principa





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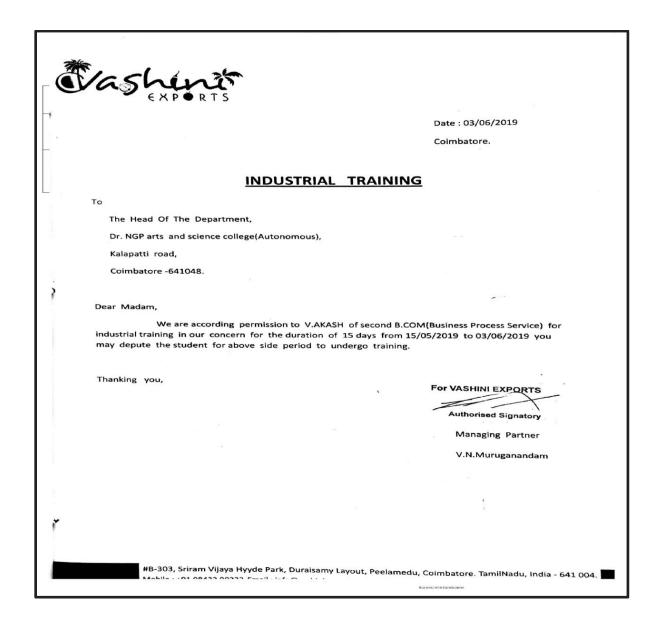
Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

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# 4.Student Internship – AY: 2019-20







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NAAC
3rd Cycle

Criterion III Metric 3.7.1

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TIN: 33576364142 CST: 342958 MOBILE: 94430 26066

9626711790

# SHARAVANA TEA INDUSTRIES

480/1A, Kavilorai Village, Nedugula P.O., Kotagiri-643217, The Nilgiris.

Date : .....

### **CERTIFICATE**

This is to certify Mr/Mrs.Anuja has successfully completed his/her intentionship from 06-05-2019 to 20-05-2019 during his/her period of intentionship he/she was so industrious / and disciplined with good interest and character.

With Regards

FOR SHARAVANA TEATINDUSTRIES

1 Segue

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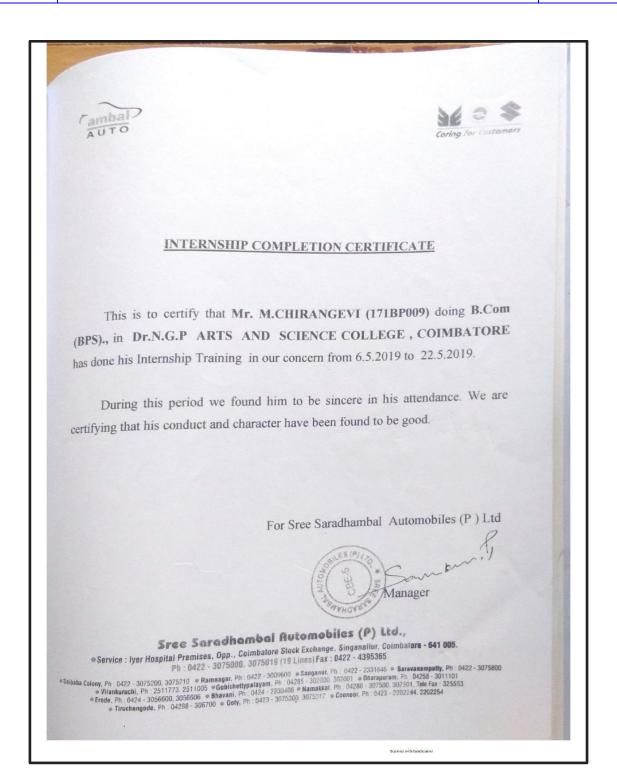
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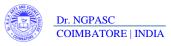
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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### VAITHIESWARA PAPERS & BOARDS PRIVATE LIMITED



642/3, Chennimala palayam, Veeracholapuram Post, Kangayam Taluk, Tirupur - 638701. Tamilnadu. India. Ph.: 04257-256670 Fax: 04257-256680 Cell: 94422 - 56630, 94422 - 56660 94422 - 56670, 94422 - 56680 E-mail: vaithieswara@gmail.com

#### TO WHOM IT MAY CONCERN

This is to certify that Mr.Jagan, B.Com(B.P.S) S/O- Mr. Jayabalasubramanian Graduate completed Fifteen Days (From 01 May19 to 16 May19) internship at this Organization/Company. His internship activity includes familiarizations to all the departments and there operations and processes and there management overview involved with the production process of the company.

He had majorly involved in an activity of Marketing and Accounts management. During the period of his internship program with us he had been exposed to different process was found punctual, hardworking and inquisitive. We wish him every success in his life and career.

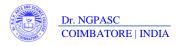
For Vaithieswara Papers & Boards Private Limited,

M.C.Selvakumar (Joint Managing Director)

VAITHIESWARA PAPERS & BOARDS PRIVATE LIMITED 642/3, Chennimalapalayam, VEERACHCLAPURAM POST, Kangayam (Tk), Tirupur - 638 701. Tamilnadu, India.

TIN: 33083083241 CST No.: 884264 / Dt.11.12.2006 E.C.C.No.; AACCV 5005F XM001

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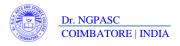
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

-0	Cloth Merchants 2/309-B, Andikadu Thottam, ELACHIPALAYAM, Karumathampatti ( P.O) Sulur (Tk), Coimbatore - 641 659.
	Date
-	
То	The head of the decision
	The head of the department,
	Dr. N.G.P. Arts and Science College, Coimbatore.
Dear	
Dear	Sub : Completion of industrial training
comp 23.05 depart	This is to certificate that Ms. P. LAVANYA studying B.COM BPS Dr. N.G.P. Arts and Science College, Kalapatti. She has successfully leted her industrial training from the period of 15 days (07.05.2019 to .2019) in our company. She has been trained in each and every timent in our company. During the period of her training we found tall and hard working.
	We wish her all the success in future.
	TENTIL TENTIL EC
	For SAMPATH TEXTILES  Proprietor





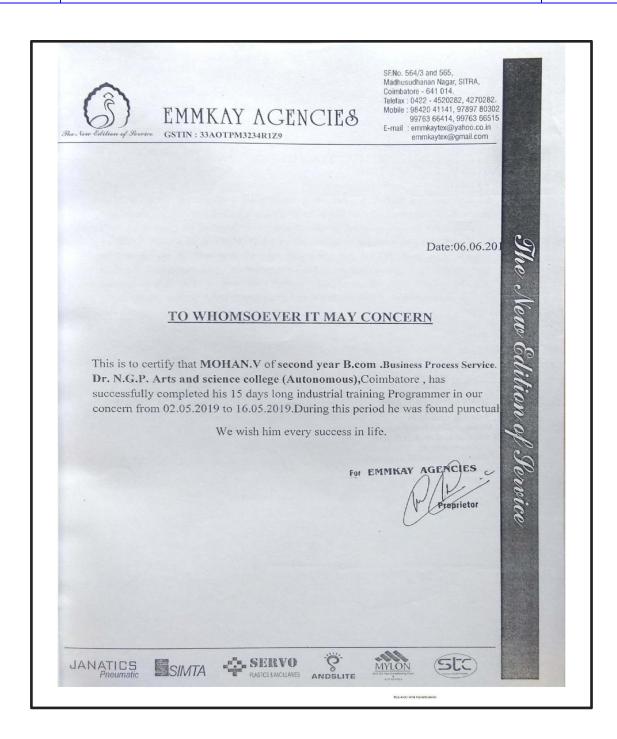
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







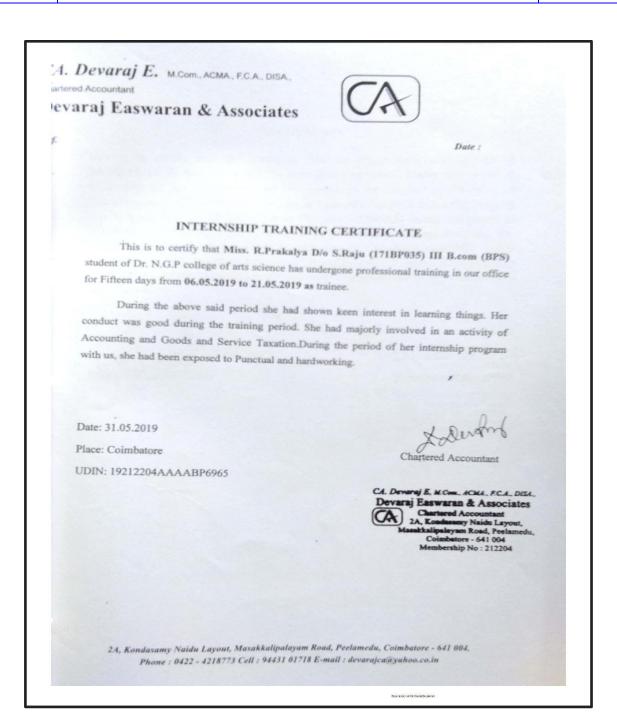
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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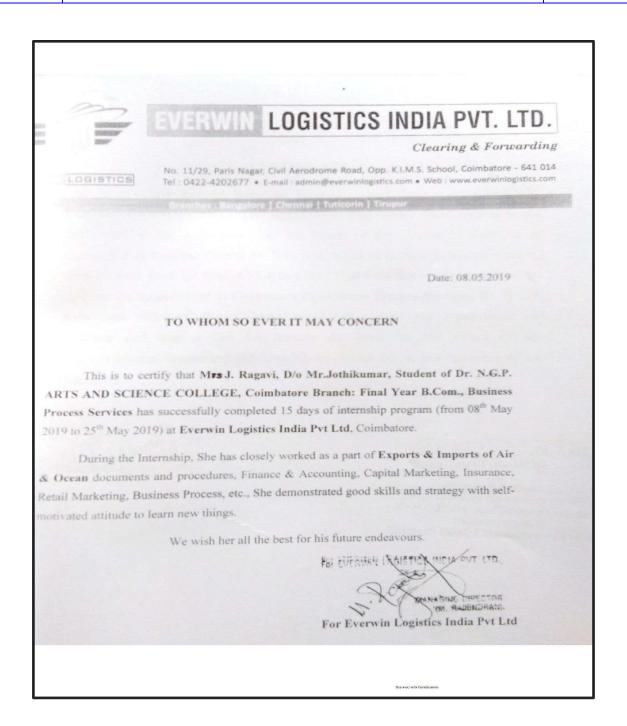
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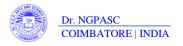
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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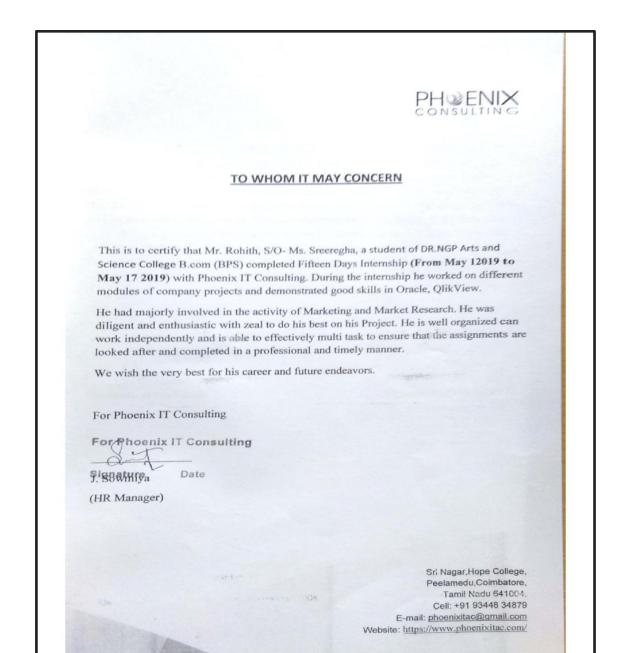
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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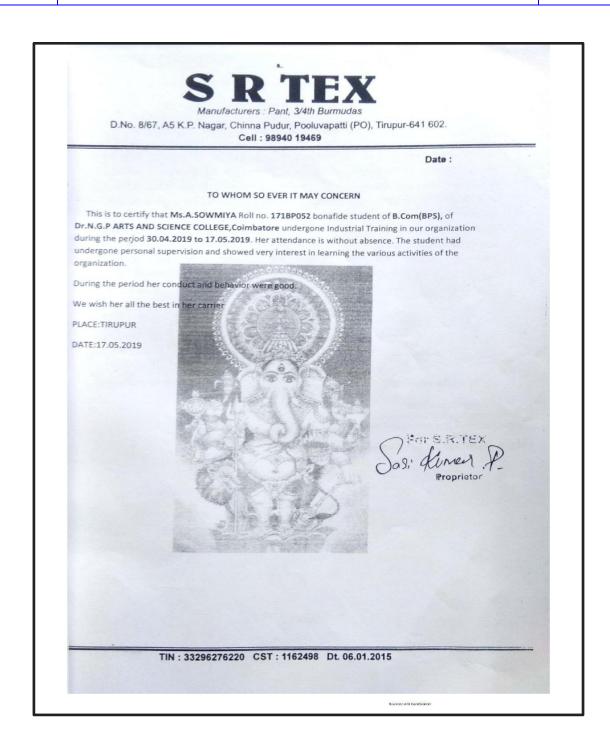
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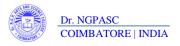
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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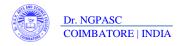
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







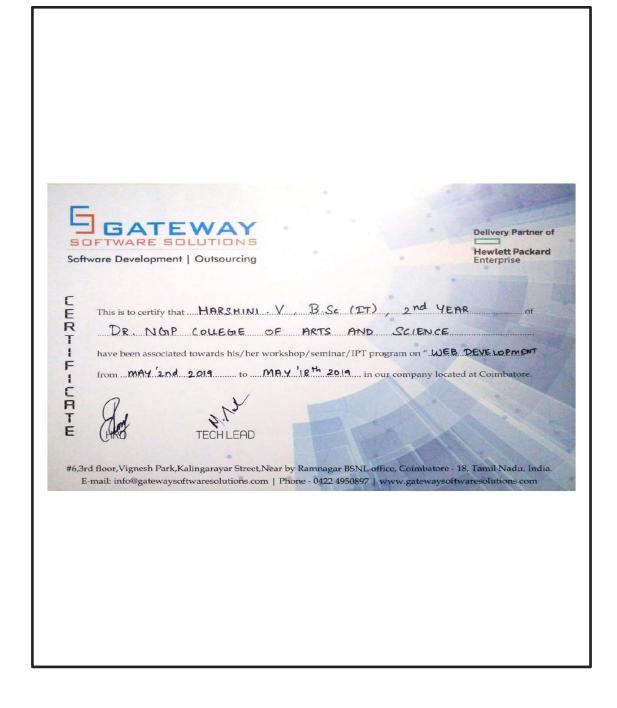
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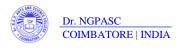
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC
3rd Cycle

Criterion III Metric 3.7.1



SPRINGFIT MATTRESSES & SLEEP SYSTEM

Date: 27 May 2019

#### TO WHOM IT MAY CONCERN

This is to certify that Ms. B.LAVANYA, Student of Bachelor of Information Technology (B.Sc.IT) of Dr. N.G.P. Arts and Science College has successfully completed an internship with us on topic of "Dispatching software" from 2 May 2019 to 18 May 2019 under the guidance of

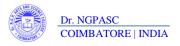
#### Mr. T.HARISH.

During the period of her internship program with us she had been exposed to different process was found punctual, hard working and inquisitive.

We wish her every success in her life and career.

T.Harish
Distributor
Springfit mattresses Pvt Ltd
Coimbatore

Scanned by CamScanner





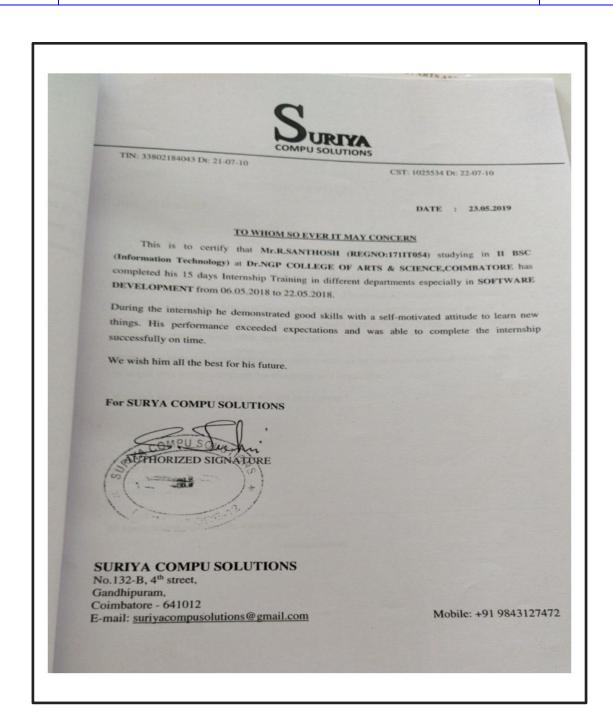
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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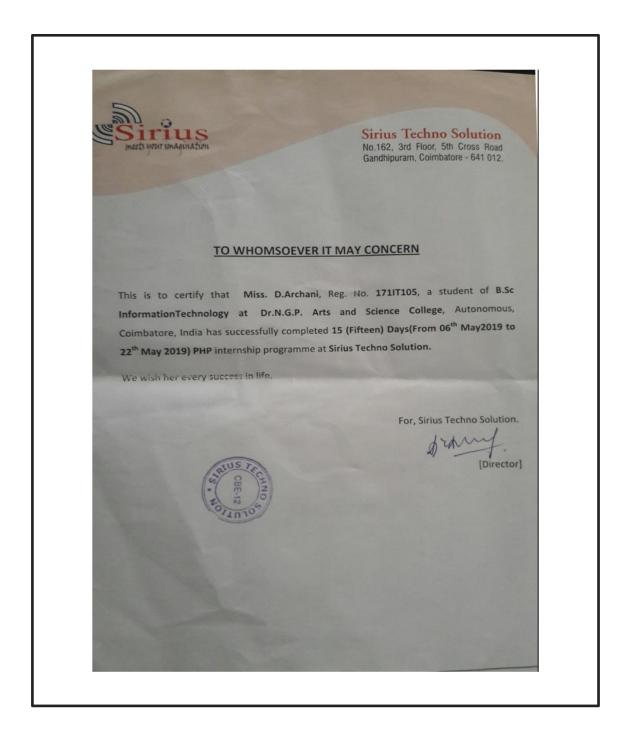
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NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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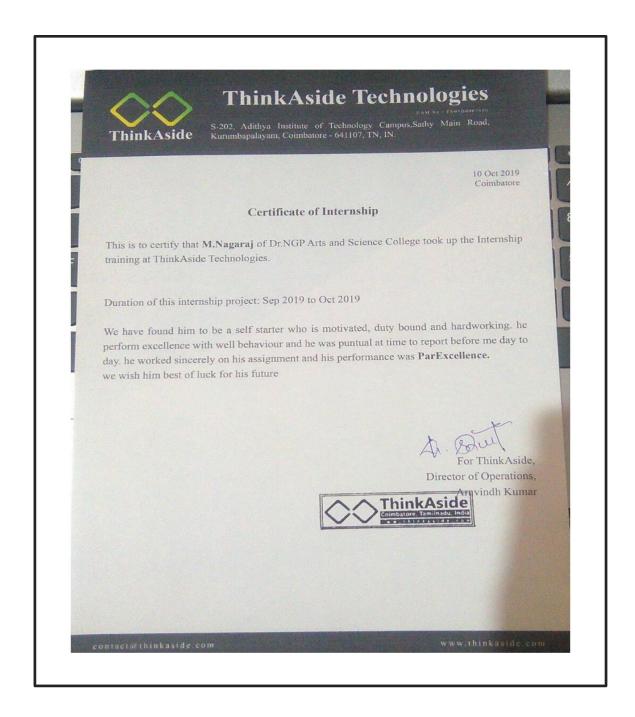
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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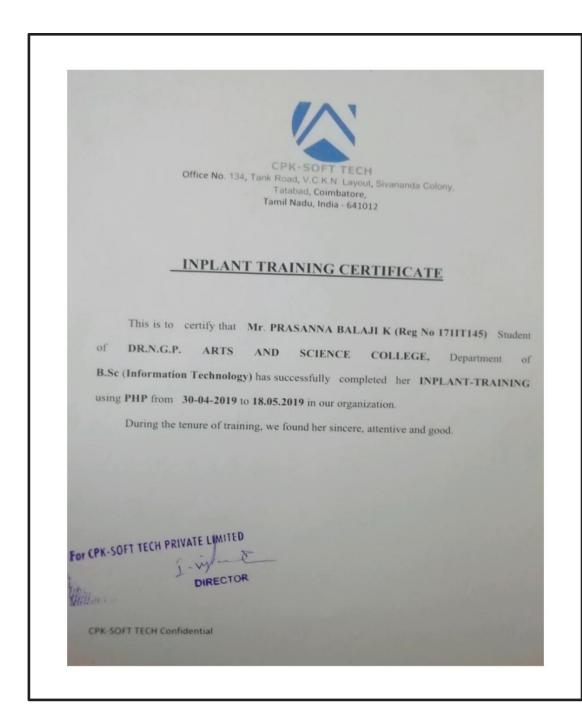
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

## REVATHI MEDICAL CENTER TIRUPUR (I) PVT. LTD.



NABH ACCREDITED CRITICAL CARE & SUPER MULTI SPECIALITY REFERRAL HOSPITAL Valayankadu Main Road, Kumar Nagar (West), Tiruppur - 3.

Phone: 0421 - 433 22 00, 433 22 11, 22 33 666

E-mail: revathimedicalcenter@gmail
Website: www.revathimedicalcenter.com



30.04.2019

#### **CERTIFICATE OF TRAINING**

This is to certify that Miss.C.ABINAYA, B.Sc 2<sup>nd</sup> year Physics, from DR.N.G.P.ARTS AND SCIENCE COLLEGE, COIMBATORE, has successfully completed her training in our institution for a period from 15/05/2019 to 29/04/2019 and have learned about various process involved on our Radiology Department.

During these times her course of action is good.

For REVATHI MEDICAL CENTER JIRUPUR INDIA PVT LTD

Authorised Signatory

For Emergency Care Call: 98422 - 11116, 98422 - 56560





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

### SALZER ELECTRONICS LTD.

CIN: L03210TZ1985PLC001535



December 17, 2018

#### **CERTIFICATE**

This is to certify that Ms. DEERCHANA.S BSC(PHYSICS) II Year student of Dr.N.G.P ARTS AND SCIENCE COLLEGE COIMBATORE – 641048 has successfully completed her INTERNSHIP as a part of her course in our company from 29.11.2018 to 13.12.2018.

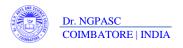
She has evinced keen interest in absorbing the nature, concept and functions of our organization and her conduct and character were **good** during the period.

For SALZER ELECTRONICS LIMITED

K.RAMAN (MANAGER-HR)



Samichettipalayam, Coimbatore - 641 047, India.
Phone: + + 91 422 4233600 Fax: + + 91 422 2692170
E-mail: salzer@salzergroup.com Website: www.salzergroup.com





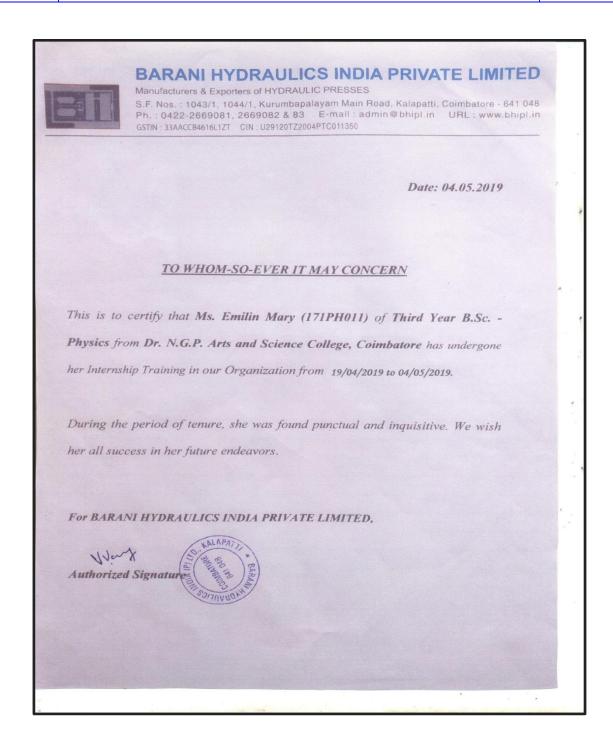
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### RAJESWARI ENGINEERING WORKS

S.F. No. 406/2, Masaran Kovil Thottam, Near Sanjevani Hospital, Kovai Road, Annur - 641 653, Coimbatore (Dt)

Ref:

Date:

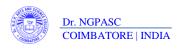
#### TO WHOME SO EVER IT MAY CONCERN

This is to certify that Mr.L.JEEVA (171PH018) II Year B.SC. Physics student of Dr.N.G.P.Arts And Science College, Kalapatti Road, Coimbatore – 641048 has undergone Internship Training in our company from 02-05-2019 to 18-05-2019.

During this period we found his conduct and dedication to the work is Satisfactory.

For RAJESWARI ENGINEERING WORKS

Proprietor





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

## mm engineers private limited AN ISO 9001: 2008 Company

20-05-2019

#### TO WHOSOEVER IT MAY CONCERN

This is to certify that Ms.Keerthika N II B.Sc Physics Student of Dr.N.G.P.Arts And Science College, Dr.N.G.P - Kalapatti Road, Coimbatore - 641048 has undergone Internship training in our Company from 02-05-2019 to 18-05-2019. During this period we found her conduct and dedication to the work is Satisfactory.

For MM ENGINEERS PRIVATE LIMITED





OEM Partner: STAHL CraneSystems GmbH, Germany.

**Crane Systems** 

Partner of

WORKS / OFFICE :

SF. No. 694/2, SUNDARAPURAM ROAD, MADUKKARAI (P.O), COIMBATORE - 641 105. INDIA Ph : 0422 - 7188900, 63801 37233

Office: 0422 - 4383851 / 4383852 E-mail: emem@airtelmail.in, emem@mmengineers.com Website: www.mmengineers.com

REGD. OFFICE: POST BOX No.: 1166,

15, PONNUSWAMY ROAD, COIMBATORE - 641 002. INDIA,

Dr. NGPASC COIMBATORE | INDIA



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**NAAC** 3rd Cycle

**Criterion III Metric 3.7.1** 

# सीएसआईआर - केन्द्रीय विद्युतरसायन अनुसंधान संस्थान

CSIR - CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

(Council of Scientific & Industrial Research) कारैकुडी / KARAIKUDI - 630 003 तमिलनाडु / TAMILNADU, भारत / INDIA

Date: 10.12.2018

15-HR (IPT) 18-PPMG/ICP

#### **CERTIFICATE**

This is to certify that Ms. R. Pooja, II year B.Sc., Physics, from Dr. N.G.P. Arts and Science College, Coimbatore-641048 has undergone In-plant Training Programme on "Electroplating" under the guidance of Dr. R. Sekar, Sr. Technical Officer from 26.11.2018 to 10.12.2018 at Electroplating & Metal Finishing Division in CSIR-Central Electrochemical Research Institute, Karaikudi

(Dr. S. Sathiyanarayanan)

म्ब वैज्ञानिक तथा प्रमुख / Chief Scientist & Head परियोजना योजना एवं अनुवीक्षण समृह् / Project Planning & Monitoring Group शार्कशार- केंद्रीय विद्युत्तरसायन अनुसंधान संस्थान / - Central Electrochemical Research Institute करिकुडी / Karaikudi - 630 003, शारस/INDIA

04565 - 241241, 241251 241265 - 227779, 227716, 227205 e-mail: director@cecri.res.in Website: www.cecri.res.in





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### MKM KNIT CREATION

No: 8, Amarjothi Mullai Nagar, Muthunampalayam Road, Nallur, Tirupur - 641 606.

Date: 03/07/2019

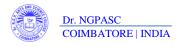
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.Sanjay Kumar.S (171PH041) doing final year B.Sc Physics student of Dr.N.G.P. Arts and Science College, Coimbatore has undergone the internship training in Sewing Department from 04.06.2019 to 18.06.2019.

During this period we found him to be sincere in his work and regular in his attendance. During this period his conduct and character have been found to be good. We wish him all the best in his future endeavours.

For MKM Knit creation,

Authorized Signature





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

### PREMA ENGINEERING

Mfrs.of: Grey Iron, SG Iron & Steel Castings No.737/1, Thottipalayam Road, Civil Aerodrome (PO), Coimbatore - 641 014.



17th May, 2019

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr S. Vijay, B.Sc. (Physics) Student of Dr. NGP Arts & Science College, Coimbatore has undergone Internship Training in our Foundry, from 02.05.2019 to 16.05.2019.

During the training period, he was familiarised on the manufacturing process of castings.

We appreciate his interest for learning and wish him all the success in his future endeavours.

For PREMA ENGINEERING

N.G.Sugumaran, Administrative Coordinator



Ph.: 2627891

Tele Fax : 2628162

E-mail: premaengg@yahoo.co.in





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



Date: 03/06/2019

Coimbatore.

### **INDUSTRIAL TRAINING**

То

The Head Of The Department,

Dr. NGP arts and science college(Autonomous),

Kalapatti road,

Coimbatore -641048.

Dear Madam,

We are according permission to V.AKASH of second B.COM(Business Process Service) for industrial training in our concern for the duration of 15 days from 15/05/2019 to 03/06/2019 you may depute the student for above side period to undergo training.

Thanking you,

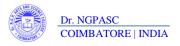
For VASHINI EXPORTS

Authorised Signatory

Managing Partner

V.N.Muruganandam

#B-303, Sriram Vijaya Hyyde Park, Duraisamy Layout, Peelamedu, Coimbatore. TamilNadu, India - 641 004.





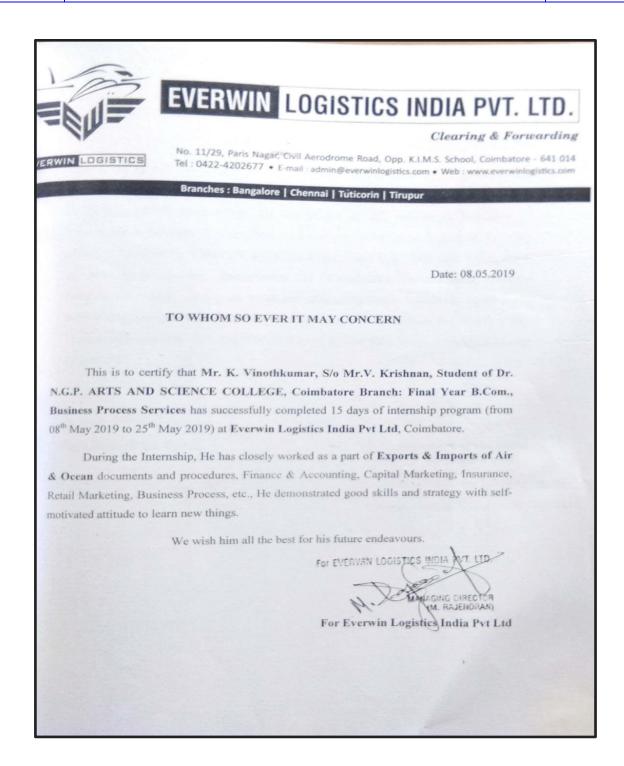
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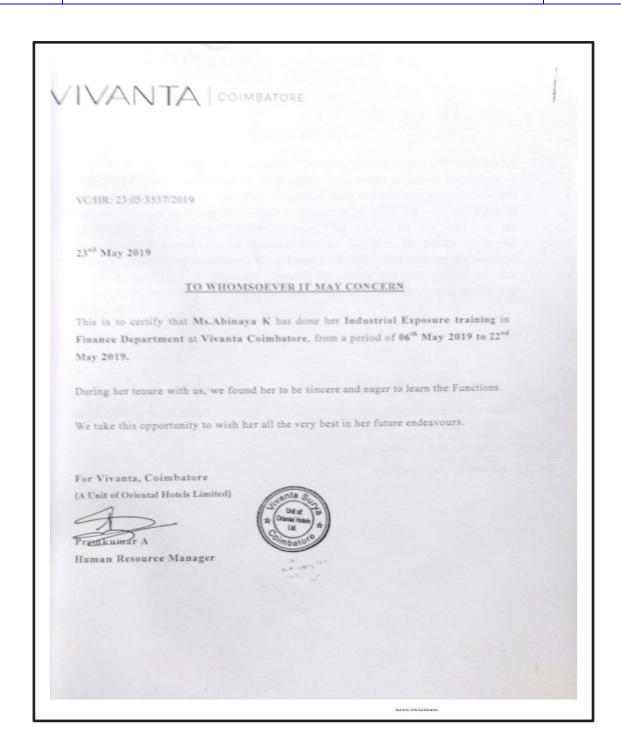
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**NAAC** 3rd Cycle

**Criterion III Metric 3.7.1** 



#### **ABT** MARUTI

ARUTI¥\$SUZUKI

Lakshmi Theatre Building, Kempatty Colony, Ukkadam, Coimbatore - 641 001 Phone: 0422-4232660, 4232655 E-mail ID: udmservice@abtlimited.com

17<sup>th</sup> May 2019

#### TO WHOMSOEVER IT MAY CONCERN

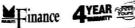
This is to certify that Ms.ANJUGAM P a student of B.COM (BPS) of Dr.N.G.P ARTS AND SCIENCE COLLEGE, Coimbatore. She has undergone industrial Exposure training in ABT MARUTI from a period of 02<sup>nd</sup> May 2019 to 16<sup>th</sup> May 2019

During the training period her character and conduct are good.

FOR ABT MARUTI,

(A.Ragupathi) Regional Manager

AST MARUTI Laksrami Theutre Building Kempatty Colony, Ukradam, CGMBATORE - 641 001 PH . 4232660, 4232658















\* CHENNAI \* CUDDALORE \* COMBATORE \* POLLACHI \* MADURAI \* TRICHY \* KARUR CIN: U60231TZ1931PLC000006





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

GSTIN: 33EZKPS6281L2ZK

TIN: 33576364142 CST: 342958 MOBILE: 94430 26066

9626711790

# SHARAVANA TEA INDUSTRIES

480/1A, Kavilorai Village, Nedugula P.O., Kotagiri-643217, The Nilgiris.

Date : .....

#### **CERTIFICATE**

This is to certify Mr/Mrs.Anuja has successfully completed his/her intentionship from 06-05-2019 to 20-05-2019 during his/her period of intentionship he/she was so industrious / and disciplined with good interest and character.

With Regards

FOR SHARAVANA TEATINDUSTRIES

Day o

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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

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Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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# JAGANNATH TEXTILE, LTD

 23-1, Venkataswamy Road, East Perlaswamy Road, RS Puram, Colmbatore.

Date:20.05.2019

#### TO WHOMSOEVER IT MAY CONCERN

This is certify that Ms. Arthi.P (Reg No:171BP006) B.Com (BPS) student of Dr.NGP College of Arts & Science, Coimbatore. has undergone Internship Training in our company for the period from 04.05.2019 to 16.05.2019 and successfully completed the training.

During the training period his character and conduct are good.

FOR JAGANNATH TEXTILE, LTD



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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

GSTIN: 33AAUFS7412E1Z3

@: 0421-2344588

: 0421-2344645 Cell : 98422 34075

:99422 34075

# ST SILVER TEXTILES

5/177, Kinathu Kattu Thottam, SULTHANPETTAI, Mangalam, TIRUPUR - 641 663.

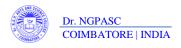
Date 23.05-2019

#### CERTIFICATE

This is to certify that Miss. R.ASHMIKA (Reg no. 171BP007) II B.Com Business Process Services in Dr. N.G.P ARTS AND SCIENCE COLLEGE, Coimbatore. She has done her institutional training in our organization during the period from 06.05.2019 to 20.05.2019. Her conduct and character was good.

For Silver Portiles

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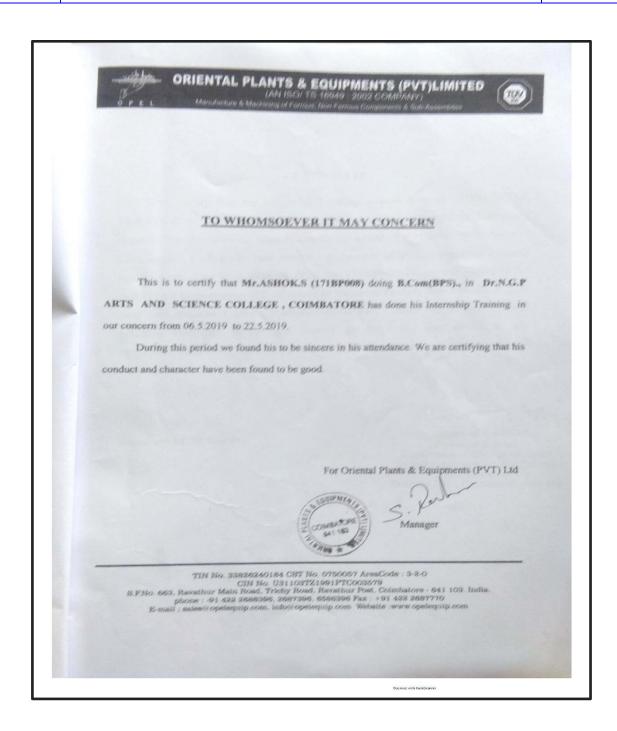
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

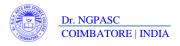
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







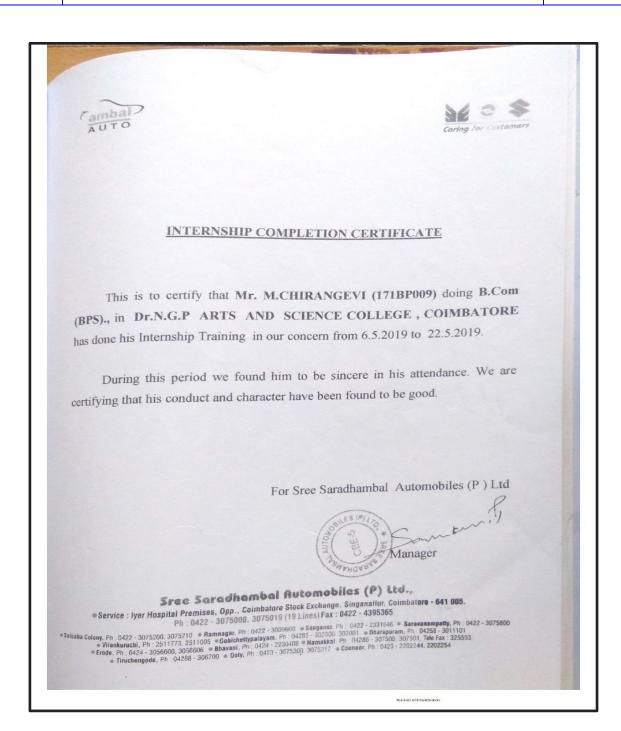
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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Criterion III Metric 3.7.1



#### **TO WHOM IT MAY CONCERN**

This is to certify that Mr. Devabalakrishnan, B.com (BPS) S/O- Mr. Chandramohan, a student of DR.NGP Arts and Science College B.com (BPS) completed Fifteen Days Internship (From May 12019 to May 17 2019) with Phoenix IT Consulting. During the internship he worked on different modules of company projects and demonstrated good skills in Oracle, QlikView.

He had majorly involved in the activity of Marketing and Market Research. He was diligent and enthusiastic with zeal to do his best on his Project. He is well organized can work independently and is able to effectively multi task to ensure that the assignments are looked after and completed in a professional and timely manner.

We wish the very best for his career and future endeavors.

For Phoenix IT Consulting

For Phoenix IT Consulting

Signature Da

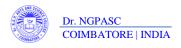
J. Sowmiya

(HR Manager)

Sri Nagar, Hope College, Peelamedu, Coimbatore, Tamil Nadu 641004. Cell: +91 93448 34879

E-mail: phoenixitac@gmail.com
Website: https://www.phoenixitac.com/

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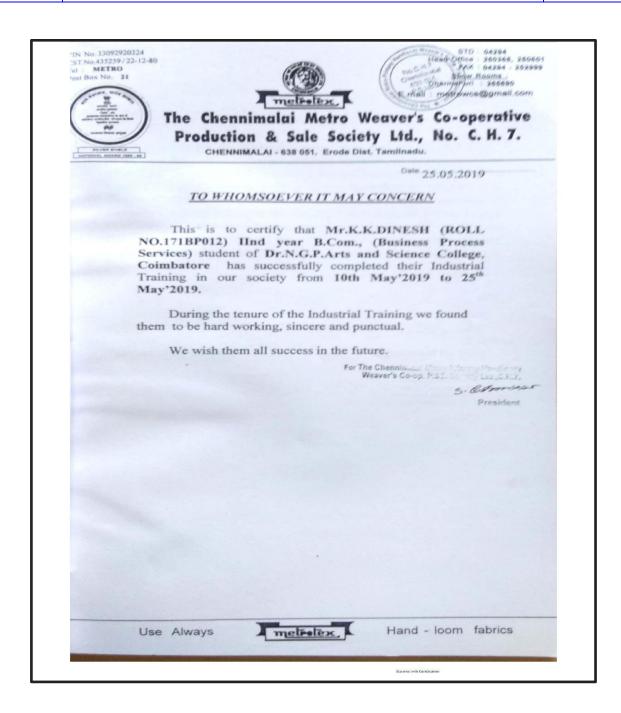
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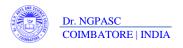
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

SAMPATH TEXTILES  Cloth Merchants
2/309-B, Andikadu Thottam, ELACHIPALAYAM, Karumathampatti ( P.O) Sulur (Tk), Coimbatore - 641 659.
Date
Date
То
The head of the department,
Dr. N.G.P. Arts and Science College,
Coimbatore.
Dear Sir,
Sub: Completion of industrial training
This is to certificate that M. GEETHANJALI studying B.COM BPS from Dr. N.G.P. Arts and Science College, Kalapatti. She has successfully completed her industrial training from the period of 15 days (07.05.2019 to 23.05.2019) in our company. She has been trained in each and every department in our company. During the period of her training we found punctual and hard working.
We wish her all the success in future.
For SAMPATH TEXTILES  Proprieter





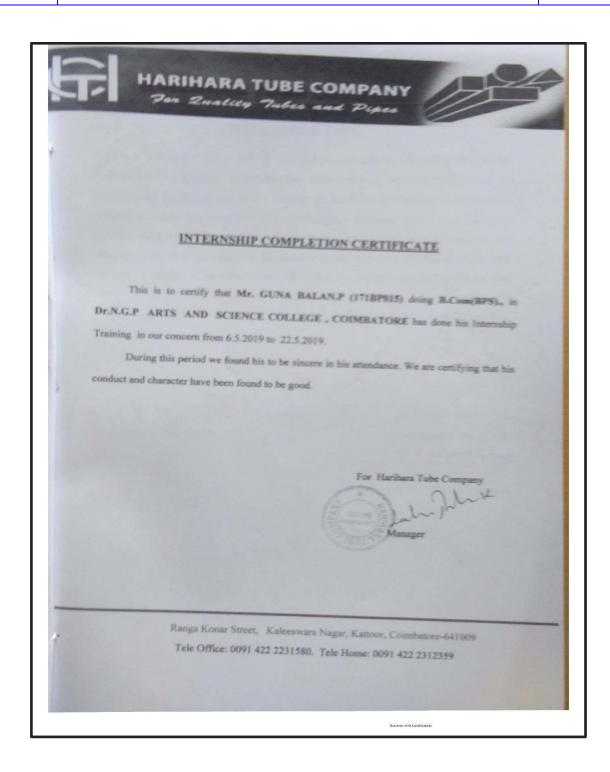
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

## VAITHIESWARA PAPERS & BOARDS PRIVATE LIMITED



642/3, Chennimala palayam, Veeracholapuram Post, Kangayam Taluk, Tirupur - 638701. Tamilnadu. India. Ph: : 04257-256670 Fax: 04257-256680 Cell: : 94422 - 56630, 94422 - 56660 94422 - 56670, 94422 - 56680 E-mail: vaithieswara@gmail.com

#### TO WHOM IT MAY CONCERN

This is to certify that Mr.Jagan, B.Com(B.P.S) S/O- Mr. Jayabalasubramanian Graduate completed Fifteen Days (From 01 May19 to 16 May19) internship at this Organization/Company. His internship activity includes familiarizations to all the departments and there operations and processes and there management overview involved with the production process of the company.

He had majorly involved in an activity of Marketing and Accounts management. During the period of his internship program with us he had been exposed to different process was found punctual, hardworking and inquisitive. We wish him every success in his life and career.

For Vaithieswara Papers & Boards Private Limited,

M.C.Selvakumar (Joint Managing Director)

VAITHIESWARA PAPERS & BOARDS PRIVATE LIMITED 642/3, Chennimalapalayam, VEERACHCLAPURAM POST, Kangayam (Tk), Tirupur - 638 701. Tamilnadu, India.

TIN: 33083083241 CST No.: 884264 / Dt.11.12.2006 E.C.C.No.: AACCV 5005F XM001

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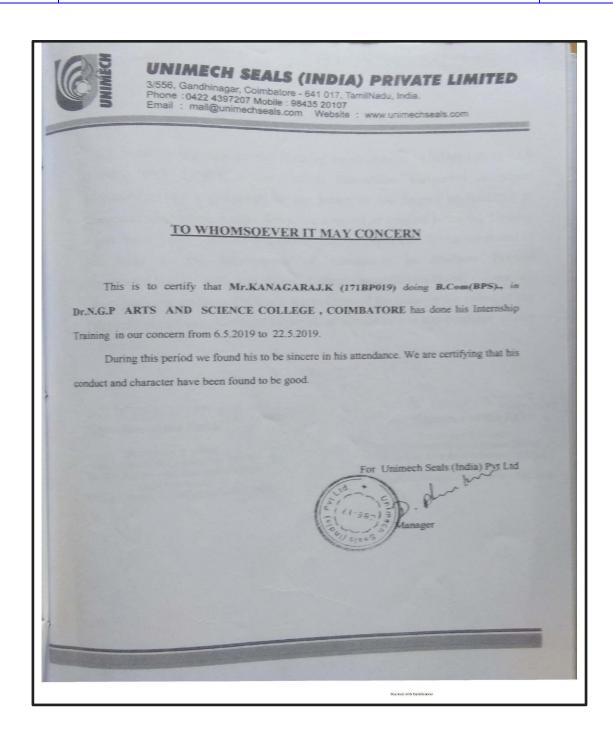
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







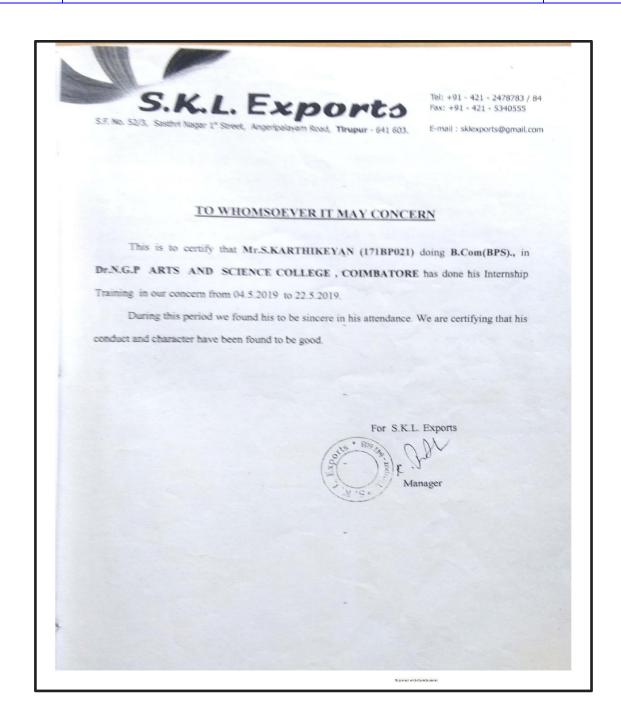
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NAAC 3<sup>rd</sup> Cycle







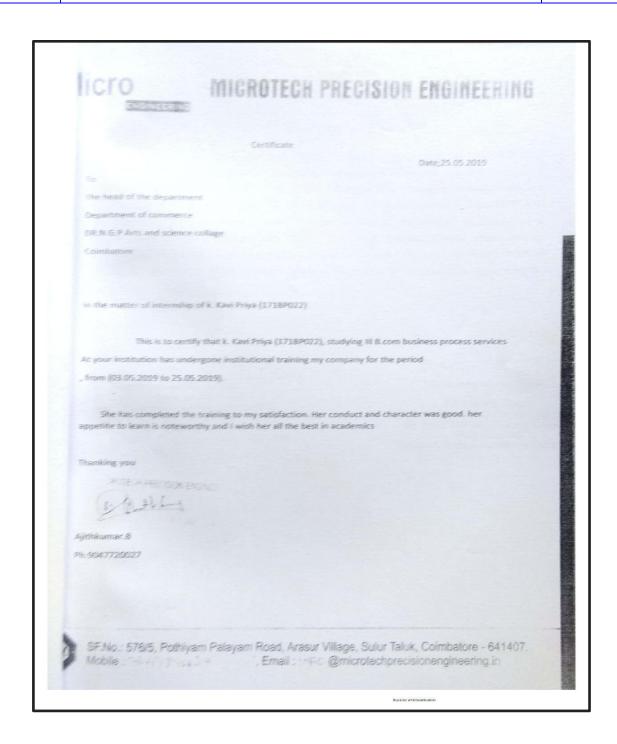
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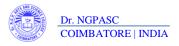
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NAAC
3rd Cycle







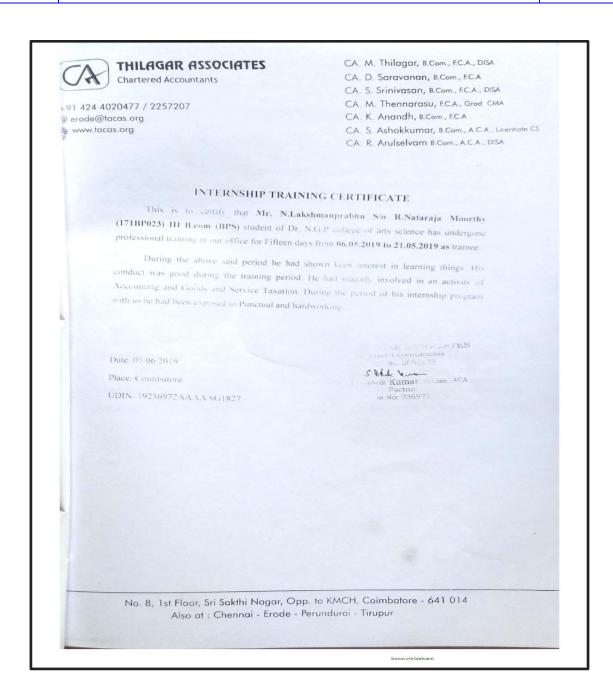
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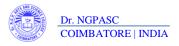
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NAAC
3rd Cycle

Criterion III Metric 3.7.1

TIN: 33396274225 Ph: 97500 12622 ST.: 1179260 Dt. 27.12.2014 SAMPATH TEXTILES 2/309-B, Andikadu Thottam, ELACHIPALAYAM, Karumathampatti ( P.O) Sulur (Tk), Coimbatore - 641 659. To The head of the department, Dr. N.G.P. Arts and Science College, Coimbatore. Dear Sir. Sub: Completion of industrial training This is to certificate that Mrs. P. LAVANYA studying B.COM BPS from Dr. N.G.P. Arts and Science College, Kalapatti. She has successfully completed her industrial training from the period of 15 days (07.05.2019 to 23.05.2019) in our company. She has been trained in each and every department in our company. During the period of her training we found punctual and hard working. We wish her all the success in future. FOR SAMPATH TEXTILES

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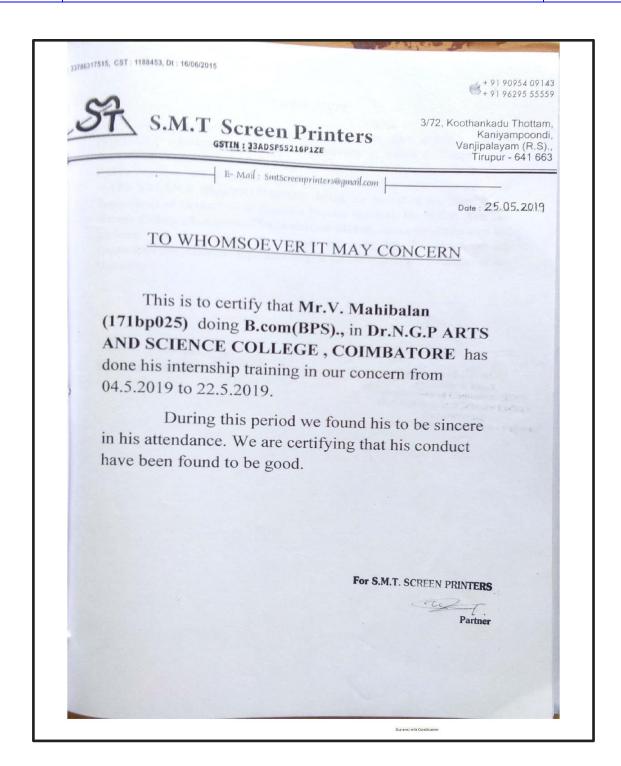
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle







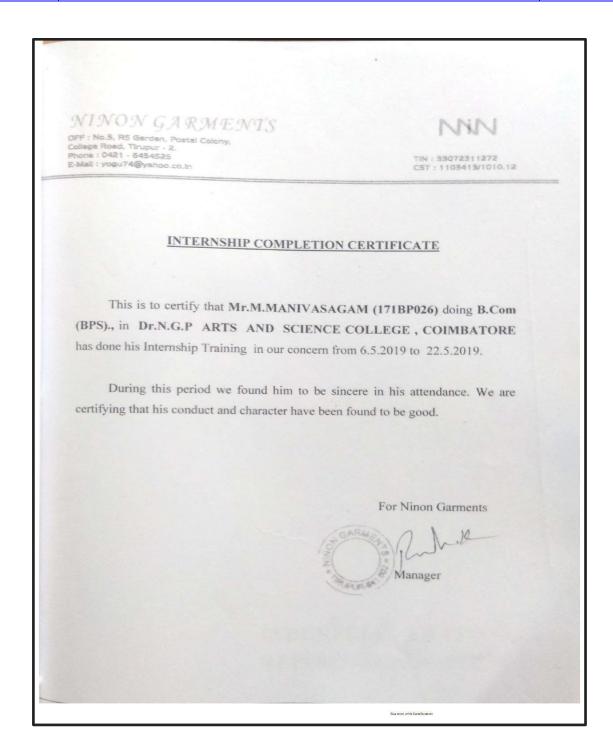
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







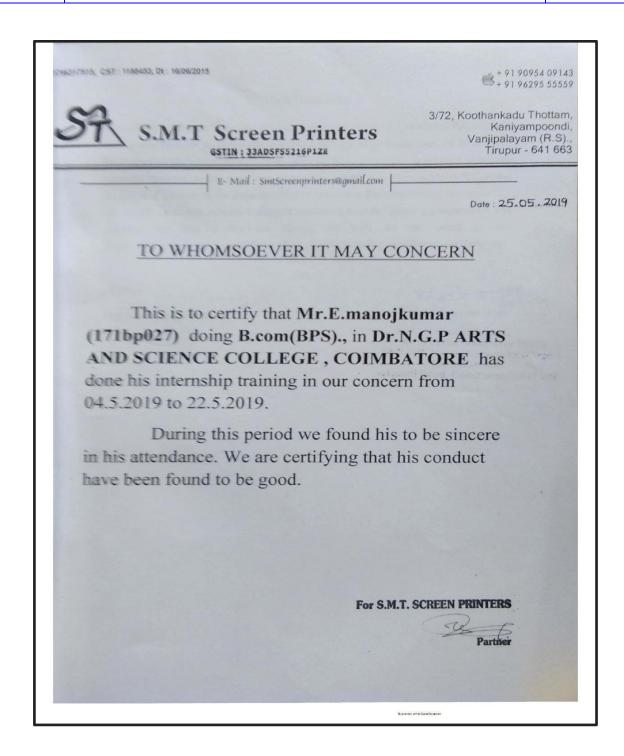
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

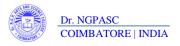
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle







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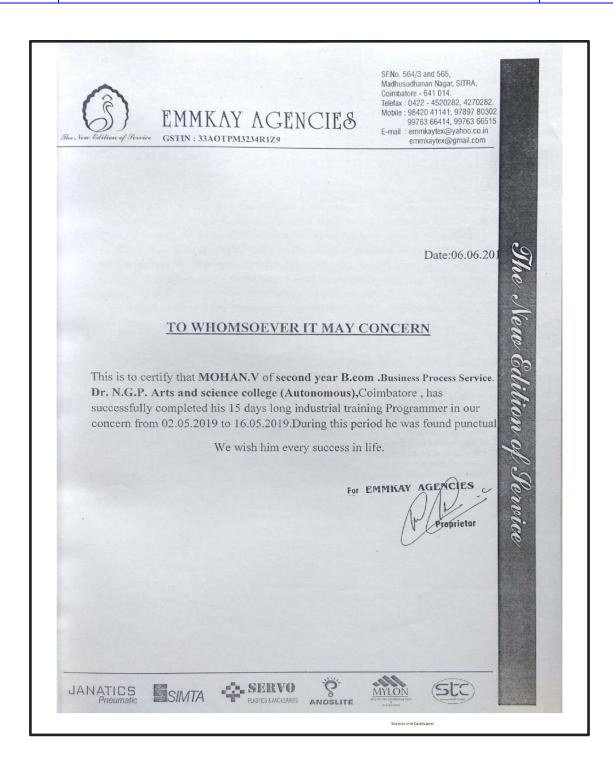
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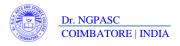
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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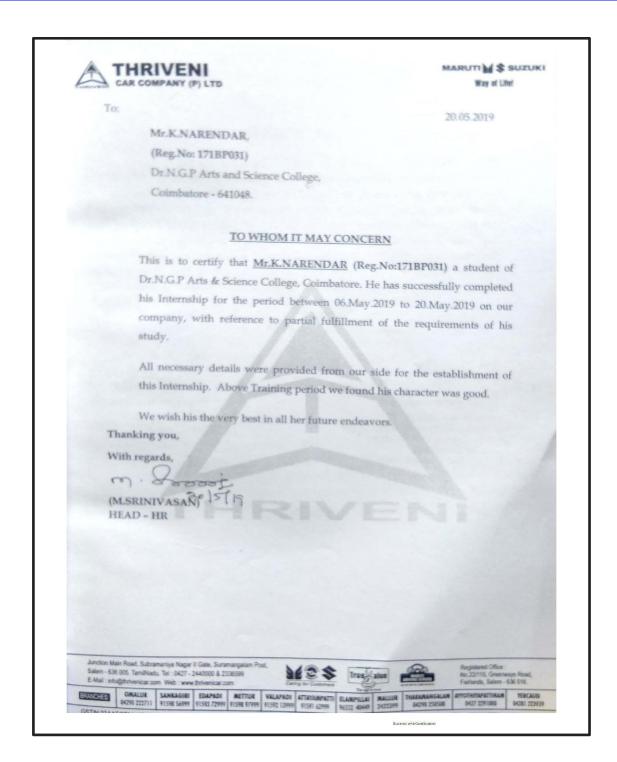
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NAAC 3<sup>rd</sup> Cycle







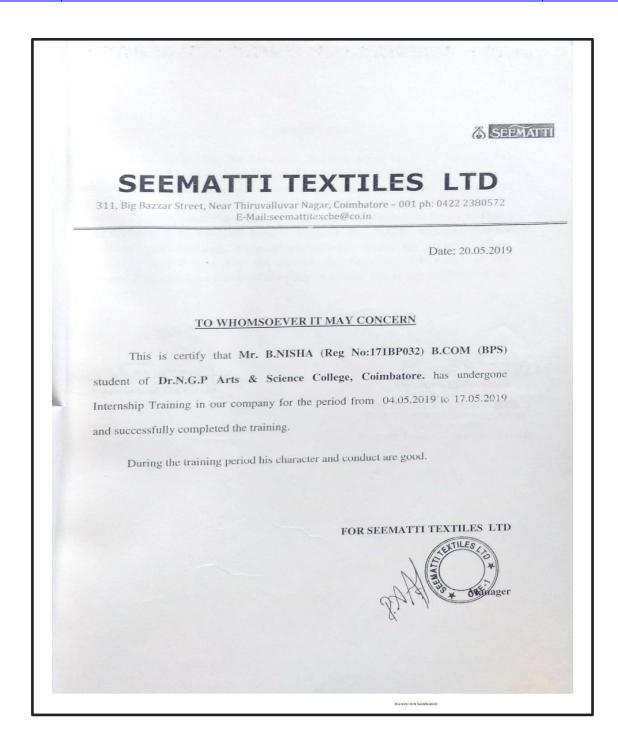
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle







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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

PADMATEX

## SRI SRINIVASA SPINTEX

Mfrs. of Quality Colour Yarns

4/62, Paramasivan Kovil Thottam, Kannampalayam, Mobile: 98659 53336, 7502716000, Sulur, Coimbatore - 641 402, Tamilnadu.

GSTIN: 33ACCFS2501G1ZP

Date:

15.05.2019

E-Mail: padmatexsrinivasan@gmail.com

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms.P. NITHYASHRI Roll no. 171BP033 bonafide student of B.Com (BPS), of Dr.N.G.P ARTS AND SCIENCE COLLEGE, Coimbatore undergone Industrial Training in our organization during the period 30.04.2019 to 15.05.2019. Her attendance is without absence. The student had undergone personal supervision and showed very interest in learning the various activities of the

During the period her conduct and behavior were good.

We wish her all the best in her carrier.

FOR SRI SRINIVASASPINTEA

gistered Office : 4/654-J, Pethamuchipalayam, Samalapuram(Po), Somanur (Via), Tirupur Dist - 641 663, Tamilnadu.





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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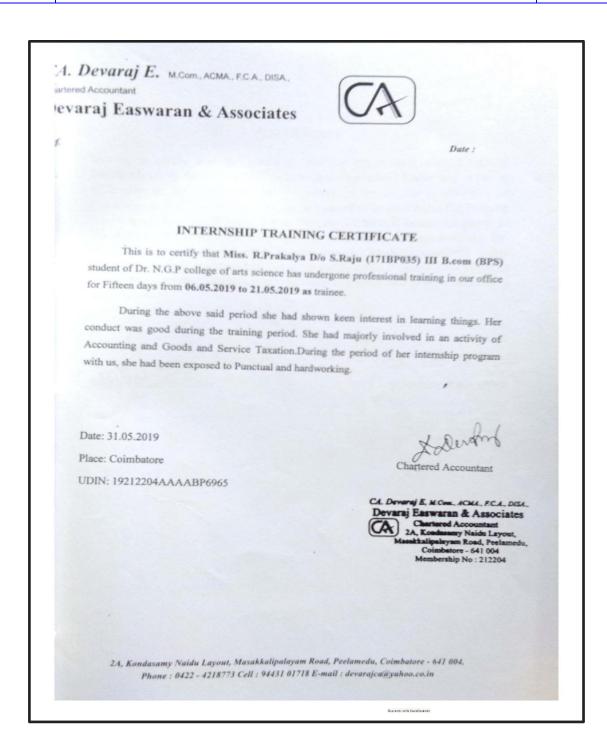
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NAAC
3rd Cycle

Criterion III Metric 3.7.1

#### BULLMENN MOTORS

#14, Bhandari Square,

Opp.Coimbatore Stock Exchange, Trichy Road, Coimbatore

Tamil Nadu 641005

Phone: +91 9600890999, 0422 - 2319000 Email: sm@bullmennroyalenfield.com



#### INTERNSHIP COMPLETION CERTIFICATE

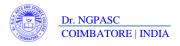
This is to certify that Mr.A.P.PRAVEEN (171BP036) doing B.Com (BPS)., in Dr.N.G.P ARTS AND SCIENCE COLLEGE, COIMBATORE has done his Internship Training in our concern from 6.5.2019 to 22.5.2019.

During this period we found him to be sincere in his attendance. We are certifying that his conduct and character have been found to be good.

For Bullmenn Motors

Manage

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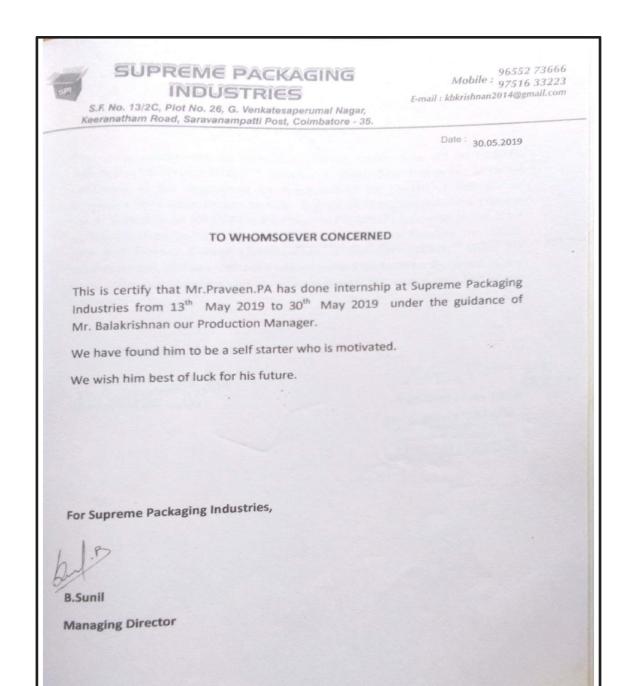
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



## UMW INDUSTRIES LIMITED

REGISTERED OFFICE & WORKS: S.F. No: 105, BHARATHI NAGAR, GANAPATHY, COIMBATORE - 641 006 PHONE: 2511268, 2511981, FAX: +91-422-2510478, E-MAIL: umwl@bsnl.in, Website: www.umwindustries.com

CIN: U29269TZ1980PLC000941

13.06.2019

#### **TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Ms. S.PRIYANKA Registration No.171BP038** 3<sup>rd</sup> year B.Com (BPS) of Dr.N.G.P. ARTS AND SCIENCE COLLEGE has done her project from 13.05.2019 to 31.05.2019 in our company.

She has understood every activities of our company. We wish her All the Best for in her career.

During her project period her conduct and character were good.

For UMW INDUSTRIES LIMITED

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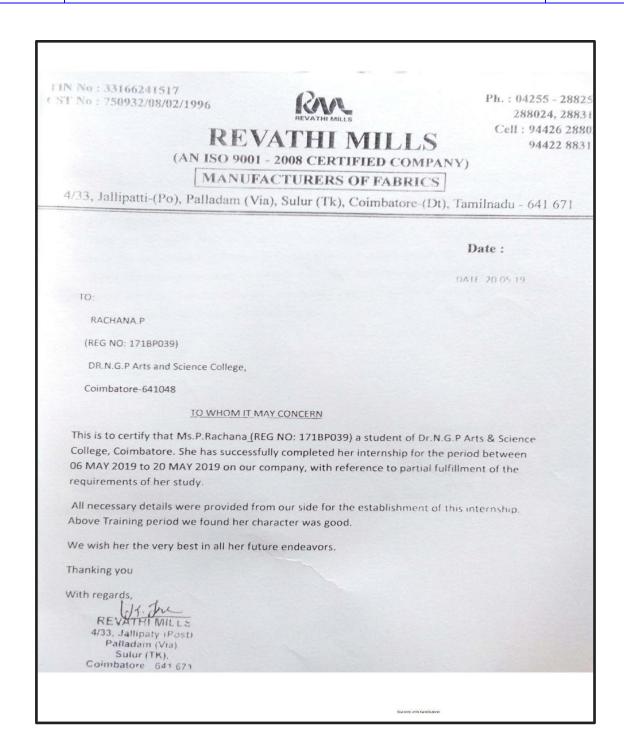
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







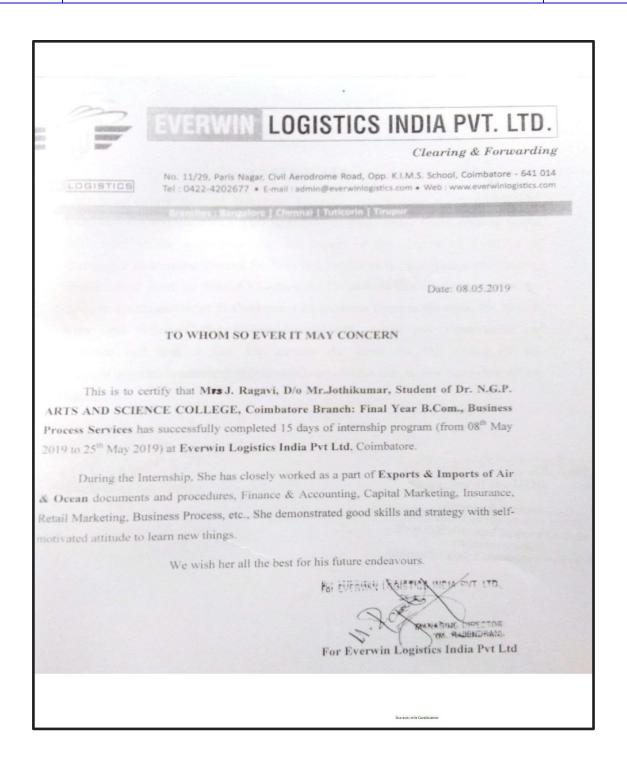
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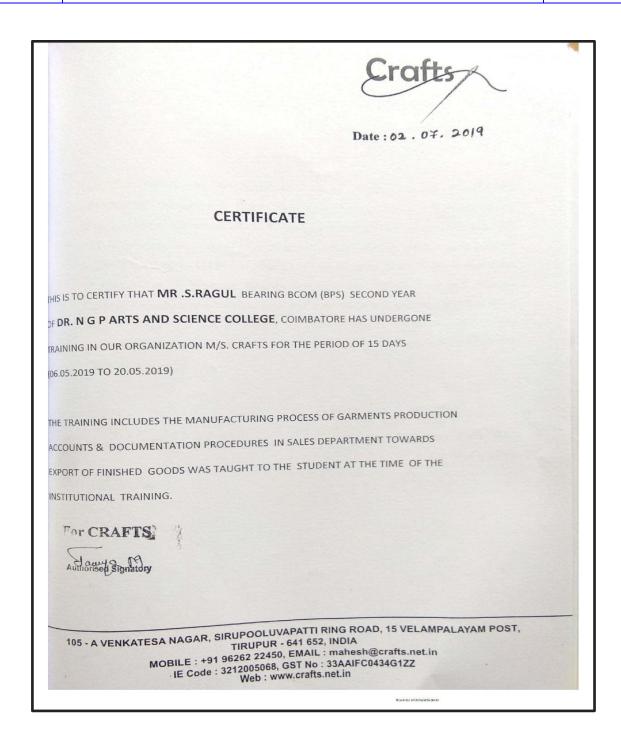
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# Had Best Financial Service

1st Floor, Sankar Nilayam, 139, NSA Nagar, (Near Club Melange), Perundurai Road, Erode - 638 011. Ph : 0424 - 4040422. Cell : 98652 - 67766 e-mail : hbfserode@yahoo.com

Date: 20.05.2019

To Mr. S.RAHULKRISHNAN, (Reg.No: 171BP042) Dr.N.G.P Arts and Science College, Coimbatore – 641048

#### To WHOM IT MAY CONCERN

This is to certify that Mr. S.RAHULKRISHNAN (Reg.No: 171BP042) a student of Dr.N.G.P Arts and Science College, Coimbatore. He has successfully completed his Internship for the period between 06.May.2019 to 20.May.2019 in our company with reference to partial fulfillment of the requirements of his study.

All necessary details were provided form our side for the establishment of this Internship. Above Training period we found his character was good.

We wish his very best in all her future endeavors.

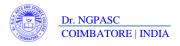
Thanking You,

With Regards,

PRUMACEVAR



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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



# **EVERWIN** LOGISTICS INDIA PVT. LTD.

Clearing & Forwarding

No. 11/29, Paris Nagar, Civil Aerodrome Road, Opp. K.I.M.S. School, Coimbatore - 641 01⁴ Tel : 0422-4202677 • E-mail : admin@everwinlogistics.com • Web : www.everwinlogistics.com

Branches: Bangalore | Chennai | Tuticorin | Tirupur

Date: 08.05.2019

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. CK Revanthakshai, S/o Mr.S. Chandrashekar, Student of Dr. N.G.P. ARTS AND SCIENCE COLLEGE, Coimbatore Branch: Final Year B.Com., Business Process Services has successfully completed 15 days of internship program (from 08<sup>th</sup> May 2019 to 25<sup>th</sup> May 2019) at Everwin Logistics India Pvt Ltd, Coimbatore.

During the Internship, He has closely worked as a part of Exports & Imports of Air & Ocean documents and procedures, Finance & Accounting, Capital Marketing, Insurance, Retail Marketing, Business Process, etc., He demonstrated good skills and strategy with self-motivated attitude to learn new things.

We wish him all the best for his future endeavours.

FOR EVERYAN LOGISTICS INDIA PVT. LTD.

For Everwin Logisties India Pvt Ltd

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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#### NEEDLE INDUSTRIES (INDIA) PRIVATE LIMITED

CIN:U27109TZ1949PTC008637

June 6, 2019

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. A. Robin Abishake, underwent training for a period from May 18, 2019 to June 6, 2019 in our Sales Department.

for NEEDLE INDUSTRIES (INDIA) PRIVATE LIMITED,

T.A. DEVAGNANAM, MANAGING DIRECTOR.

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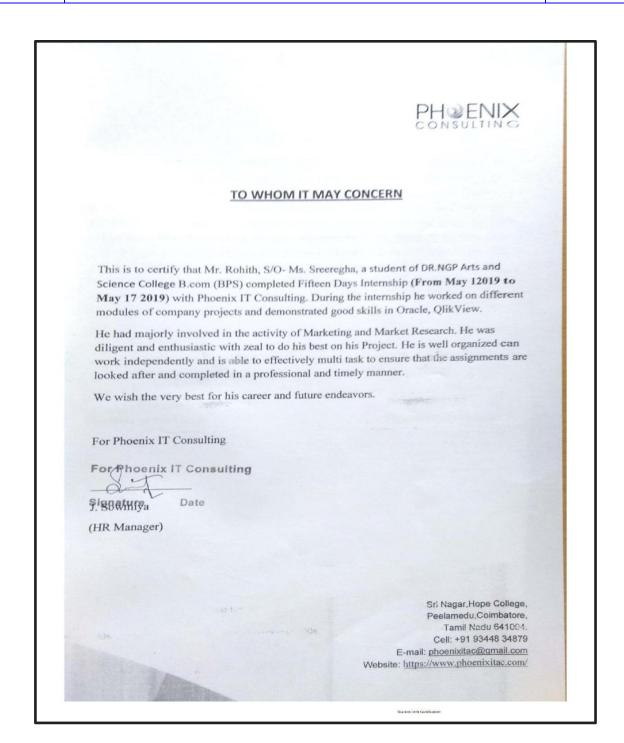
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







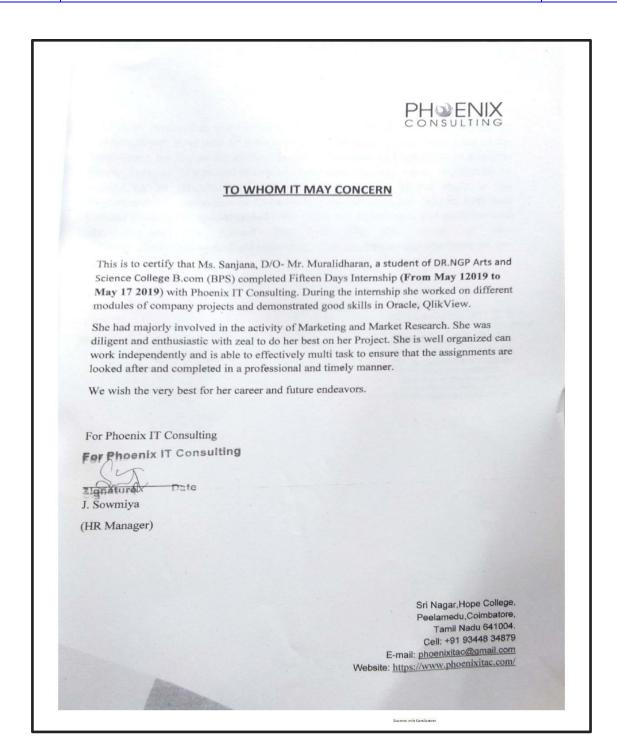
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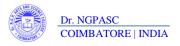
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



Date: May 18, 2019

### **Certificate of Experience**

This is to Certifiy that Ms. S. Sasmetha has done intership at Palies IT Services Pvt. Ltd., from May 2, 2019 to May 18,2019 on "Financial Tally Work from N.G.P College" under the guidance of Mr. Mahesh Kumar.

We have found her to be a self starter who is motivated, duty bound and Hard-Working.

She worked sincerely on her assigenments and her Performance was Per Excellence.

We wish her best of luck for her future.

For Palies IT Services

E. Sriram (HR Manager)

Palies IT Services: #15, Old No. 12, 2nd Layout, 2nd street Sivanada colony, tatabad Coimbatore, Tamil Nadu - 641 012

Phone: +91 9952382828 Mail: Sales@paliesoutllok.in Website: www.PaliesIT.com

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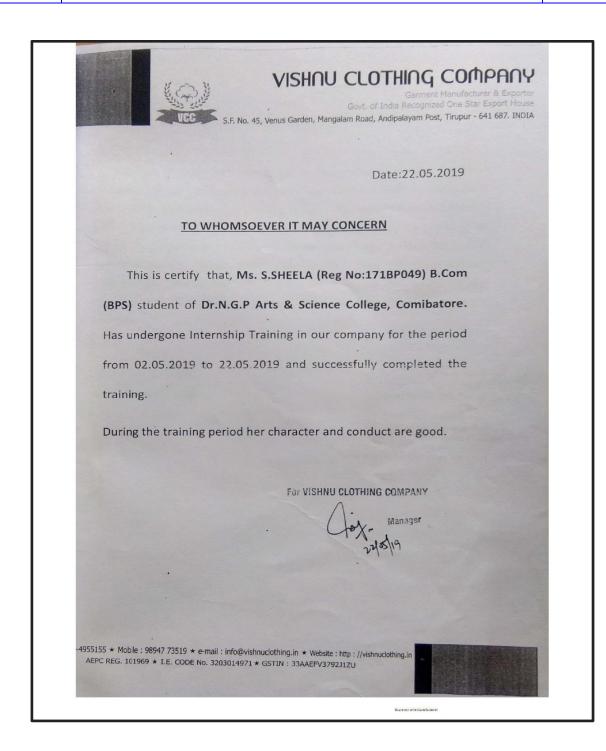
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle







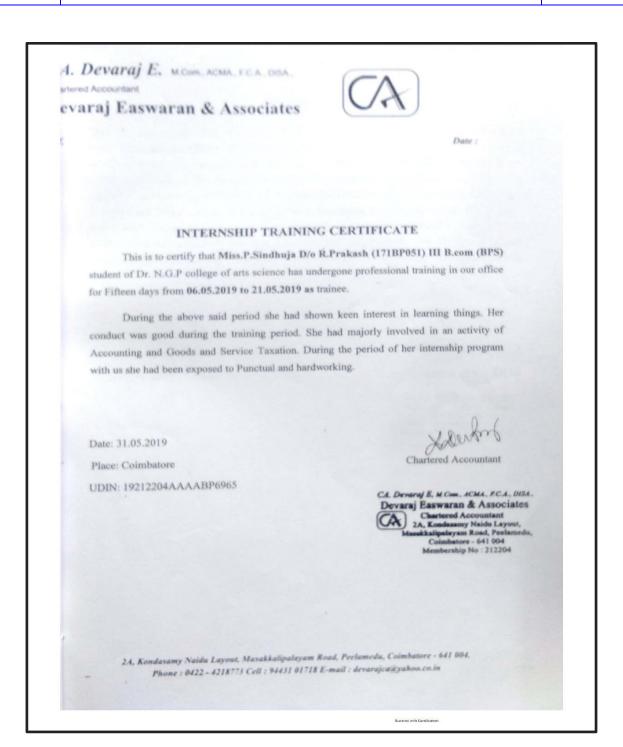
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### **MRF Tyres Ltd**

No.1226, Avinashi Rd, Near Lakshmi Mill Junction, P N Palayam West, Coimbatore641004, Tamil Nadu, Phone: 0422 224 1035

Date:17.05.2019

### TO WHOMSOEVER IT MAY CONCERN

This is certify that Miss. SHILPHA DEVI. M(Reg No:171BP050) B.COM (BPS) student of DR.N.G.P ARTS AND SCIENCE COLLEGE, Coimbatore. She has undergone Internship Training in our company for the period from 01.05.2019 to 17.05.2019 and successfully completed the training.

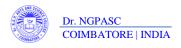
During the training period her character and conduct are good.

(T.VISHNU) Marketing Manager

MRF TYRES LTD. No.1226, Avinashi Rd.

Lakshmi Mill Junction, Coimbatore - 641 004, Tamil Nadu

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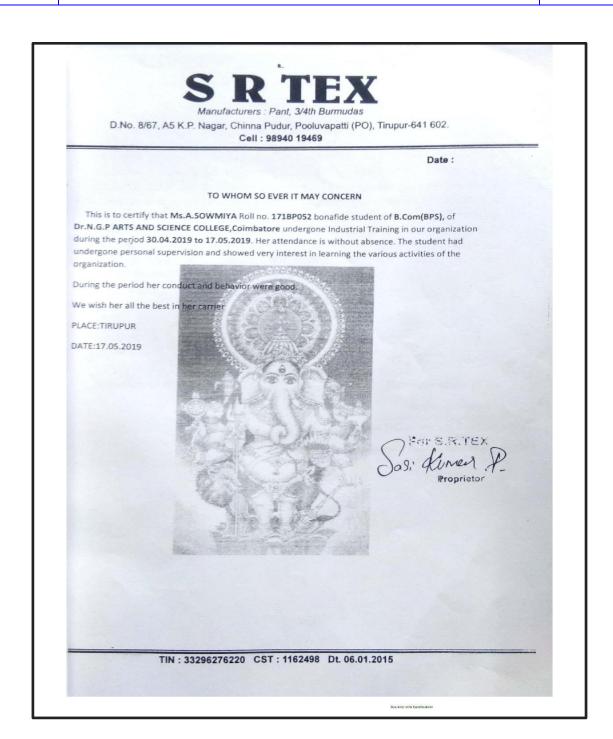
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### THILAGAR ASSOCIATES

Chartered Accountants

424 4020477 / 2257207 ode@tacas.org ww.tacas.org CA. M. Thilagar, B.Com., F.C.A., DISA

CA. D. Saravanan, B.Com., F.C.A

CA. S. Srinivasan, B.Com., EC.A., DISA

CA. M. Thennarasu, F.C.A., Grad. CMA

CA. K. Anandh, B.Com., F.C.A

CA. S. Ashokkumar, B.Com., A.C.A., Licentiate CS

CA. R. Arulselvam B.Com. A C A DISA

### INTERNSHIP TRAINING CERTIFICATE

This is to certify that Miss. V. Sowmiya D/o M.Venkatachalam (171BP053) III B.com (BPS) student of Dr. N.G.P college of arts science has undergone professional training in our office for Fifteen days from 06.05,2019 to 21.05.2019 as trainee.

During the above said period she had shown keen interest in learning things. Her conduct was good during the training period. She had majorly involved in an activity of Accounting and Goods and Service Taxation. During the period of her internship program with us she had been exposed to Punctual and hardworking.

Date: 05.06.2019

Place: Combatore

UDIN: 19236972AAAAAH9448

For THILAGAR ASSOCIATES
Chartered Accountants

FRN. No: 0065178 S. Nolle Kungar

CA. S. Ashok Kumar, B.Com., ACA., Partner

Partner M.No: 236972

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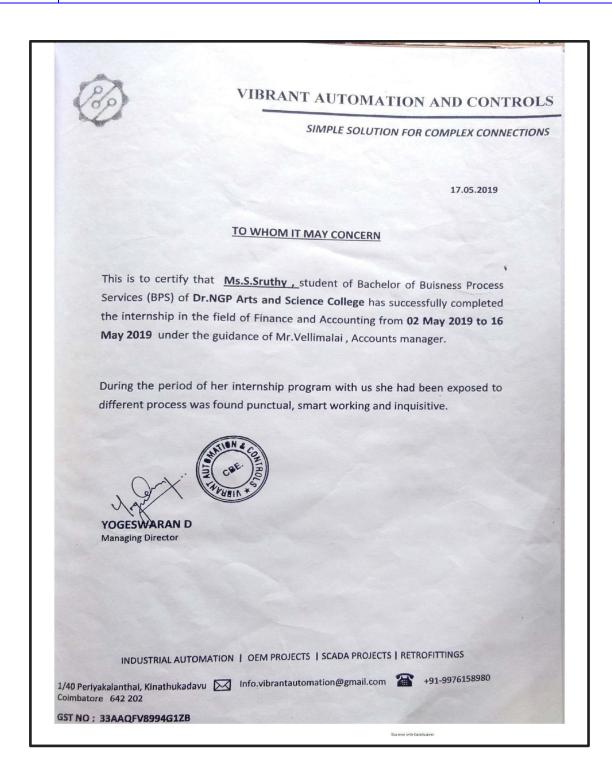
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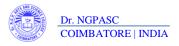
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NAAC 3<sup>rd</sup> Cycle







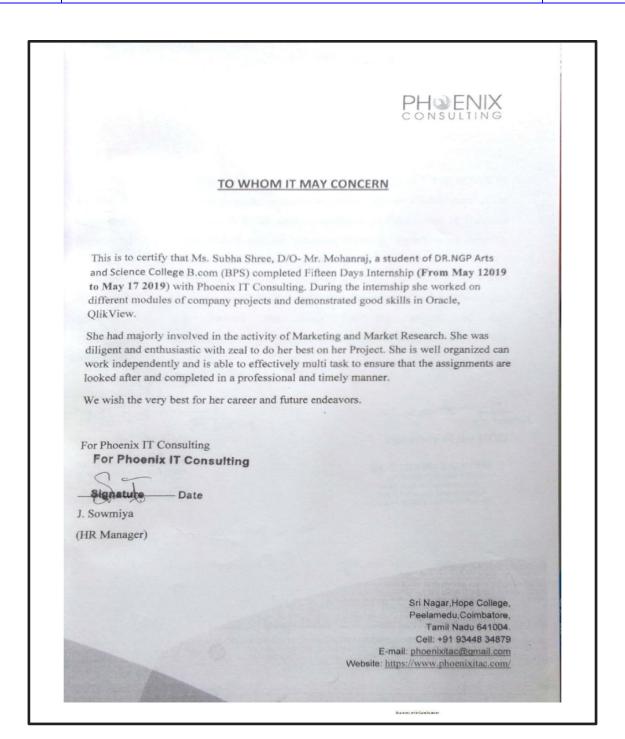
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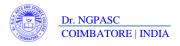
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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

ate Street HCL Services Statestreet HCL Services (India) Private Limited Worksite Chennal : ETA Technopark —Special Economic Zone, Upper Ground Floor of Blocks 3, No.33, Old Mahabalipuram Road, Navalur Village and Panchayat, Thiruporur Panchayat Union, Chengalpet Taluk, Yancheepuram Dist. Chennal —603 103, India Worksite Colmbatore : Module I-3, 2nd Floor, Tidel Park Colmbatore Limited (TPCL),
Civil Aerodrome Post, Colmbatore 841 014, India.

Registered Office : 806, Siddharth, 96, Nehru Place, New Delhi – 110 019, India. TO WHOMSOEVER IT MAY CONCERN This is to certify Ms. Supriya H.S. (Roll #: 171BP056) was engaged with State Street HCL services (India) Pvt Ltd for internship program from 1st May 2019 to 15th May 2019. During her tenure with us, we found her to be sincere and eager to learn the functions. With Kind Regards. For State Street HCL Services Human Resource





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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



CA. P. SHANMUGAM M.Com., M.Phil., FCA.,
CHARTERED ACCOUNTANT
Mobile: 96987 02000
E-mail: cashanmugamp@gmail.com

### **TOWHOM EVER IT MAY CONCERN**

This is to certify that, **Shri. S.SURESH (B.Com (BPS)** S/o. P. Sundaram, and he attended 15 days Internship training from 06-05-2019 to 20-05-2019 in my auditor office at Namakkal. His Internship activity includes preparation of accounting in Tally, Gst Registration, Gst Filling, Income Tax filling, Internal Audit work during the period.

He had majority involved in an activity of Accounting. During the period of his internship program with us he had been exposed to different process was found punctual hardworking, good observation, Goods skills. I wish him to success in his life and carrier.



CA. P.SHANMUGAM. M.Com, M.Phil.,F.C., Chartered Accountant 42, Rasi Complex, Paramathi Road, Namakkal - 637 001.

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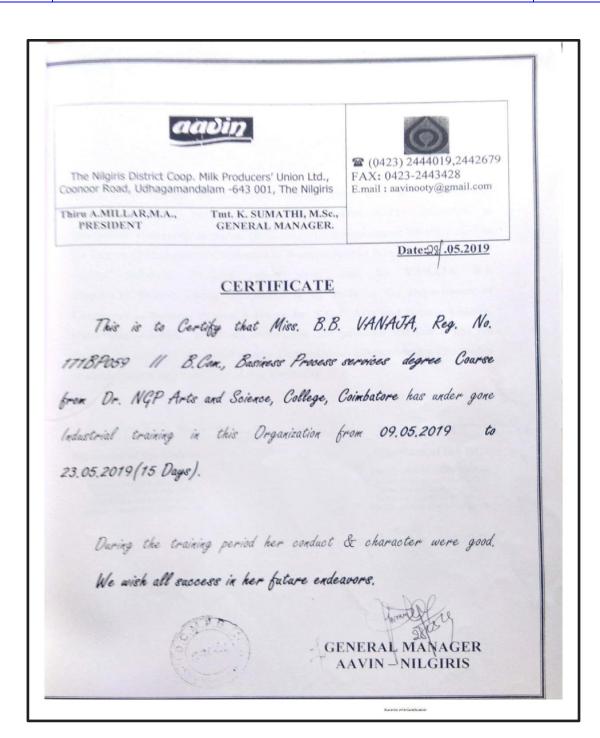
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC
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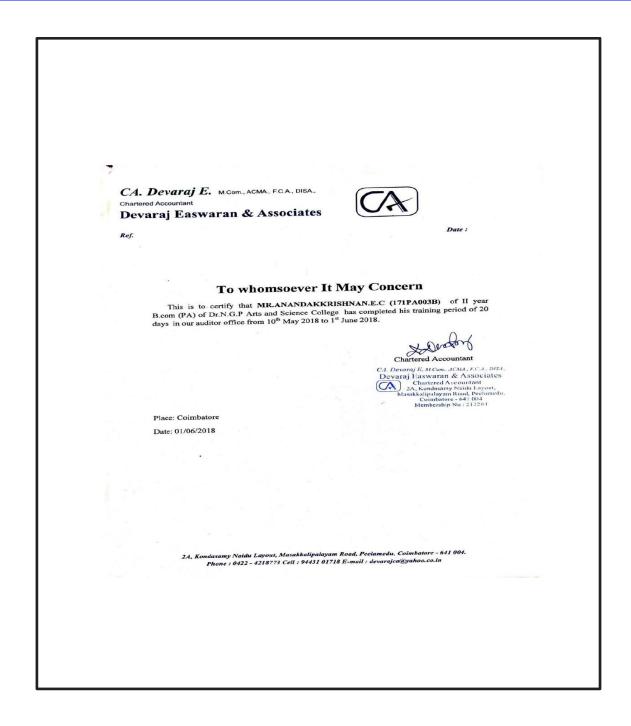
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

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NAAC 3<sup>rd</sup> Cycle







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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



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Res: 0422 - 2522233

D.No. 64, 65 - Bharathi Road, Ramnagar, Coimbatore - 641 009. E-mail: dhananjayan\_aca@yahoo.co.in aarjunarajandco@gmail.com

Date :

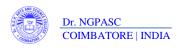
### TO WHOMSOEVER IT MAY CONCERN

This is to certify that ANUSUYA.A (171PA004) of B.Com(Professional Accounting) has undergone training in our office for the period from  $\mathbf{10}^{th}$  May 2018 to

Place : Coimbatore Date : 01/06/2018

For A. ARJUNARAJ & CO., Chartered Accountants

(CA A.ARJUNARAJ) M.NO: 018549





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA S. MURUGESAN B.Com., F.C.A., Chantered Accountant Ph : 04562-260927



207, Railway Feeder Road, SATTUR - 626 203. murugesan\_m29595@hotmail.com

DATE: 02 -06-2018

To

The Head of the Department, Department of Commerce with PA, Dr.N.G.P.Arts & Science College, Comibatore - 641048.

Sir.

 ${\bf Sub: Acknowledgement-Completion\ of\ Internship\ Training\ of\ your}$  Student in my office.

The bearer of this letter Selvan Mr.B.ArunNithish, (171PA005) I B.Com(PA), has successfully completed his Internship training in my office for 20 days (10.05.2018 to 01.06.2018). He was Sincere and Hard Working. Wish him all the best in all his future endeavors.

Thanking You,

Date: 02.06.2018



Yours faithfully,





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. S. KARTHIKESAVAN B.Com., M.B.A., F.C.A., DISA Chartered Accountant



01/06/2018

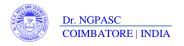
#### INTERNSHIP CERTIFICATE OF COMPLETION

This is to certify that Ms. **S. Banupriya**, Student of B. Com with Professional Accounting of Dr. N.G.P. Arts and Science College, Coimbatore 641 048 Roll No. **171PA006** of Commerce Department has successfully completed internship training programme under my guidance during the period of 20 days (i.e., from 10.05.2018 to 01.06.2018).

I wish her best wishes for all the future endeavours.

CA. S. KARTHIKESAVAN s.cm.assa.rca.pisa Chartered Accountant Membership No : 232884 34, Rayapandaram Street Avinashi Road. TIRUPUR - 641 602

"Thiruchitrambalam", 34, Rayapandaram Street, Avinashi Road, Tirupur - 641 602. Tel : 0421 - 2202481, 4330481 | Mobile : 98652 - 22079 | E-mail : skkfca@gmail.com





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. K. Chinnasamy B.Com. F CA., CHARTERED ACCOUNTANT



Dt:

1"-JUNE-2018

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that *BARKAVI S.A (171PA007)*, student of Dr.N.G.P.Arts And Science College (Autonomous), who is undergoing Bachelor of Commerce with Professional Accounting, has successfully completed his Summer Internship in the field of Auditing from 10<sup>th</sup>-May-2018 to 1<sup>st</sup>. June-2018.

During this period of internship program, she had been exposed to different kinds of Audit Training and Services.

Chartered Accountant

39 (1) STANES ROAD, 4th STREET, ODAKKADU, TIRUPUR-641 602. ②: 2249191, 2240191 / 98428-79191, 93633-79191, 93601-79192, 93601-79193, 93601-79194 e-mail: cachinnasamy@gmail.com, 98422-79191





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. VS. AADHAVANBALAJI B.Com., A.C.A., CHARTERED ACCOUNTANT



Cell: 99659 22333 Ph: 0422 4379973

Date :

To

Head of the Department

Department of Commerce with Professional Accounting,

DR. NGP Arts & Science College,

Coimbatore - 641048.

Respected Madam,

This is to certify that Mr.A.GNANASEKAR (171PA010) had completed the in-plant accounts training in my office from 10.05.2018 to 01.06.2018 and has undergone accounts training (Voucher Preparation, Sales, Purchase Bills Entry, Cash Book and Ledger Accounts Posting). I found his conduct was good during the training period.

Place: Coimbatore Date: 01.06.2018 VS.AADHAVANBALAJII CHARTEREDACCOUNTAN

No.209/13, K.S.G. Complex, Sasthri Road, Ramnagar, Coimbatore - 641 009. E-mail : caaadhavanbalaji@gmail.com

No.42, Old Cloth Bazaar Street, Tirupur - 641 604. Ph : 0421 - 4325267 E-mail ID : saravanakalai@gmail.com Cell : 98942 - 42520





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



CA. V. VIJAYARAGAVAN B.Com., F.C.A. CHARTERED ACCOUNTANT

No. 10, 11th Street, B.M.S. Colony, Gandhipuram, Coimbatore - 641 012. Phone : 2493247 Cell : 98422-32122 e-mail : v\_vijay\_54@yahoo.co.in

#### CERTIFICATE

This is to certify that Miss. S.GOKUL RAAM, (171PA011) Pre 2<sup>nd</sup> Year B.Com PA. Student of Dr.NGP Arts and science College (Autonomous), Coimbatore – 641 048. has under gone Institutional Training in our organization in the area of Accounting / Auditing for a period from 10/05/2018 to 01/06/2018. Her attitude of Learning is good.

COIMBATORE 01.06.2018

CA. V. VIJAYARAGAVAN

CHARTERED ACCOUNTANT

V. VIJAYARAGAVAN B.Com., F.C.A.,
Chartered Accountant
No: 10, 11th Street, B.M.S. Colony,
Gendhiparam, COIMBATORE - 641 012

Membership No: 0: 022679





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#### TO WHOM SO EVER IT MAY CONCERN

To,

DR.K.Vanaja,

HOD - Department of Commerce with PA,

DR.NGP Arts and Science College,

Coimbatore - 641608

Dear Madam,

This is to certify that Mr.D.Gokula Krishnan a student of Commerce with PA, Dr.N.G.P, Arts and Science College (Autonomous), Coimbatore has Successfully Completed Internship Training programme from 10.05,2018 to 01.06.2018 at our firm.

FOR VIMILIE & CO., Chartered Accountants CA Property BIRI MUTHUSAMY MEM Np: 231969 / FRN 014997S

Head Office: No. 1M, IInd Floor, Kanlappa Complex, Manickapuram Road, Palladam - 641 664. Phone: 04255-252050 Branch Office: No.41, First Floor, Ganga Nagar, First Street, Avinashi Road, Near Corporation Bank, Tirupur-641 602. Ph: 0421-4202400 mail: ca.vmmb@gmail.com





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle) Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in | Email: info@drngpasc.ac.in | Phone: +91-422-2369100

**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



#### SARAVANAN V & ASSOCIATES

Chartered Accountants

Proprietor : CA. V. SARAVANAN B.Com., FCA.,

Tmt. Dr. K. Vanaja Head of the Department Department of Commerce with PA Dr. N.G.P . Arts & Science College Coimbatore-641048

#### TRAINING CERTIFICATE

This is to Certify that Ms. GOKULAPRIYA V (Reg.No:171PA013) Studying B.Com (PA) in Dr. N.G.P.Arts & Science College, Coimbatore. Have been successfully completed her INTERNSHIP TRAINING in my office during the period 10.5.2018 to 01.06.2018.

DATE: 01.06.2018

PLACE: Tirupur



For SARAVANAN V & ASSOCIATES

GAVANANA FRN:0120465 FRN:0120465 V. Bernaumung avanan,B.Com.,FCA.,(Proprietor) dembership No: 221453

.42, Old Cloth Bazaar Street, Tirupur - 641 604. Ph : 0421 - 4325267 E-mail ID ; saravanakalal@gmail.com Cell : 98942 - 42520





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. K.Chidambaram B.Com., F.C.A., Ph : Off : 220327 Resi : 220572 66, Church road, Dharapuram - 638 656. Tiruppur Dist Date 0100 2018 TO WHOMSOEVER IT MAY CONCERN This is to certify that mr . GURU PRASATH M. V studying B.COM(P.A), at Dr.NGP Arts and Science College (Autonomous), Coimbatore had undergone training from 10.05.2018 to 01.06.2018 in my office as a part of his curriculum . During this period with me I found he is sincere , hardworking and good moral conduct . I wish all success for his future endeavors





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. VS. AADHAVANBALAJI B.Com., A.C.A., CHARTERED ACCOUNTANT



Ph : 0422 4379973

Date :

То

Head of the Department
Department of Commerce with Professional Accounting,
DR. NGP Arts & Science College,

Coimbatore - 641048.

Respected Madam,

This is to certify that Mr.B.HARIHARAN (171PA015) had completed the in-plant accounts training in my office from 10.05.2018 to 01.06.2018 and has undergone accounts training (Voucher Preparation, Sales, Purchase Bills Entry, Cash Book and Ledger Accounts Posting). I found his conduct was good during the training period.

Place: Coimbatore Date: 01.06.2018



No. 209/13, K.S.G. Complex, Sasthri Road, Ramnagar, Coimbatore - 641 009. E-mail: caaadhavanbalaji@gmail.com





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. K. Chinnasamy B.Com. F CA.,
CHARTERED ACCOUNTANT



Dt:

"-JUNE-2018

### TO WHOMSOEVER IT MAY CONCERN

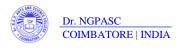
This is to certify that *HEMA.S* (171PA016), student of Dr.N.G.P.Arts And Science College (Autonomous), who is undergoing Bachelor of Commerce with Professional Accounting, has successfully completed his Summer Internship in the field of Auditing from 10th-May-2018 to 1th-June-2018.

During this period of internship program, she had been exposed to different kinds of Audit Training and Services.



39 (1) STANES ROAD, 4th STREET, ODAKKADU, TIRUPUR-641 602.

②: 2249191, 2240191 / 98428-79191, 93633-79191, 93601-79192, 93601-79193, 93601-7919-e-mail: cachinnasamy@gmail.com, 98422-79191





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

### CA.B.RAMESH, B.COM., FCA., **Chartered Accountant,** Membership No: 102708

11D-Kattur Road, IInd Floor, Jeeva Mandram, Pappanaickenpalayam, Coimbatore-641 037 Phone-0422-2241281



05.06.2018

Smt. Dr.K. Vanaja, Head of the Department Department of Commerce with PA Dr.N.G.P. Arts & Science Collage Coimbatore-641 048

### TRAINING CERTIFICATE

This to Certify that Selvi. D. Janani Sri ( 171PA017 ) student of B.Com(PA) of your Esteemed Collage has Undergone 20 days training in my office during the period 10.05.2018 to 01.06.2018 and during the period she learned and worked in the fields of Auditing, Tally Data Entry, GST Monthly Returns and CA. RAMESH, B.Com.FCA Income Tax Computation Work etc., I am wishing her all Success in her caree



**Chartered Accountant** M.No: 102708 -





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#### JHABAKH & COMPANY

CHARTERED ACCOUNTANTS E-mail: mukeshjhabakh@gmail.com +91 423 2232333 +91 94435 25801

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that R.JAYASHREE (171PA018) attended my office for institutional training from 10/05/2018 to 01/06/2018. During this period she was briefed and given on the job training on various jobs & topics.

Thanking You.





# 48, Pragati Building, Figure of '8' Road, Bedford, Coonoor, The Nilgiris, India - 643 101.





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



131/1, Sadayagoundanoor, Mylambadi Post, Bhavani Tk, Erode - 638 314. Mobile: 94866 87887 Email: saracaravi@gmail.com

Date: 02.06.2018

# CERTIFICATE FOR INTERNSHIP TRAINING PROGRAMME TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. JAYESH.S (171PA019) a student of commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore has successfully completed internship training programme from 10.05.2018 to 01.06.2018 at our firm.



CA. P.SARAVANAN M.Com.,FCA., Chartered Accountant Membership No.228151 131/1, Sadayagoundanoor, Mylambadi Post, Bhavani Tk, Erode Dt. 638 314.





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. VS. AADHAVANBALAJI B.Com., A.C.A., CHARTERED ACCOUNTANT



Cell: 99659 22332 Ph : 0422 4379973

Date:

To

Head of the Department
Department of Commerce with Professional Accounting,
DR. NGP Arts & Science College,
Coimbatore – 641048.

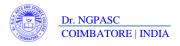
Respected Madam,

This is to certify that Mr.R.S.KARTHIC (171PA021) had completed the in-plant accounts training in my office from 10.05.2018 to 01.06.2018 and has undergone accounts training (Voucher Preparation, Sales, Purchase Bills Entry, Cash Book and Ledger Accounts Posting). I found his conduct was good during the training period.

Place: Coimbatore
Date: 01.06.2018

VS.AADHAVANBALAJI CHARTERED ACCOUNTANT

No.209/13, K.S.G. Complex, Sasthri Road, Ramnagar, Coimbatore - 641 009. E-mail : caaadhavanbalaji@gmail.com





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



New No.114, Old No.728, 1" Floor, Edayar Street, Colmbatore - 1. Phone: 0422-2390065 E-mail: patel\_office@yahoo.com

To

Tmt. Dr. K . Vanaja,
Head of the Department,
Department of Commerce with Professional Accounting,
Dr. NGP Arts and Science College,
Coimbatore - 641048

#### Respected.

This is to certify that your student Ms.S Keerthana (Reg no:171PA022) pursuing B.com (Professional Accounting) have successfully completed his INTERNSHIP TRAINING at my Office for a period of 20 days. The overall performance of keerthana was highly appreciable and satisfactory. I congratulate her for the successful completion of her training and wish him success for her career.

Thanking You!

Date: 02.06.2018 Place: Coimbatore





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### SPSM & CO., CHARTERED ACCOUNTANTS

Partners:
CA. P. SIVASUBRAMANI F.C.A.,
CA. M. SAKTHIVEL F.C.A.,

H.O.: No. 27, Sri Subbu Complex 2nd Floor, Room No. 3 Ram Nagar Main Road Tirupur - 641 602 Phone: 0421 - 4240058 Cell: 98949 - 68058 E.mail: sakthivelca2006@yahoo.com

Date: 01.06.2018
Place: Tiruppur.

To:

Head of Department,

Department of Commerce with PA,

Dr.N.G.P. Arts & Science College,

Coimbatore - 641048.

Sub: Internship Training – Keerthana.M and Subha.M (B.com)- reg.

We wish to inform you that your college Student doing B.Com (PA) ms. Keerthana.M (171PA023), Ms.Subha.M (171PA058) have attended our office for internship Training on Financial auditing from 10.05.2018 to 01.06.2018.

Thanking you.

Yours faithfully.

For SPSM & CO., Chartered Accountants (U. L. S. S. M. SAKTHIVEL F.C.A.,





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

### CA.B.RAMESH,B.COM.,FCA., Chartered Accountant, Membership No: 102708

11D-Kattur Road, IInd Floor, Jeeva Mandram, Pappanaickenpalayam, Coimbatore-641 037 Phone-0422-2241281



05.06.2018

To

Smt. Dr.K. Vanaja, Head of the Department Department of Commerce with PA Dr.N.G.P. Arts & Science Collage Coimbatore-641 048

### TRAINING CERTIFICATE

This to Certify that Selvi. S. Keerthika (171PA024) student of B.Com(PA) of your Esteemed Collage has Undergone 20 days training in my office during the period 10.05.2018 to 01.06.2018 and during the period she learned and worked in the fields of Auditing, Tally Data Entry, GST Monthly Returns and Income Tax Computation Work etc.,

I am wishing her all Success in her care



CA. RAMESH, B.Com.FCA Chartered Accountant M.No: 102708





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle) Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in | Email: info@drngpasc.ac.in | Phone: +91-422-2369100

**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



S ANNAMALAI & CO CHARTERED ACCOUNTANTS

131, Dr. Radhakrishnan Road, Near Karnataka Association Buildings, Tatabad, Coimbatore - 641 012.

#### INSTITUTIONAL TRAINING CERTIFICATE

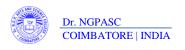
This is to certify that Miss. KIRTHIKA.B (171PA025), Student of Pre - II B.COM (Professional Accounting) of Dr.N.G.P. Arts and Science College, Coimbatore has been provided Institutional Training at our office for the period from 10.05.2018 to 01.06.2018 (18 Days) in the field of AUDITING AND TAX PROCEDURE & PRACTICE during her holidays. She has completed the

For S ANNAMALAI & CO..

s. Annamab

S. ANNAMALAI CHARTERED ACCOUNTANT

S ANNAMALA! & CO., Chartered Accountants 131, Dr. Radhalirishnan Road, Near Karnataka Association Buildings Tatabad, Coimbatore - 641 012. FRN: 008940S





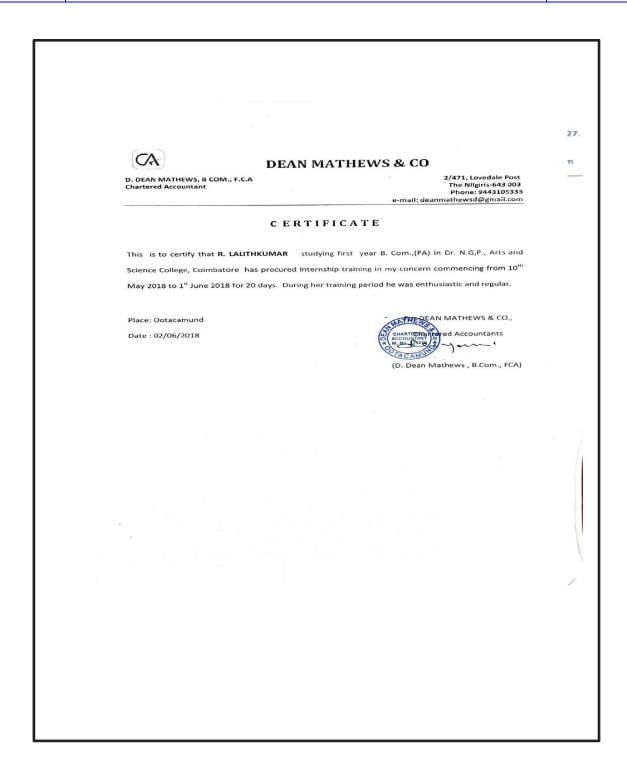
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

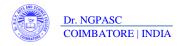
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

L.ASHOK AND ASSOCIATES





### **DEAN MATHEWS & CO**

D. DEAN MATHEWS, B COM., F.C.A Chartered Accountant 2/471, Lovedale Post The Nilgiris-643 003 Phone: 9443105333 e-mail: deanmathewsd@gmail.com

#### CERTIFICATE

This is to certify that **R. LAUTHKUMAR** studying first year B. Com.,(PA) in Dr. N.G,P., Arts and Science College, Coimbatore has procured Internship training in my concern commencing from 10<sup>th</sup> May 2018 to 1<sup>th</sup> June 2018 for 20 days. During her training period he was enthusiastic and regular.

Place: Ootacamund

Date: 02/06/2018

HARTER MATHEWS & CO.,

LA COUNTY OF THE PROPERTY OF THE PROPER



Dr. NGPASC

COIMBATORE | INDIA



(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. S. KARTHIKESAVAN B.Com., M.B.A., F.C.A., DISA Chartered Accountant



01/06/18

#### INTERNSHIP CERTIFICATE OF COMPLETION

This is to certify that Ms. S. Loga Priya, Student of B. Com with Professional Accounting of Dr. N.G.P. Arts and Science College, Coimbatore 641 048 Roll No. 171PA029 of Commerce Department has successfully completed internship training programme under my guidance during the period of 20 days (i.e., from 10.05.2018 to 01.06.2018).

I wish her best wishes for all the future endeavours.

CA. S. KARTHIKESAVAN S.C., MR. FOLDISM Chartered Accounters: Membership No: 232284 34, Rayspendaram Street Avinashi Road, TIRUPUR - 641 602

"Thiruchitrambalam", 34, Rayapandaram Street, Avinashi Road, Tirupur - 641 602. Tel : 0421 - 2202481, 4330481 | Mobile : 98652 - 22079 | E-mail : skkfca@gmail.com





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



S.S. Ravichandran B. Com., EC.A., DISA (ICAI)
Chartered Accountant

24, Ganga Nagar, 1st Street, Ilnd Floor, Avinashi Road, TIRUPUR - 641 602. Phone: 0421 - 2245276, 4333639

Date

To

The Head of the Department, Department of Commerce with PA, Dr.N.G.P Arts & Science College, Coimbatore-641048

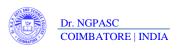
#### INTERNSHIP TRAINING CERTIFICATE

This is to certify that MR. P.K.LOKSANJIT(171PA030) Student of B.Com(PA) of your esteemed college has undergone 20 days internship training in my office between the period 10.05.2018 and 01.06.2018. During the period of his internship training, his conduct is good.

Date:02.06.2018 Place:Tirupur o. & Dehandran O. & Dehandran S.S.RAVICHANDRAN CHARTERED ACCOUNTANT



S.S. RAVICHANDRAN, B.Com.,E.C.A., CHARTERED ACCOUNTANT. 24. Ganga Nagar, 1st Street, 2nd Floor, TIRUPUR-641 602.





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle

Criterion III Metric 3.7.1



#### CHITHIRAI PANDIAN & CO.,

**Chartered Accountants** 

No.14/6M, Hospital Road, Sulur, Coimbatore-641 402.

Ph: 0422 2680315, 94425 80495, E.Mail :capandian1971@gmail.com, chithiraipandian@yahoo.co.in

Date:01.06.2018

To
The Principal,
Dr. NGP Arts and Science College
Coimbatore.

#### CERTIFICATE

This is to certify that Nambu Gayathri.M (Reg.No.171PA033) a student of NGP Arts and Science College, Coimbatore., has reported to Mr.T.Chithiraipandian, Proprietor, Chithiraipandian & Co., Chartered Accountants, No.14/6M, Hospital Road, Sulur, Coimbatore-641402 from 10.05.2018 to do a project in partial fulfillment of her internship training programme.

T.CHITHIRAIPANDIAN PROPRIETOR

No.14/6 M, Hospital Road, Sulur, Coimbatore-641402

Phone No: 0422-2680315

E-mail ID: capandian1971@gmail.com

M. Namby GayaThim (Nambu Gayathri.M) Signature of the Student





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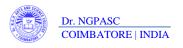
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

R.RAJASEKAR B.Com., F.C.A.,

**Chartered Accountant** 

H2, 2nd Floor, KLR Complex, 624 Cross Cut Road, Coimbatore - 641 012

Phone: 0422 - 2230651, 4210651 e-mail: rajasekarh1@yahoo.co.in

Mobile : 98422 30651

#### CERTIFICATE

This is to certify that Ms.S.Nandhini B.Com(P.A)., pre 2<sup>rd</sup> year student of Dr. NGP Arts and Science College, Coimbatore has undergone Internship in our Office 10.05.2018 to 01.06.2018.

We found her sincere in her application to the training assignment. We wish success in all her endeavors.

Coimbatore

01.06.2018

R.RAJASEKAR, B.Com., F.C.A., Chartered Accountant Membership No:028404





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



CA VELUSAMY V

B.Com., MBA., ACA., CHARTERED ACCOUNTANT

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. Nisha M (171PA036) persuing her 1<sup>rd</sup> year B.com P.A in NGP college of Arts & Science, Coimbatore has completed her professional training in our firm from 08.05.2018 31.05.2018 (Both days inclusive).



Place: Somanur

No.468 5th Street, Senthil Nagar, Shanthi Sizing Road, Somanur, Coimbatore - 641 668.

Mob : 96555 15589 e-mail : cavvs2000@gmail.com





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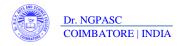
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

This is to certify that Mr.K.K.NITHISH (Roll no:-171PA038) of B.Com (Professional Accounting), has undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>th</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co.,  Date: 01-06-2018 Place:Tirupur.  CAR. HRYGGU ACAM.  MIG. 535508	This is to certify that Mr.K.K.NITHISH (Roll no:-171PA038) of B.Com (Professional Accounting), has undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co., Date: 01-06-2018	This is to certify that Mr.K.K.NITHISH (Roll undergone training in our office for the period period to the period	no:-171PA038) of B.Com (Profe from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.	AMAHESWARI & Co.,
undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co., Date: 01-06-2018	undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>th</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co.,  Date: 01-06-2018	undergone training in our office for the period  Date: 01-06-2018	from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.	AMAHESWARI & Co.,
undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co., Date: 01-06-2018	undergone training in our office for the period from 10 <sup>th</sup> May to 1 <sup>th</sup> June 2018.  For THIYAGU UMAMAHESWARI & Co.,  Date: 01-06-2018	undergone training in our office for the period  Date: 01-06-2018	from 10 <sup>th</sup> May to 1 <sup>st</sup> June 2018.	AMAHESWARI & Co.,
Date: 01-06-2018	Date: 01-06-2018		For THIYAGU UMA	R. Frimmes
Date: 01-06-2018	Date: 01-06-2018		For THIYAGU UM	R. Frimmes
Date: 01-06-2018	Date: 01-06-2018		For THIYAGU UMA	R. Francisco
		Place:Tirupur.		
				M.No : 538305





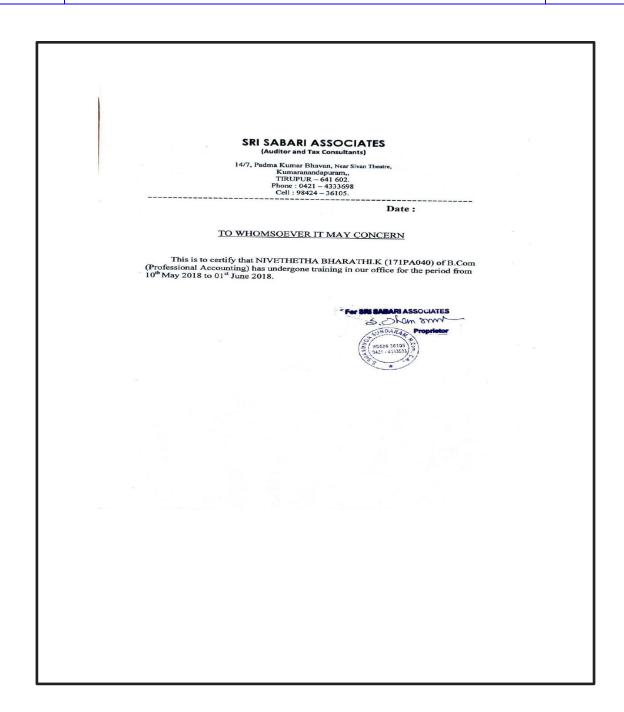
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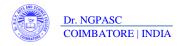
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

K.S.G.SUBRAMANYAM & CO.,

Il Floor, United Shopping Complex



#### SARAVANAN V & ASSOCIATES

Chartered Accountants
Proprietor: CA. V. SARAVANAN B.Com., FCA.,

To

Tmt. Dr. K. Vanaja
Head of the Department
Department of Commerce with PA
Dr. N. G. P. Arts & Science College
Coimbatore-641048

#### TRAINING CERTIFICATE

This is to Certify that Ms. PAVITHRA S (Reg.No:171PA042) Studying B. Com (PA) in Dr. N. G. P. Arts & Science College, Coimbatore. Have been successfully completed her INTERNSHIP TRAINING in my office during the period 10.05.2018 to 01.06.2018.

DATE: 01.06.2018 PLACE: Tirupur



For SARAVANAN V & ASSOCIATES
Chartered Accountants

CA.V.Saravanan,B.Com.,FCA.,(Proprietor)
Membership No: 221453

No.42, Old Cloth Bazaar Street, Tirupur - 641 604. Ph : 0421 - 4325267 E-mail ID : saravanakalai@gmail.com Cell : 98942 - 42520





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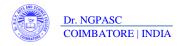
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

	SRI SABARI ASSOCIATES (Auditor and Tax Consultants)
,	14/7, Padma Kumar Bhavan, Near Sivan Theatre, Kumaranandapuram, TIRUPUR – 641 602. Phone: 0421 – 4333698 Cell: 98424 – 36105.
	Date :
	TO WHOMSOEVER IT MAY CONCERN
Account 2018 to	This is to certify that PAVITHRA.S (171PA043) of B.Com (Professiona ting) has undergone training in our office for the period from 10 <sup>th</sup> May 01 <sup>st</sup> June 2018.
	For SRI SABARI ASSOCIATES
	98424 36105 S (9824 36105 S (9421 - 4333603 S
	To a state of the





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle) Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in | Email: info@drngpasc.ac.in | Phone: +91-422-2369100

**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

R.RAJASEKAR B.Com., F.C.A.,

**Chartered Accountant** 

H2, 2nd Floor, KLR Complex, 624 Cross Cut Road, Coimbatore - 641 012
Phone : 0422 - 2230651, 4210651
e-mail : rajasekarh1@yahoo.co.in

Mobile: 98422 30651

#### CERTIFICATE

This is to certify that Ms.V.Pooja B.Com(P.A)., pre 2<sup>nd</sup> year student of Dr. NGP Arts and Science College, Coimbatore has undergone Internship in our Office 10.05.2018 to 01.06.2018.

We found her sincere in her application to the training assignment. We wish success in all her endeavors.

Coimbatore

01.06.2018

R.RAJASEKAR, B.Com., F.C.A., Chartered Accountant Membership No:028404





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

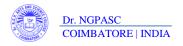
Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. I.NIZAM, M.Com., FCA., 7&8, "Abirami Complex" /ea, Abirami Complex Elango Nagar, 1<sup>st</sup> Street, Sathy Road, Gandhipuram Colmbatore – 641012. Ph. 98422 26993, 0422-2524525 e-mail: nizamfca@yahoo.com Chartered Accountant Membership.No.203947 To Tmt. Dr. K.Vanaja Head of the Department Department of Commerce with PA Dr.N.G.P. Arts & Science College Coimbatore-641048 TRAINING CERTIFICATE This is to Certify that Ms.PREETI JAISWAL A. (171PA046) Student of B.com(PA) of your Esteemed College has undergone 20 days Training in my office during the period 10.05.2018-01.06.2018 and during the period she learned and worked in the fields of Auditing, Tally Data Entry, GST Monthly Returns and Income Tax Computation Work etc., I wish her all Success in her career. Date: 01.06.2018 Place: Coimbatore 01/06/2018 CA.I.Nizam, M.Com.,FCA Chartered Accountant CAI. Nizam, M.Com., FCA... Chartered Accountant Membership No. 203947 7 & 8, Elango Nagar 1st Street. Saihy Road, Gendhipuram, COMBATORE - 12





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

· ·	R. MUGUNTHAN & Charte	SASSOCIATES, cred Accountants
	TO WHOMSOEVER IT MAY CON	ICERN
	We hereby certify that Mr. N. PROMOTH, Son of Mr. D.No. 12/82, Kannerimukku Village and Post, Kotagiri, The Nilgiri his Second Year B. Com (PA) course and holding the Regist M/s. Dr. NGP ARTS AND SCIENCE COLLEGE, KALAPATTI RC undergone a training programme in our concern as part of his contently days from 10,05,2018 to 01,06,2018. During the said training in topics as enclosed	s 643217 who is pursuing ration No. 171PAO47 at DAD, COIMBATORE, has urriculum for a period of
	During the training period his character and other activities we all success in future.	re good and we wish him
1	R. MUGUNTHAN AND ASSOCAITES Chartered Accountants  Chartered Accountants  THAN)  R. MUGUNTHAN, F.C.A., M.No. 203368  111, Vasantine Buildings, Commercial Road, Coty, The Hilligiris - 643 001.	
	The money	
	Unity Shopping Areade, Kotagiri Post, The Nilgins - 643217 111. Commercial Road, Octavamund, The Nilgins - 643001	■: 04266 - 272758 ■:0423-2442004 ■:94435-84548





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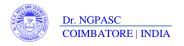
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

\_\_\_\_

SIVAMANI & CO

P. DEVARAJ, B.Com., FCA
Chartered Accountant

Office: 0422 - 2231559 Mobile: 94433 65637

cadevaraj@gmail.com E-mail : pcdevassociates@gmail.com

IInd Floor, Bhoopal Complex, 403-B, Cross Cut Road, Colmbatore - 641 012, Tamilnadu

#### CERTIFICATE

This is to certify that Ms.Renupriya. S (Reg. No:171PA050) pursing I B.Com (PA) at Dr.NGP College of Arts and Science, Kallapatti, Coimbatore – 641 048 has done her Internship Training in our office from 10th May 2018 to 01st June 2018.

The original work done by her during her above Internship Training period is good.

Place : Coimbatore
Date : 01.06.2018

P. DEVARAJ. B.Com., F.C.A.
Chartered Accountant
2nd Floor, Bhoopal Comples
403-8, Cross Cut Road
Colmbatore - 641 012
Membership No: 20816-2





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle

Criterion III Metric 3.7.1

L.ASHOK AND ASSOCIATES CHARTERED ACCOUNTANTS

CA

#### CERTIFICATE

This is to certify that Mr. ROSHAN. N [Reg No: 171PA051] student of II B.Com (Professional Accounting) of Dr. N.G.P. COLLEGE OF ARTS AND SCIENCE, Coimbatore – 641 048 has undergone practical training at my office for the period from 10 -05-2018 to 01.06.2018.

The student was provided practical training in auditing the accounts of Trading Concerns and further the student was provided practical training in preparing Final accounts of business entities, Clubs and Societies during his summer vacation. He has completed the training to our satisfaction.

Place: Joan Cottage Coonoor – 01

Date : 11.06.2018

for L. ASHOK & ASSOCIATES Chartered Accountants

CA. L. ASHOKKUMAR F.C.A., Proprietor Membership No. 028197



Office Joan Cottage Upper Mount Road Coonoor – 643 101 Nilgiris Tamil Nadu

Telephone +91 423 2230009 2232627 2232658 Mobile; +91 94430326 e-Mail ld ashok.kumar.l@icai.org cashflowenr@dataone.in





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



E7, Thirumagal Complex, Sastha Nagar, Near Lakshmi Vilas Bank, Gandhi Managar, Peelamedu, Coimbalore - 641 004, Phone: 0422 - 2510866 Cell: 98434 66865, 99434 66866 Email: cakserthiga@gmail.com

Coimbatore

01/06/2018,

#### CERTIFICATE

This is to certificate that, Mr. K. SABARI AJAY, S/o. S. Karthikeyan, a bonafide student of First year B.Com. (PA) of Dr. N.G.P. Arts and Science College, Kalapatti Road, Coimbatore — 641048, has successfully completed his 20 days Internship Training in my office between 10/05/2018 and 01/06/2018. During the training period his activities are good and innovative.



For KEERTHIGA & ASSOCIATE





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



# 129-C,FIRST FLOOR,T.V.SAMY ROAD(WEST). R.S. PURAM, COIMBATORE - 641 002, TAMIL NADU, INDIA Mob: +91, 9952441236, +91 9942551236 E-mail:cakumaravel@gmail.com

#### TO WHOM MAY SOEVER IT MAY CONCERN

This is to certify that Selvi. SARANYA.B (Roll No. 171PA054), B.Com(PA)., First Year Student of Dr. N.G.P Arts & Science College, P.Puliampatti has undergone internship training in my office from 10.05.2018 to 01.06.2018. During the training period her conduct was good.

Place: Coimbatore

Date: 02.06.2018

SINNEAVE & C. S. FRN: 014438S

Chartered Accountant

8. Francisco 12018

S.P. KUMARAVEL, B.Com., A.C.A., CHARTERED ACCOUNTANT, No. 129-C, First Floor, T.V.Samy Road(W), R.S. Puram, Colimbatore - 641 002.





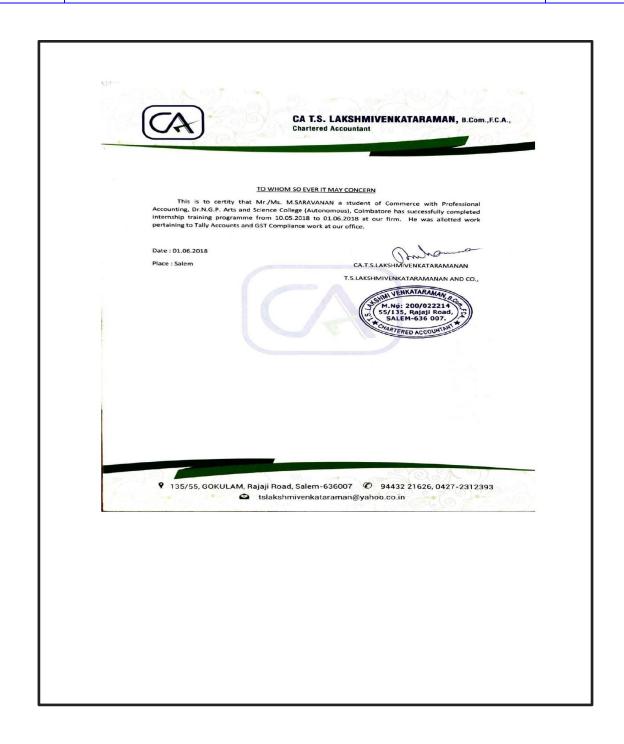
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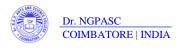
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



No. 35, AXIS BANK Bullding 1st Floor, Avinashi Road, Anupparpalayam, Tirupur - 641 654. E-mall : krish.harish99@gmail.com Cell : 9 81486 88180, 95144 47773

05.06.2018

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that SUGANTH JACOB.J REG NO: 171PA059 B.Com (Professional Accounting)- DR.N.G.P. ARTS AND SCIENCE COLLEGE, Coimbatore. He has completed Intership Training of 20 Days from 10-05-2018 to 01-06-2018.

His conduct during the period of Intership Training was good.

(This certificate is issued for Educational Purpose only)

HARISH.C CHARTERED ACCOUNTANT [M.NO. 234910]

C. HARISH M.Com., A.C.A., CHARTERED ACCOUNTANT BLNo: 234010 to. 35, AUS BAMIC Building 1st Floor, Actuable Road, Anadysampalayam, TRUPPUR - 041 664.





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



Second Floor, 43 Grey Town Coimbatore - 641 018 Ph : 0422 - 2397283 (0), 2566474 (R Mobile : 94436-84053 E-mail : kkchellappan.fca@gmail.com

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr.Thangaraj V S (171PA060) studying B.Com with Professional Accounting at Dr.N.G.P. Arts and Science College had undergone practical training in our office from 10.05.2018 to 01.06.2018 for a period of 20 days.

His progress was satisfactory.

Place: Coimbatore. Date: 02.06.2018.

le Meura SIGNATURE







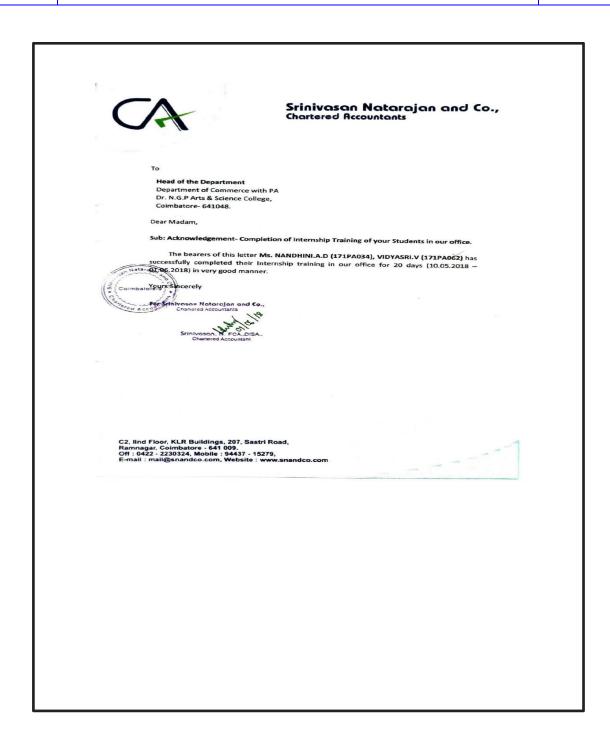
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Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







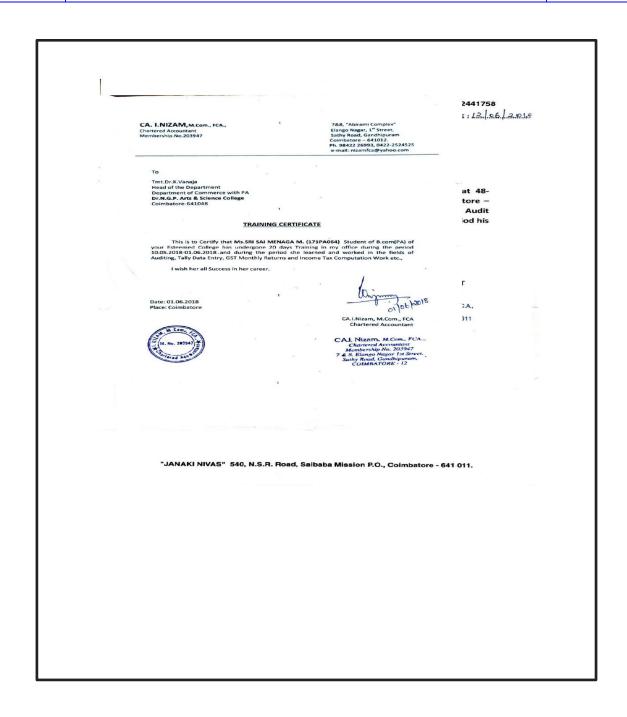
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







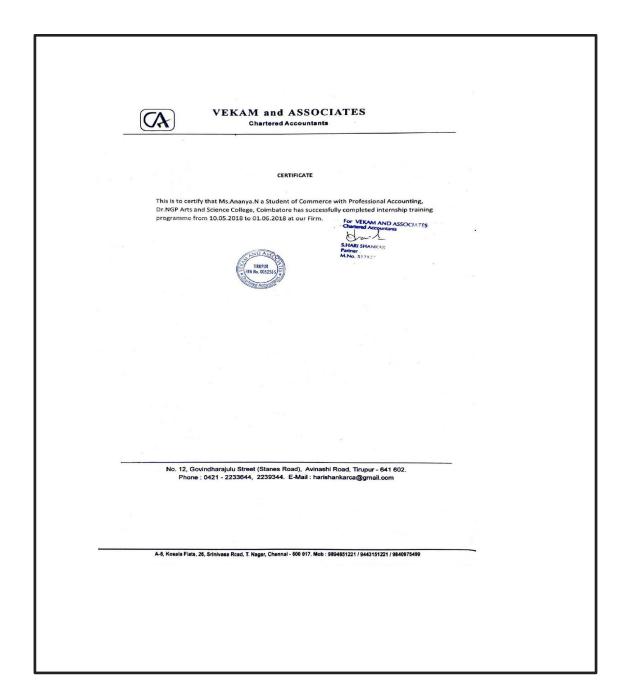
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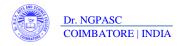
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

R. LOGANATHAN B.Com., F.C.A., ISA (ICAI)

CHARTERED ACCOUNTANT

Phone: 04296 274788 Mobile: 98422 87689 95788 90000 95789 90000

Site No. 34, Ganapathy Nagar, Near M.S. Vidyalaya Matric Hr.Sec. School, NH By-Pass Road, Avanashi - 641 654.

5.6.2018

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.V.BHARATH KUMAR (171PA107) a student of First Year B.Com (PA), in Dr.N.G.P.Arts and Science College (Autonomous), Coimbatore has completed 20 days (10<sup>th</sup> May 2018 to 1<sup>th</sup> June 2018) internship program at my office. During the period, his conduct was found good.

I wish him every success in life.

R. LOGANATHAN, B.Com,FCA.,DISA (ICA)., CHARTERED ACCOUNTANT 12/42, Cheyur Road, Avanashi - 641 654 Membership No. 205126





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#### G. M. MANOHARAN

B.Com., FCA, Grad. CWA, DISA (ICAI), L.L.B., M.A.(YHE), M.D. (ACU) CHARTERED ACCOUNTANT No.10-A, Anna Nagar, K.P.N. Colony 3rd Street Extn., TIPUPUB - R41 601, Ø : 4352448

DATE: 01/06/2018

#### TO WHOM SO EVER IT MAY CONCERN

This is certify that Mrs. DEVIKA.P a student of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College(Autonomous), Coimbatore has successfully completed her internship training programme assigned at our Auditor Office CA.G.M.MANOHARAN, TIRUPUR during the period of 10<sup>th</sup> MAY 2018 to 01<sup>th</sup> JUNE 2018.

During the training period her conduct and character was good.







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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

#### Balaji & Thulasiraman

CHARTERED ACCOUNTANTS



04.06.2018 Tirupur

#### INTERNSHIP CERTIFICATE OF COMPLETION

This is to certify that Mr. S.DISHATH KUMAR, student of B.Com with Professional Accounting of Dr.N.G.P. Arts and Science College, Coimbatore 641048 Roll No 171PA112 of Commerce Department has successfully completed Internship Training Program under our guidance during the period of 20 days (from 10/05/2018 to 01/05/2018)





No. 14, Anna Nagar Extn., K.P.N. Colony 3rd Street, TIRUPUR - 641 601.
Phone: 0421 - 4244010 Mobile No.: 73730 74010 E-mail: balthulca@gmail.com





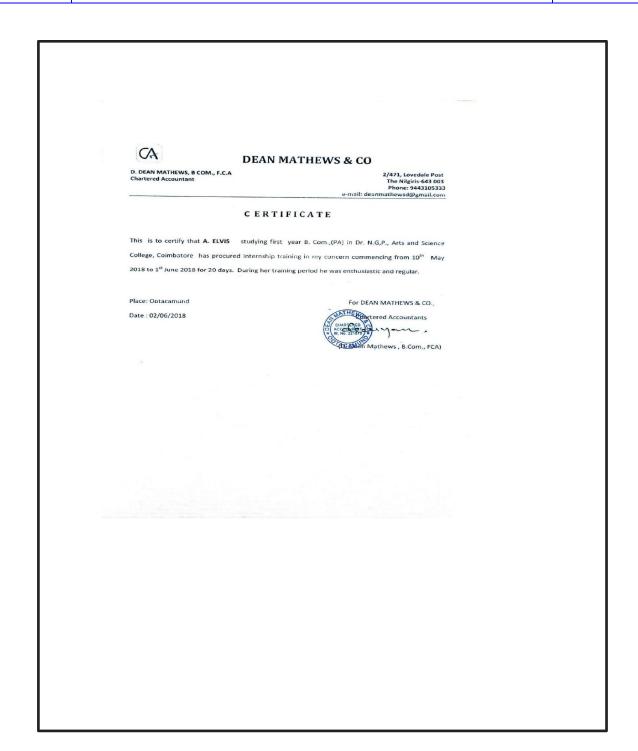
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle





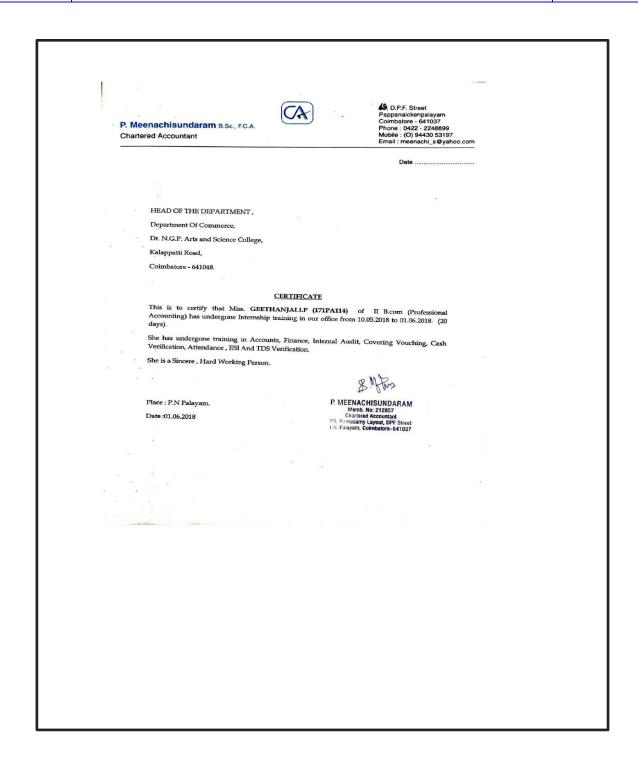
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



Respected Sir,

Coimbatore-048

N.G.P. Arts and science College,

This is to certify that Mr.T.GNANAVEL (171PA115), No. 15, SASTHRI NAGAR, 1<sup>ST</sup>
STREET, PITCHAMPALAYAM, TIRUPUR 641602 doing his pre Second year B.Com (PA). He has
completed his 20 days institutional training. During the training period his character was
good.

CANNANDAGOPAL B.com, FCA, DISA, (CAI)
CHAPTERED ACCOUNTANT
No.157, 10 Fore Road, Sharin Theate North 1st Street,
Kumarananthapuram, Truçur -641 5;
Mobile -96443 21567, 16-021 - 425-567
Email: nandapopaln-26/gmail.com
Membership No.1221 425





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

T.SENTHILKUMAR, B.com. F.C.A., Chartered Accountant

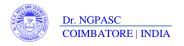
240/8, Subarna Complex, Iyer Hospital Bus Stop, Sundharapuram, Coimbatore - 641 024. Phone: 0422-4279139 Email :casaiwin@gmail.com

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. HARI HARAN. S student of commerce with professional accounting, DR.N.G.P ARTS AND SCIENCE COLLEGE (AUTONOMOUS), COIMBATORE has successfully completed Internship Training Programme from 10.05.2018 to 01.06.2018 at our firm.

Coimbatore 04/06/2018 SENTHIL KUMAR, B. COM., F.C.A.
HARTERED ACCOUNTANT
GARS, Soberna Gemples, fyor Neopital Bus Stop,
Jundar appuram. (Post), Celmbetora - 641 024
M.M. No. 219316

"Mecheri Manor", No.2, S.R. Iyer Layout, Near All India Radio, Trichy Road, Coimbatore - 64 [045, E.mail: seksheel2013@gmzil.com, seksheel@eth.net Tel: +91-422- 2317757 Fax: +91-422-4390677





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**NAAC** 3rd Cycle

**Criterion III Metric 3.7.1** 

NAGARAJ SURIANARAYANAN & CO.

©: 0422-2393 225 0422-4208 225



#### G.K.P. ASSOCIATES CHARTERED ACCOUNTANTS

10, Doctor's Colony Dr. Radhakrishnan Road, Gandhipuram, Coimbatore - 641 012. Phone : 0422-2529121 Tele Fax : 0422-2529995, E-mail : gkpfca@gmail.com

Partners:

G. Ganansumdaram B.Sc., F.C.A., DISA.,

T. Kumaaravelu M.Com., F.C.A.,

R. Padmanalbam M.Com., M.Phil., MBA., F.C.A., DISA.,

V. Jayanthi B.Com., F.C.A., DISA.,

P. Sakunthial M.Com., F.C.A.,

Namagirl Srinivasan B.Sc., F.C.A.,

S. Duraimurthy B.A., F.C.A.,

V. Padmanabhan B.Com., F.C.A.,

V. Padmanabhan B.Com., F.C.A.,

#### TO WHOM SO EVER IT MAY CONCERN

I do hereby certify that Mr. P. INDARAJITH (171PA119) a student of B.Com (Professional Accounting) from Dr. N.G.P. Arts and Science College, Coimbatore, Residing at 9/8 Thulasithaasar Street Bharathipuram Pallapalayam Post Sulur -641103, had undergone training with our organization as a Audit trainee from 10.05.2018 to 01.06.2018 (Twenty days ). He is sincere and attentive. He learned MS excel and word. He was trained and worked in GST portal.

His conduct was good during the internship period.

Wish him all success in his future endeavours

Place : Coimbatore : 01.06.2018

V.JAYANTHI, B.Com, R.C.A., Partner M.No.2: G.K.P.ASSOCIATES

#### **BRANCHES AT**





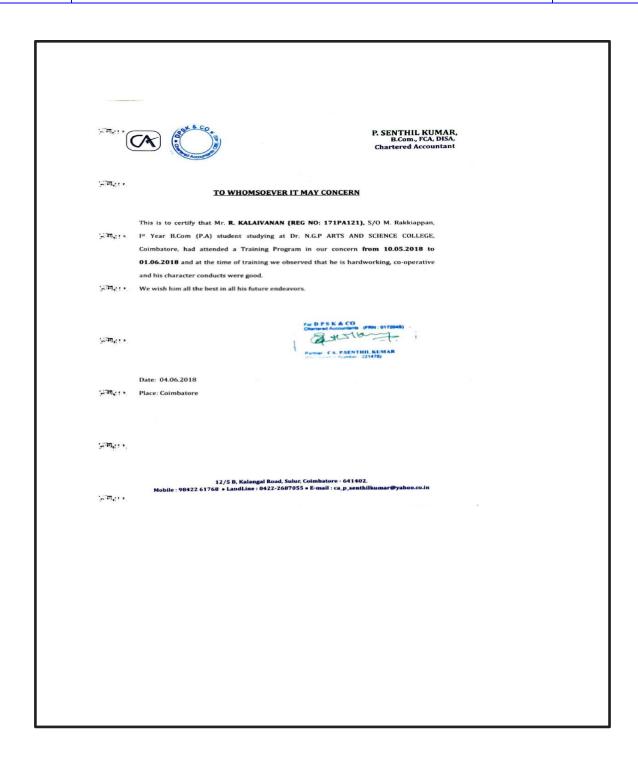
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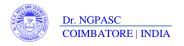
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. S. KARTHIKESAVAN B.Com., M.B.A., F.C.A., DISA Chartered Accountant



01/06/18

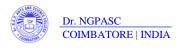
#### INTERNSHIP CERTIFICATE OF COMPLETION

This is to certify that Ms. L. Karunambigal, Student of B. Com with Professional Accounting of Dr. N.G.P. Arts and Science College, Colmbatore 641 048 Roll No. 171PA122 of Commerce Department has successfully completed internship training programme under my guidance during the period of 20 days (i.e., from 10.05,2018 to 01.06,2018).

I wish her best wishes for all the future endeavours.

CA. S. KARTHIKESAMAN and the Chartered Accountant Membership No : 232884
34. Rayapandaram Street
Avinashi Rout 1 1021918

"Thiruchitrambalam", 34, Rayapandaram Street, Avinashi Road, Tirupur - 641 602, Tel : 0421 - 2202481, 4330481 | Mobile : 98652 - 22079 | E-mail : skkfca@gmail.com





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

K.R. JAGADEES CHANDRAN B.A. F.C.A.

Chartered Accountant

K.P. ILLAM, 129-B, MAIN ROAD, ANNUR - 641 653.

98422 63868

98428 63868 Ph: 04254 - 262222 (O)

Date 416118

#### CERTIFICATE

This is to certify that Selvi. S. KEERTHANA(171pa124) student of Dr.NGP ARTS & SCIENCE COLLEGE doing First year B.COM (PA) had undergone an internship training in my office during 10<sup>th</sup> May 2018 to 1<sup>st</sup> June 2018

She gathered basic knowledge in Individual, Firm audits and income tax preparation, Pan card application fill up, Tax payment modes etc.,

K.R.JAGADEES CHANDRAN, B.A., FCA., CHARTERED ACCOUNTANT 46 B - K.P ILLAM, Main Road, Annur - 641653. Mambership No. 203181





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

CA. M.P. PANNEERSELVAN B.Sc., FCA., PARTNER



V E K A M AND ASSOCIATES
CHARTERED ACCOUNTAINTS
H.O.: 9/1, B.K.R. Nagar, Sathy Road
Gandhipuram, Colmbatore - 641 012
Ph: 0422 - 252 7210, 252 7220, 252 3856

01.06.2018

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. M.KUNGUMADEVI (Regn.No.171PA128) a student of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore has successfully completed Internship Training programme from 10.05.2018 to 01.06.2018 at our office. She has completed the training to our satisfaction.



Branches : Erode, Tirupur





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



GNST & ASSOCIATES

Chartered Accountants

No.1, "Palant Illiam", Ind Street, Sivanandha Colony, Coimbatore - 641012.

Phone: 0422-4374756, Mobile No.90037424, Mail ID -gnstassociates@gmail
GSTIN: 33AALFG6797P12F PAN: AALFG6797P Firm No.: 0141235

May 30, 2018

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. Madhumitha S B. Com -II Year from Dr. N.G.Parts and Science College has completed her Internship with us.

Her Internship term was between May 10, 2018 and May 30, 2018. As part of this program, she was placed with the Accounts Department and involved with various assignments.

During this Internship, she was found to be punctual, positive and performance oriented.

We wish her success for all her future endeavors.







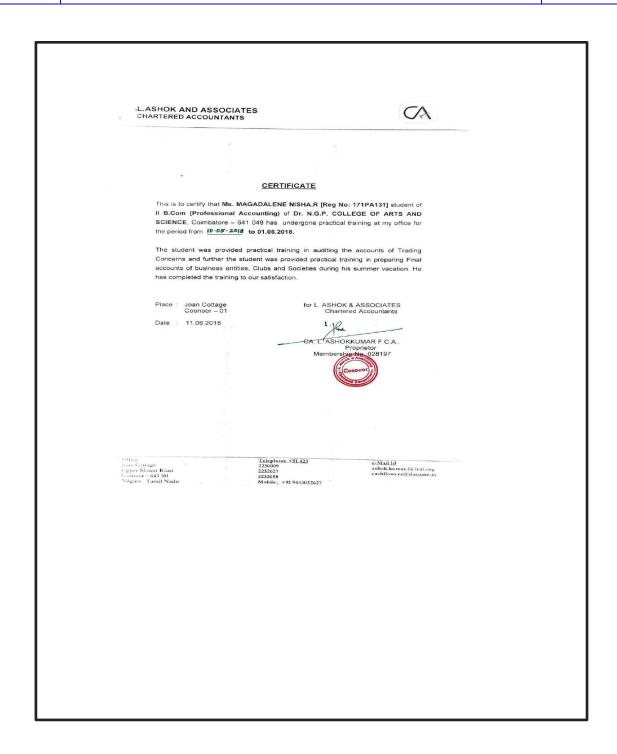
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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

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# GNST & ASSOCIATES Chartered Accountants

C



No.1, "Palani Illam", Ilnd Street, Sivanandha Colony, Coimbatore – 641012.
Phone: 0422-4374756, Mobile No.9003374244, Mail ID - gnstassociates@gmail.com
GSTIN: 33AALFG6797P1ZF PAN: AALFG6797P Firm No.: 014123S

June 7, 2018

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. Medha M, B. Com (PA) -II Year from DR. N.G.P. ARTS & SCIENCE has completed her Internship with us.

Her Internship term was between May 11, 2018 and May 31, 2018. As part of this program, she was placed with the Accounts Department and involved with various assignments.

During this Internship, she was found to be punctual, positive and performance oriented.

We wish her success for all her future endeavors.







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

T. SENTHIL F.C.A CHARTERED ACCOUNTANT

No. 14/51A, 2nd Street, VOC Nagar South, Kumar Nagar, Gandhi Nagar Post, TIRUPUR - 641 603. PHONE: 0421-2203874 FAX: 0421-2235030

Ref

Date: 2.6. 2019

To Whom so ever it may concern

I hereby certify that Ms.S.MENAKA (171PA134) who is B.Com(Professional Accounting) student of Dr.N.G.P. ARTS AND SCIENCE COLLEGE has completed a period of 20 days Internship Training from 10.05.2018 to 01.06.2018.

/Chartered Accountant/





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



#15, Chinna Subbannan Street, K.K.Pudur, Coimbatore - 641 038 Phone: +91 422 2451329

TO WHOM SO EVER IT MAY CONCERN

#### CERTIFICATE

This is to certify that Ms. A. Monisha a student of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore has successfully completed internship training programme from 10/05/2018 to 01/06/2018 at our office.

CA C.A. VENKATESAN, B.Com., B.L.M.B.A., ACS., F.C.A. CHARTERD ACCOUNTANT 15, CHINNA SUBBANNAN PTREET ELF. PUDIC, COMBANGE 641038
M.No: 19753





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

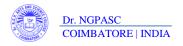
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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

SANDEEP SURE CHARTERED ACCOU. Email : gandeepsureshi@gmai Mobile No. 9894255631	NTANTS
TO WHOMSOEVER IT MA	
This is to certify that Miss. M.Nandhini (171 Arts and Science College (Autonomous), who of Commerce with Professional Accounting her Summer Internship in the field of Auditito 01 st of June 2018.	is undergoing the Bachelor has successfully completed
During this period of internship program, different kinds of Audit Training and Services	she had been exposed to
	For Serry of Execution & Co Serry of Accountants Fern No: 0182318 Sandeep Suresh, B.Com.ACA., Proprietor M.No: 225985
No: 27 C/1, Second Floor, Sundaram Brothe Ramanathapuram, Coimbatore	ers Layout, Trichy Road, — 641045.
	_





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



# 129-C,FIRST FLOOR,T.V.SAMY ROAD(WEST). R.S. PURAM. COIMBATORE - 641 002, TAMIL NADU. INDIA Mob : +91, 995244 1236, +91, 994255 1236 E-mail:cakumaravel@gmail.com

### TO WHOM MAY SOEVER IT MAY CONCERN

This is to certify that Selvi. P. RAMYA (Roll No. 171PA149), B.Com(PA), First Year Student of Dr. N.G.P Arts & Science College, Coimbatore has undergone internship training in my office from 10.05.2018 to 01.06.2018. During the training period her conduct was good.

Place: Coimbatore

Date: 02.06.2018

| ARAVo| & C| S| PRN: 0144365 | S| PRN: 0144365

Chartered Accountant

8) Franch 1 2018

S.P. KUMARAVEL, B.Com., A.C.A., CHARTERED ACCOUNTANT, No. 129-C, First Floor, T.V.Samy Road(W), R.S. Puram, Coimbatore - 641 002. M. No. 237494





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

T.SENTHILKUMAR, B.com., F.C.A., Chartered Accountant

240/8, Subarna Complex, lyer Hospital Bus Stop, Sundharapuram, Coimbatore – 641 024. Phone: 0422-4279139 Email: casaiwin@gmail.com

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. NITHIN ARUN RAJ.J student of commerce with professional accounting, DR.N.G.P ARTS AND SCIENCE COLLEGE (AUTONOMOUS), COIMBATORE has successfully completed Internship Training Programme from 10.05.2018 to 01.06.2018 at our firm.

Coimbatore 04/06/2018 SENTISE, KLIMARI, B. COM., F.C.A. SAMTERED ACCOUNTANT
68. Behavio Complex, for Hospital Bus Stop, undergourne (Post), Combators - 641 624





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



### VEKAM and ASSOCIATES

**Chartered Accountants** 

#### TO WHOMSOEVER IT MAY CONCERN

This is to Certify Miss.V.Nithya, a student of Commerce with Professional Accounting, Dr.NGP Arts & Science College, Coimbatore has successfully completed her internship Training Programme From 10.05.2018 to 01.06.2018 at our office.

For VEKAM AND ASSOCIATE Chartered Accountance

Place: Tirupur,

Date: 01/06/2018.

No. 12, Goyindharajulu Street (Stanes Road), Avinashi Road, Tirupur - 641 602. Phone : 0421 - 2233644, 2239344. E-Mail : harishankarca@gmail.com





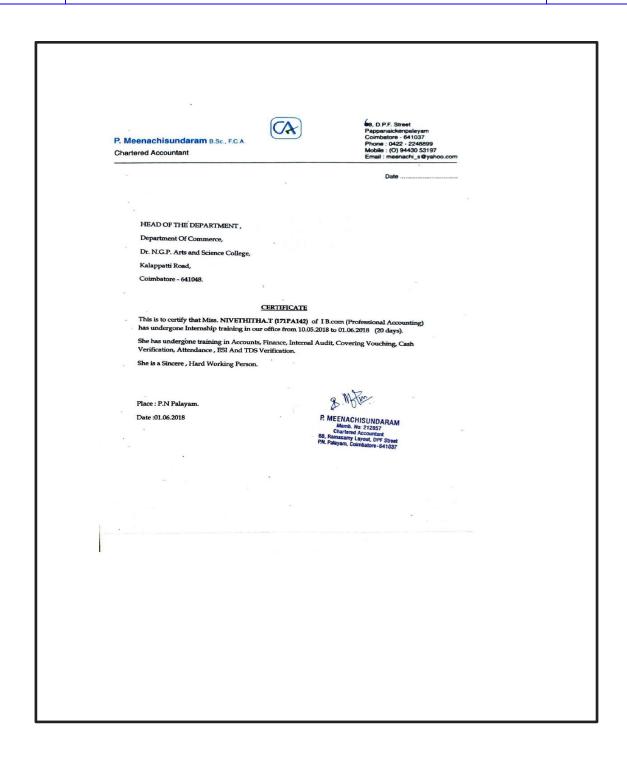
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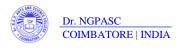
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

K.R. JAGADEES CHANDRAN B.A. F.C.A., Chartered Accountant

K.P. ILLAM, 129-B, MAIN ROAD, ANNUR - 641 653.

98422 63868 Cell : 98428 63868

Ph: 04254 - 262222 (O)

Date Alche

#### CERTIFICATE

This is to certify that Selvi. S. Pavithra(171pa143) student of Dr.NGP ARTS & SCIENCE COLLEGE doing First year B.COM (PA) had undergone an internship training in my office during 10<sup>th</sup> May 2018 to 1<sup>st</sup> June 2018

She gathered basic knowledge in Individual, Firm audits and income tax preparation, Pan Card application fill up, Tax payment modes etc.,

a. R. Susser

K.R.JAGADEES CHANDRAN, B.A., FCA., CHARTERED ACCOUNTANT 46 B - K.P. ILLAM, Main Road, Annur - 641659. Membership No. 203181





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

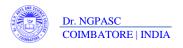
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

R. Krishnamurthi & Co.,

Chartered Accountants

1st Floor, S.K. Complex, 29/13, Avinashi Road, SITRA, Coimbatore - 841 014 T : 0422 4391033 | M : 98422 30123 | E : rkrishnandco@gmail.com

02.06.2018

#### CERTIFICATE

This is to certify that Miss. M.Pavithra I B.Com (PA) of Dr. N.G.P Arts and Science College had attended internship training in our office for a period of 15 days from 10.05.2018 to 01.06.2018. During the period of Training she had been trained in the area of Maintaining Accounts in Tally ERP.9 and preparing Trial Balance and final accounts from the Books of Accounts of various business organizations.

For R. Krishnamurthi & Co.
Charlered Accounters
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BRANCHES: 1533, Trichy Road, (Richmond Hospital Compound), Coimbatore - 641 618, Tel: 0422 - 2300787 Ilnd Floor, Kovai Towers, Balasundaram Road, Coimbatore - 641 018. Tel: 0422 - 2248595.





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**NAAC** 3rd Cycle

**Criterion III Metric 3.7.1** 



#### G.K.P. ASSOCIATES CHARTERED ACCOUNTANTS

10, Doctor's Colony Dr. Radhakrishnan Road, Gandhipuram, Coimbatore - 641 012. Phone : 0422-2529121 Tele Fax: 0422-2529995, E-mail: gkpfca@gmail.com

Partners:
P. Gonansundaram B.S., F.CA., DISA.,
T. Kumaaravelu M.Com., F.CA.,
R. Padmanabhan M.Com., M.Foli, MBA., F.CA., DISA.,
V. Jayanthi B.Gom., F.CA., DISA.,
P. Sakunthala M.Com., F.CA.,
S. Dogitametrik, B.A., F.CA.,
S. Dogitametrik, B.A., F.CA.,
V. Padmanabhan B.Com., F.CA.,

### TO WHOM SO EVER IT MAY CONCERN

I do hereby certify that Mr. T.P. PRABIN (171PA146) a student of B.Com (Professional Accounting) from Dr. N.G.P. Arts and Science College, Coimbatore, Residing at 5/351, Pazhai house, Near VKC Bakery, Kangeyampalayam, Sulur, Coimbatore-641401, had undergone training with our organization as an Audit trainee from 10.05.2018 to 01.06.2018 (Twenty days ). He is sincere and attentive. He learned MS excel and word. He was trained and worked in GST portal.

His conduct was good during the internship period.

Wish him all success in his future endeavours.

Place : Coimbatore Date 01.06.2018



G.K.P.ASSOCIATES

NGALORE Innovative Flora Apartment, 201, 'B' Block, Thiammaiah Garden, Cox Town, Bangalore - 560005
CHENNAI 156, Flat D, 94th Street, 15th Sector, KK. Nagar, Chennai - 600 078, Ph: 0091 44 24726814
MADURAI Door No. 278, let Floro, Perumalmaistry Street, Madurai - 625 001, Ph: 0542 - 4381682.E-mail: siva.duralmurthy@yahoo.com
TIRUPUR SF No. 588/1-8, Ammapalayam, Anuparpalayam Post, Tirupur - 641 652. Cell: 98428 47274, E-mail: vp500fca@gmail.com





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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



K. KUMARASWAMY & CO., CHARTERED ACCOUNTANT

#### TO WHOMESOEVERIT MAY CONCERN

This is to certify that Mr. RAGUL S (ROLL NO 171PA148) who is pursuing his B.Com (PA) at Dr.N.G.P. Arts and Science College, Coimbatore has completed 20 days (10/05/2018 to 01/06/2018) of Professional Training for the academic year 2017-18 in my office.

Place : Coimbatore

Date : 02/06/2018

Signature

K. KUMARASWAMY, B. Com., F.C.A. CHARTERED ACCOUNTANT Old No.31, New No. 63 Bharathi Park 2nd Cross Saibaba Colony, Coimbatore - 841 043 MEM No. 203247

Old No. 31 | New No. 63 | Bharathi Park 2nd Cross | Saibaba Colony | Coimbatore - 641 043

Phone: 0422 - 2444410, 2454410, 4365666, 90950 77099 | GST No.: 33ADWPK1007A1Z3 | E-mail: kandcofca@gmail.com





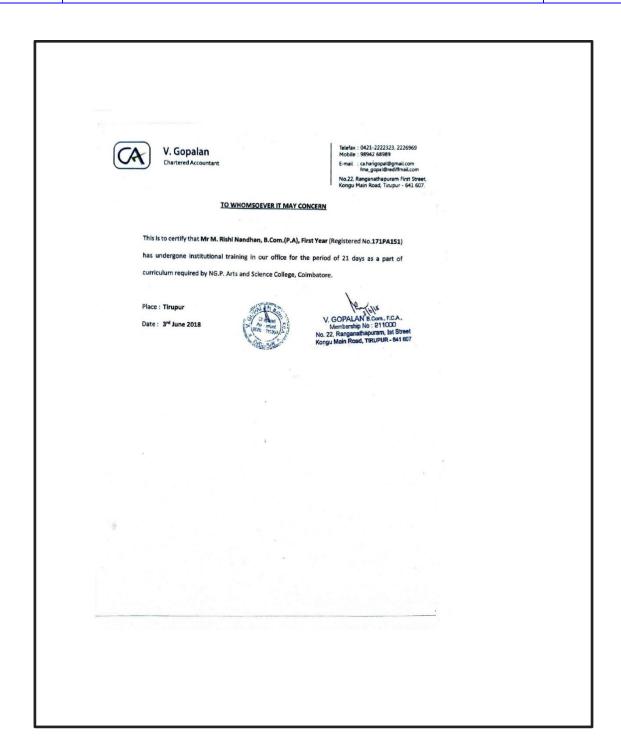
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

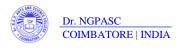
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



CA VELUSAMY V B.Com., MBA., ACA., CHARTERED ACCOUNTANT

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms M Rohini(171PA152) persuing her 1<sup>rd</sup> year B.com P.A in NGP college of Arts & Science, Coimbatore has completed her professional training in our firm from 10.05.2018 to 31.05.2018 (Both days inclusive).



Place: Somanur Date: 31.05.2018

No.468 5th Street, Senthil Nagar, Shanthi Sizing Road, Somanur, Coimbatore - 641 668.

Mob : 96555 15589 e-mail : cavvs2000@gmail.com





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC
3rd Cycle

Criterion III Metric 3.7.1

### **SEKHAR & SHEELA**

**Chartered Accountants** 

Certificate No: 03/2018-19 02<sup>nd</sup> June 2018

#### CERTIFICATE FOR INTERNSHIP TRAINING PROGRAMME

This is to certify that Ms. A.Sandhya (171PA154) studying Bachelor of Commerce (Professional Accounting) - 'B' in Dr.NGP Arts & Science College has underwent her Internship training Programme from 14<sup>th</sup> May 2018 to 1<sup>th</sup> June 2018 for a period of 14 working days in our firm as a part of her UG Studies during the academic year 2017-18.

We found her to be sincere, hardworking, dedicated and result oriented and always has an inclination to learning. She worked well as part of the team during her tenure with the firm.

We take this opportunity to wish her all the best in her future.

For Sekhar & Sheela, Chartered Accountants ICAI FRN: 008088S

Karthik Venkataraman Partner Membership No: 238635

> "Mecheri Manor", No.2, S.R.lyer Layout, Near All India Radio, Trichy Road, Coimbatore - 641045. E.mail : seksheel2013@gmail.com, seksheel@eth.net Tel : +91-422-2317757 Fax : +91-422-4390677





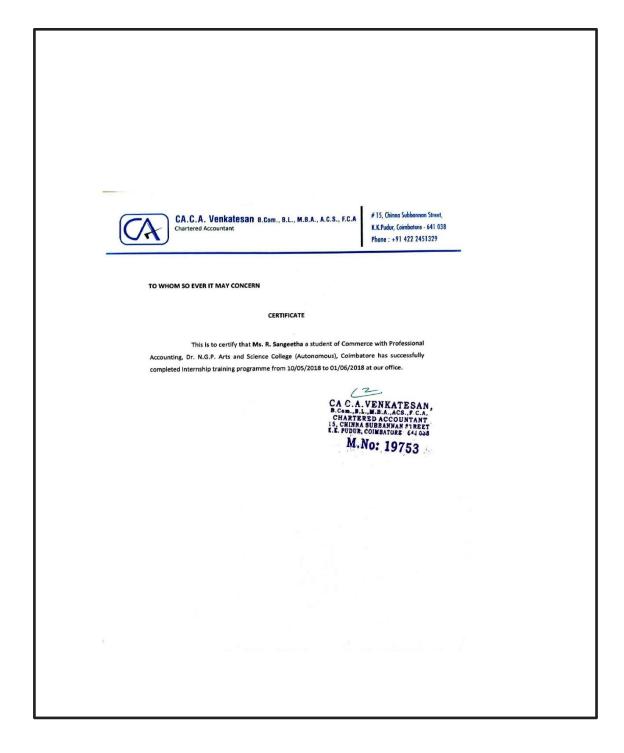
(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

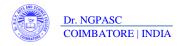
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



No: 34/60 Maruthakutty Street, Rathinapuri, Coimbatore - 641 027. Mobile: 90800 06075 Office: 0422 - 4516075 Email: ca.bhoobala@gmail.com

> Place : Coimbatore Date : 06.06.2018

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. H.SARITHA a Student of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore has successfully Completed internship training programme from 10.05.2018 to 01.06.2018 at our firm.

K.BHOOBALA KRISHNAN

Chartered Accountant

K.BHOOBALA KRISHNAN B.Com, F.C.A., Chartered Accountant M.No.228910 34/60, Maruthakutty Street, Rathinapuri, Colmbatore - 641027.





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

CA. Devaraj E. M.Com., ACMA., F.C.A., DISA., Chartered Accountant

(CA)

Devaraj Easwaran & Associates

Ref.

Date:

#### To whomsoever It May Concern

This is to certify that Miss. Shanthini.E (171PA157) of II year B.com (PA) of Dr.N.G.P Arts and Science College has completed his training period of 20 days in our auditor office from 10<sup>th</sup> May 2018 to 1<sup>st</sup> June 2018.

Chartered Accountant

CA. Devaraj E. M.Com., ACMA, F.C.A., DISA.
Devaraj Easwaran & Associates
Chartered Accountant
2. A. Kondsamy Naidi, Layout,
Masakalipalayan Road, Peclamedu,
Combatore -641 Ondo
Membership No : 212204

Place: Coimbatore

Date: 01/06/2018

2A, Kondasamy Naidu Layout, Masakkalipalayam Road, Peelamedu, Coimbatore - 641 004.
Phone: 0422 - 4218773 Cell: 94431 01718 E-mail: devarajca@yahoo.co.in





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore) Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle) Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in | Email: info@drngpasc.ac.in | Phone: +91-422-2369100

**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 



S. Ragunathan & Co., Chartered Accountants

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Ms. SHRINIDHI S (171PA158), a student of Commerce with Professional Accounting, Dr. N.G.P. Arts and Science College (Autonomous), Coimbatore has successfully completed internship training programme from 10.05.2018 to 01.06.2018 at our firm.

During this period her conduct was good.

For S. Ragunathan & Co Chartered Accountants

FRN: 013795S

M.No. 209097

Date: 01.06.2018 Place: Coimbatore

H.O.: No.54, Karuvampalayam Extn., ist Street, Diamond Theatre Backside, Tirupur-641604. Mob.: 98947 66117, 91717 15076, E-mail: srcotpr@gmail.com B.O.: 71/53, First Floor, Rajaji Road, Ram Nagar, Coimbatore - 641009. Ph.: 0422 4346700, Mob.: 98431 20700, E-mail: srcotpe@gmail.com





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1



# 129-C,FIRST FLOOR,T.V.SAMY ROAD(WEST), R.S. PURAM, COIMBATORE -641 002, TAMIL NADU.INDIA Mob: +91, 9952441236, +91, 9942551236 E-mail: cakumaravel@gmail.com

#### TO WHOM MAY SOEVER IT MAY CONCERN

This is to certify that Selvi. M. SOWMIYA (Roll No. 171PA159), B.Com(PA). First Year Student of Dr. N.G.P Arts & Science College, Coimbatore has undergone internship training in my office from 10.05.2018 to 01.06.2018. During the training period her conduct was good.

Place: Coimbatore

Date: 02.06.2018

FRN: 0144388 #

Chartered Accountant

8) offeron 8

S.P. KUMARAVEL, B.Com., A.C.A., CHARTERED ACCOUNTANT, No. 129-C, First Floor, T.V.Samy Read(W), R.S. Puram, Coimbatore - 641 002.





(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

T.SENTHILKUMAR, B.com, F.C.A., Chartered Accountant

240/8, Subarna Complex, Iyer Hospital Bus Stop, Sundharapuram, Coimbatore – 641 024. Phone: 0422-4279139 Email: casaiwin@gmail.com

#### TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. SRIDHAR.P student of commerce with professional accounting, DR.N.G.P ARTS AND SCIENCE COLLEGE (AUTONOMOUS), COIMBATORE has successfully completed Internship Training Programme from 10.05.2018 to 01.06.2018 at our firm.

Coimbatore 04/06/2018

T. SENTHIL KUMAR, B.COM., F.C.A.
CHARTERED ACCOUNTANT
MAR. Subarna Complex, lyar Hospital Bus Stop.
Sundarapuram (Post). Celimbatore - 641 024
M. No. 27315.





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Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

svss & eo

Chartered Accountants



Date: 01/06/2018

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.M.VASANTHAKUMAR (171PA161), a student of First year B.com(PA) Dr.N.G.P Arts and Science college (Autonomous), Coimbatore has completed 20 days(10<sup>th</sup> MAY 2018 to 01<sup>st</sup> JUNE 2018)internship program at our office. During the period his conduct was found Good.

We wish him every success in life.

Signature
For SVSS & CO
Chartered Accountants
alog Partiner CA SSarayanan
S55777-FRN: 011186S

27, 4th Street, Ramaiah Colony West, Ram Nagar, Tirupur - 641 602. Tel : +91-421-4334403, 4240924 Offices at Erode, Ooty & Coimbatore. E-mail : svssandco@gmail.com Fax : 0421-4334427





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**NAAC** 3<sup>rd</sup> Cycle

**Criterion III Metric 3.7.1** 

S.VAIRAVANATHAN F.C.A.,

M/S VAIRAVANATHAN & CO.

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Aravinder Bu

#### TOWHOM SO EVER IT MAY CONCERN

I do hereby certify that Mr.V.S.Venkateshwara S/o Mr.S.Sankar Residing at No.16C, Gomathiyapuram, New 3<sup>rd</sup> Street, Sankarankoil, Tirunelveli-627 756 had been undergone training with our Organization as a Audit trainee since 10.05.2018 to 01.06.2018 (Twenty Days). He bears good knowledge in taxation and accounting; He is honest & hard working. We wish him a successful & smooth life.

Date: 01.06.2018

Place: Tirunelveli

Chartered Accountant







(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2<sup>nd</sup> Cycle)

Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India

Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100

NAAC 3<sup>rd</sup> Cycle

Criterion III Metric 3.7.1

S.P. PARAMASIVAM B.Com., FCA, DISA

200, Thirumagal Bhavanam 100 Feet Road, Tatabad Colmbatore - 641012. © Off: 2493570,97867 55077 Mobile : 98940 55499 E-mail : psivam16@gmail.com



#### CERTIFICATE

I hereby certify that Ms.Vishnu Priya.B (171PA163) student of Dr.N.G.P.Arts and Science college, Coimbatore-641048 has undergone internship training in my office from 10.05.2018 to 01.06.2018. She abide the rules and regulations of my office and her work was satisfactory during the above period.

Place: Coimbatore

Date: 01.06.2018



(S.P.Paramasivam)





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### Balaji & Thulasiraman

CHARTERED ACCOUNTANTS



04.06.2018 Tirupur

#### INTERNSHIP CERTIFICATE OF COMPLETION

This is to certify that Mr. P.KAVIN KUMAR, student of B.Com with Professional Accounting of Dr.N.G.P. Arts and Science College, Coimbatore 641048 Roll No 171PA164 of Commerce Department has successfully completed internship Training Program under our guidance during the period of 20 days (from 10/05/2018 to 01/06/2018)





No. 14, Anna Nagar Extn., K.P.N. Colony 3rd Street, TIRUPUR - 641 601. Phone: 0421 - 4244010 Mobile No. : 73730 74010 E-mail : balthulca@gmail.com





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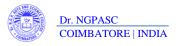
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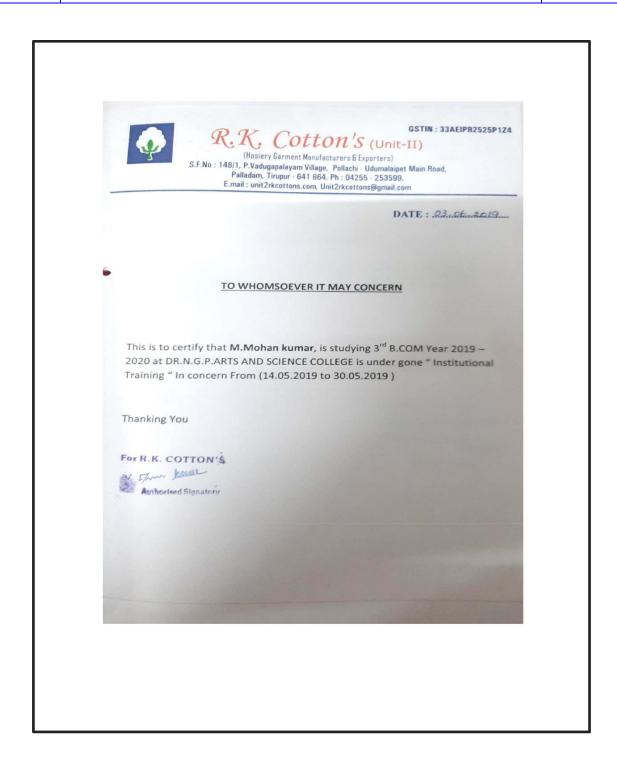
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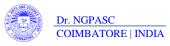
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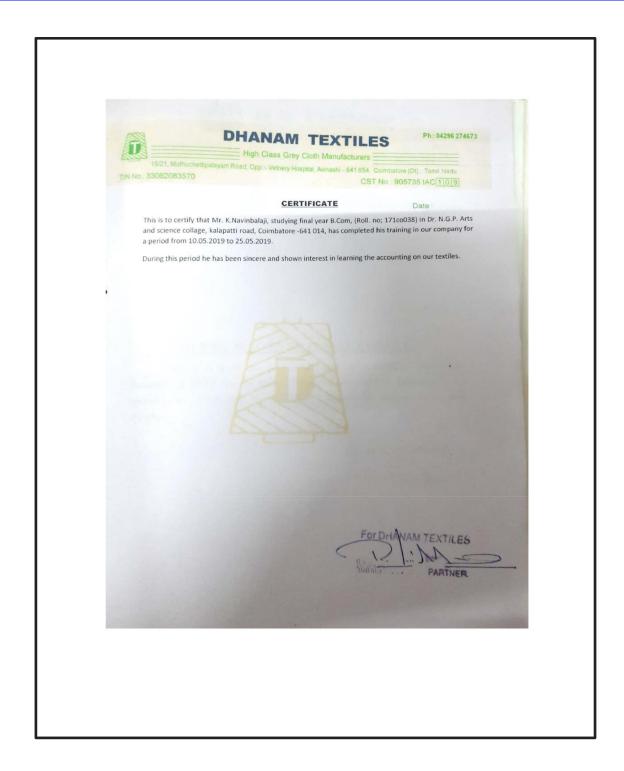
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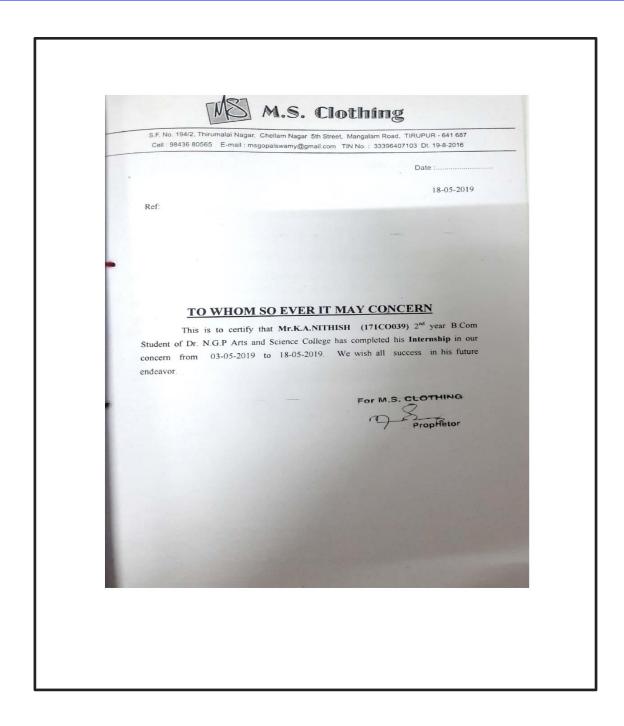
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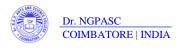
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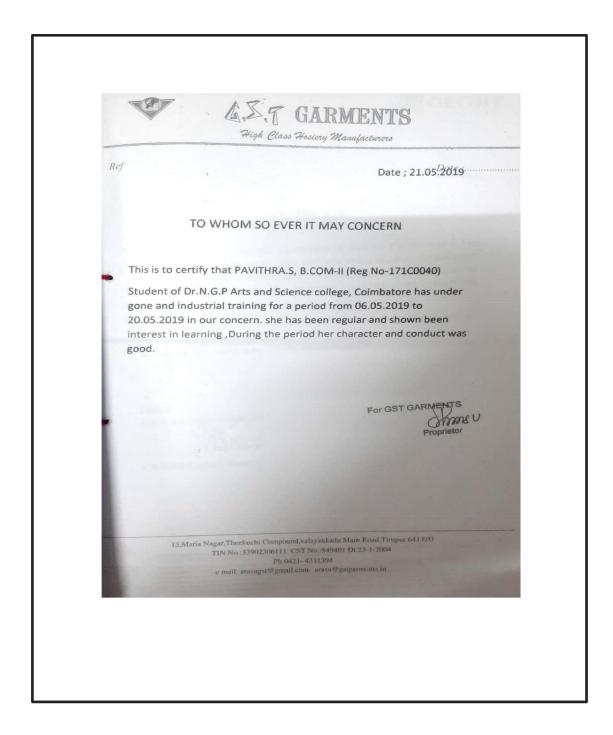
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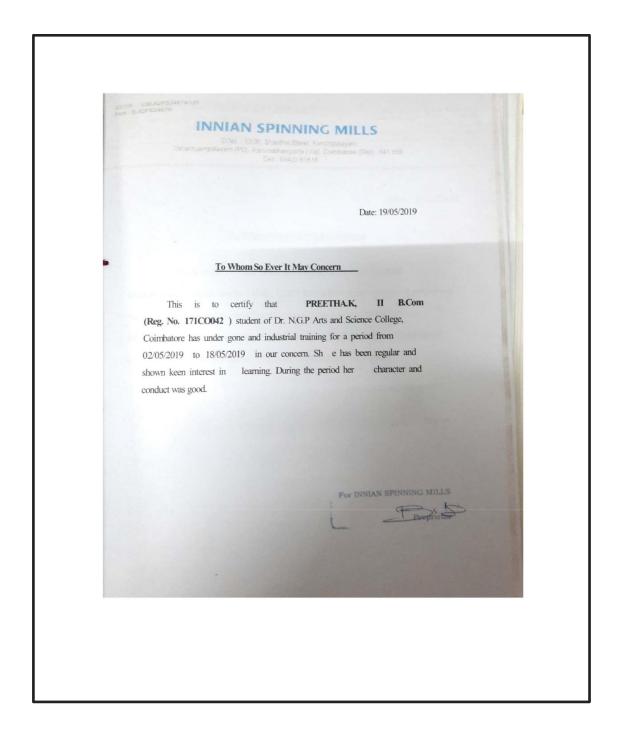
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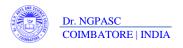
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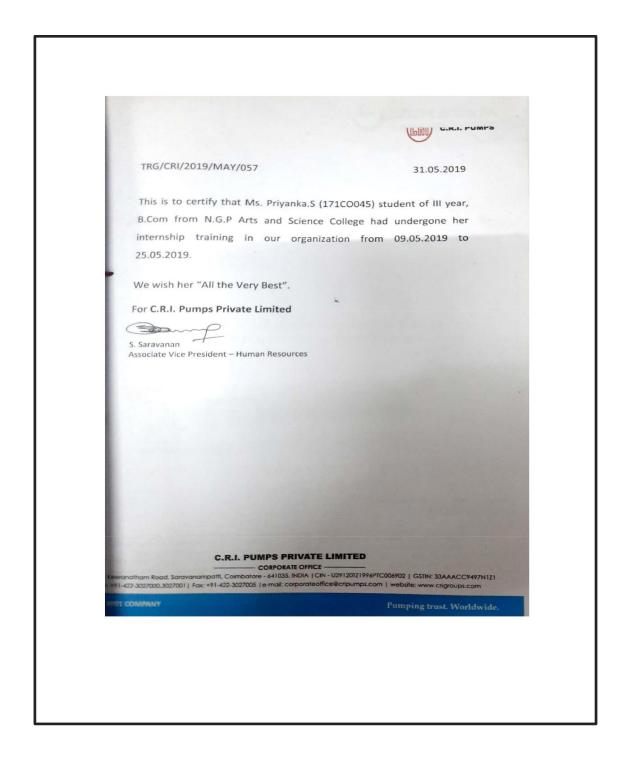
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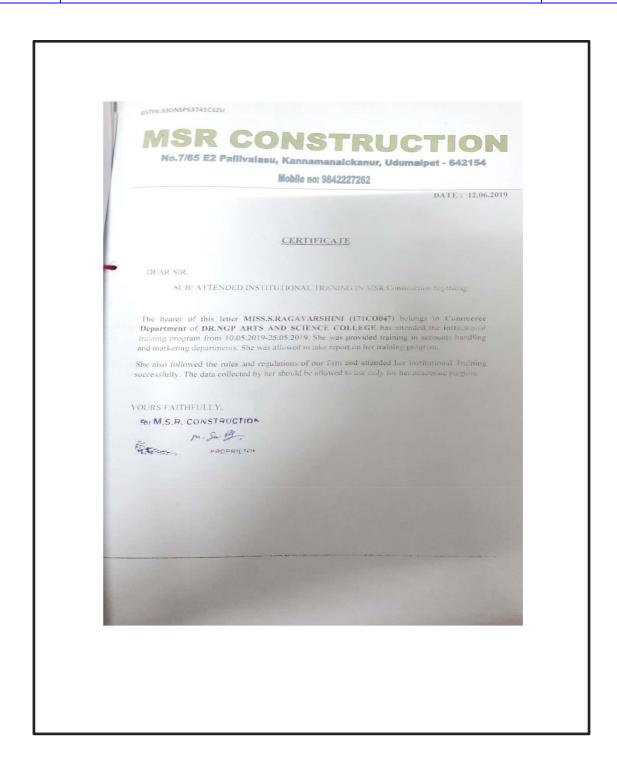
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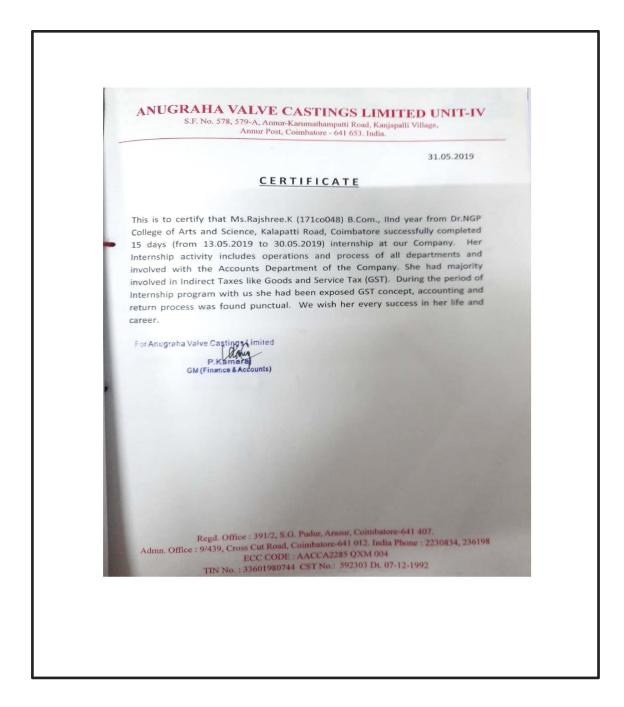
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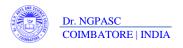
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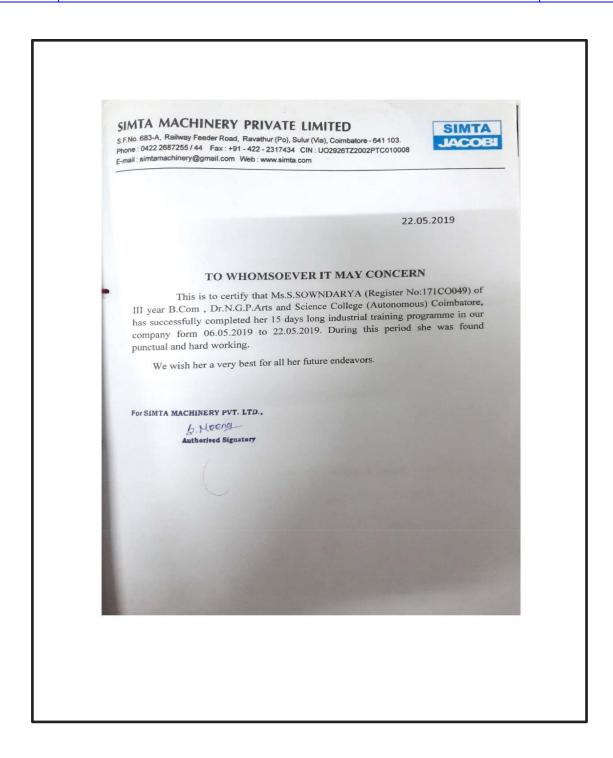
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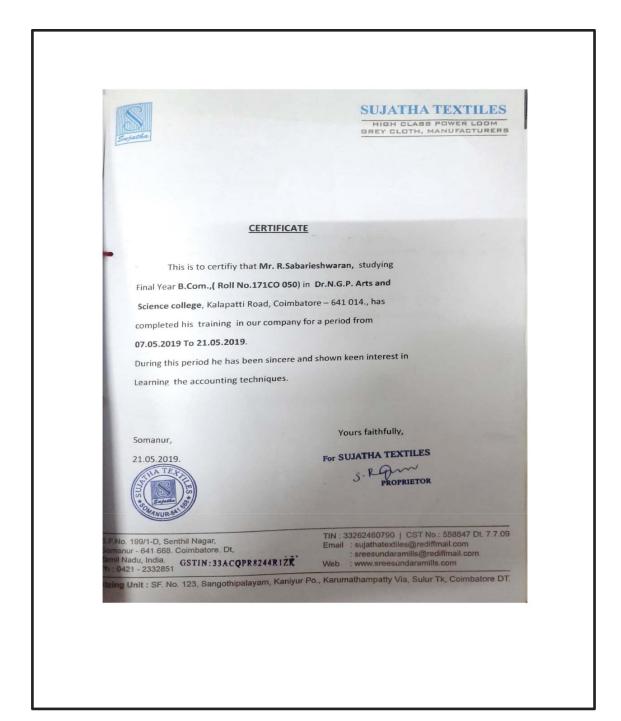
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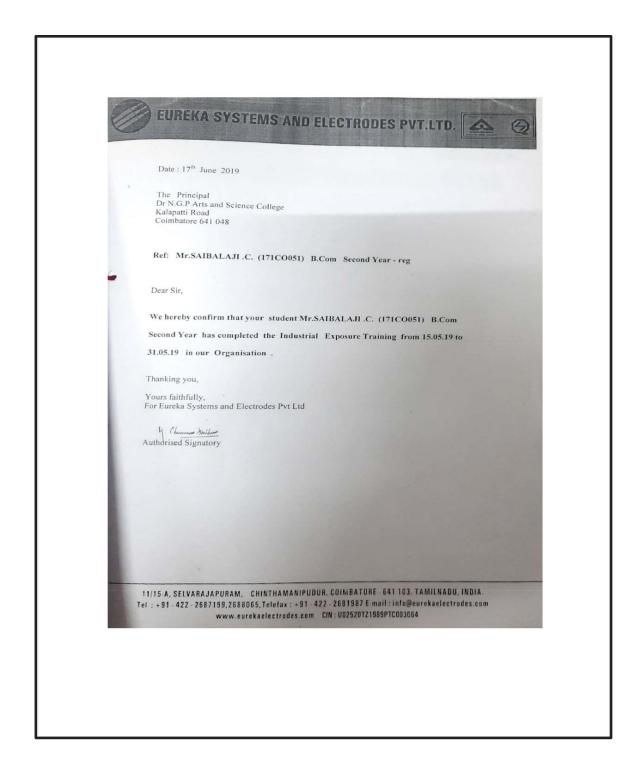
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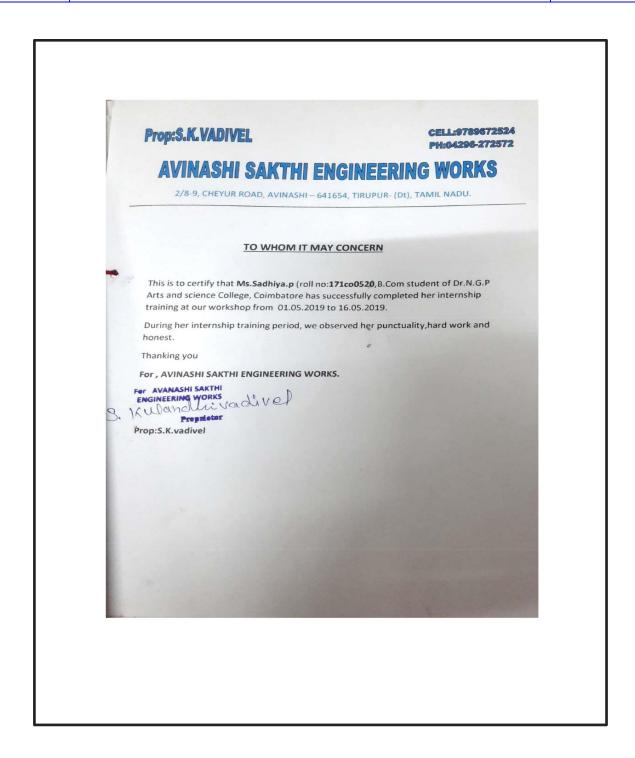
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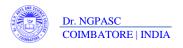
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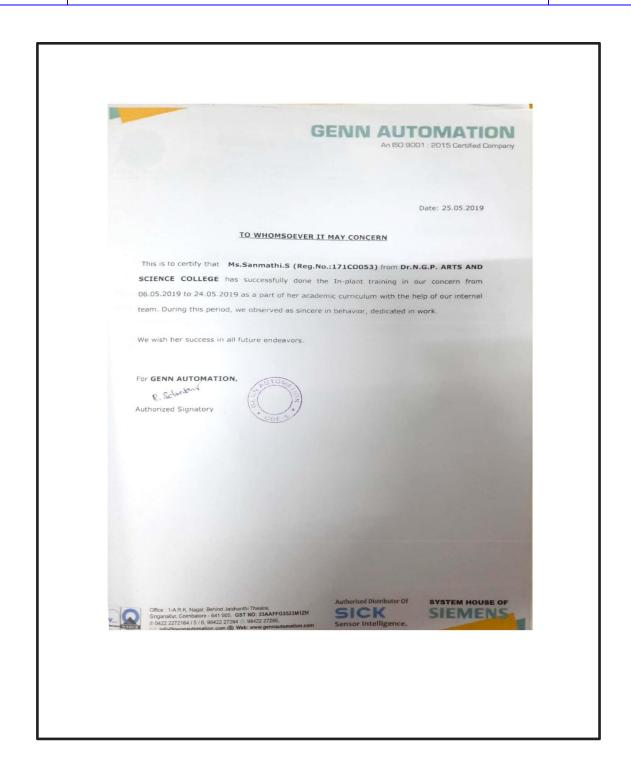
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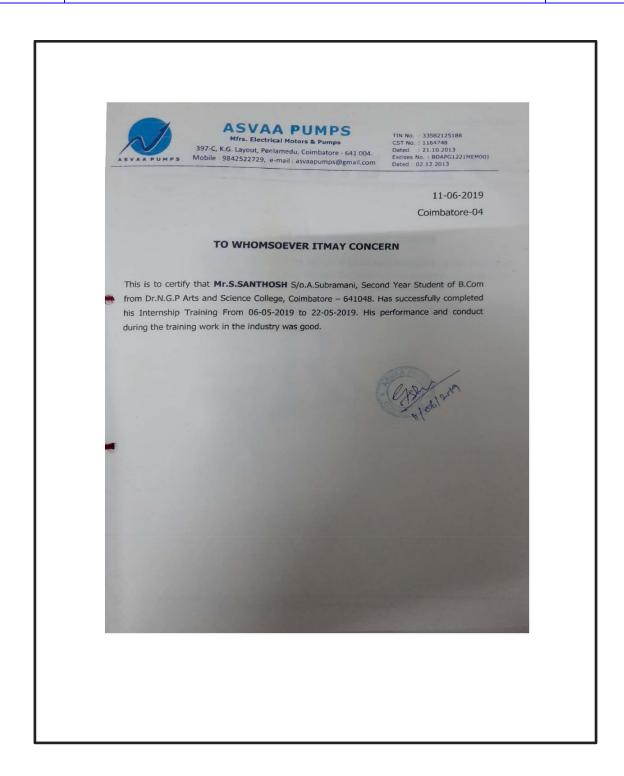
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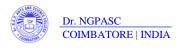
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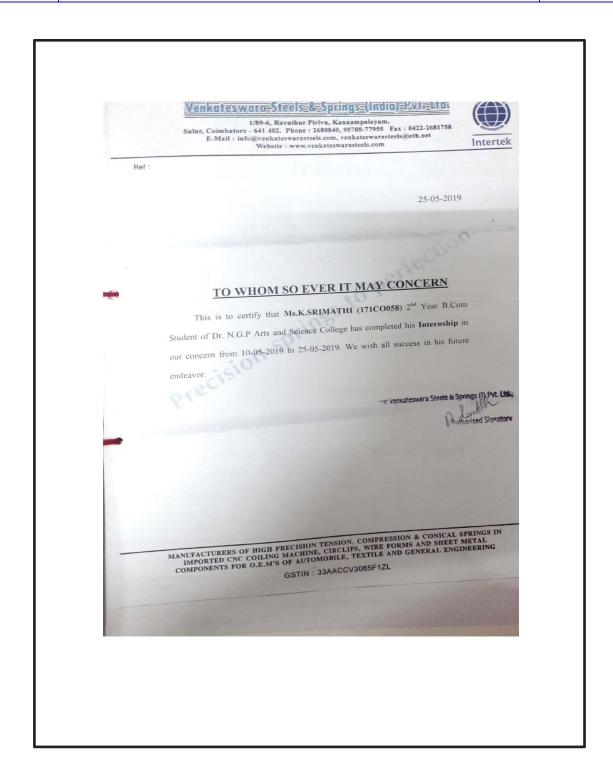
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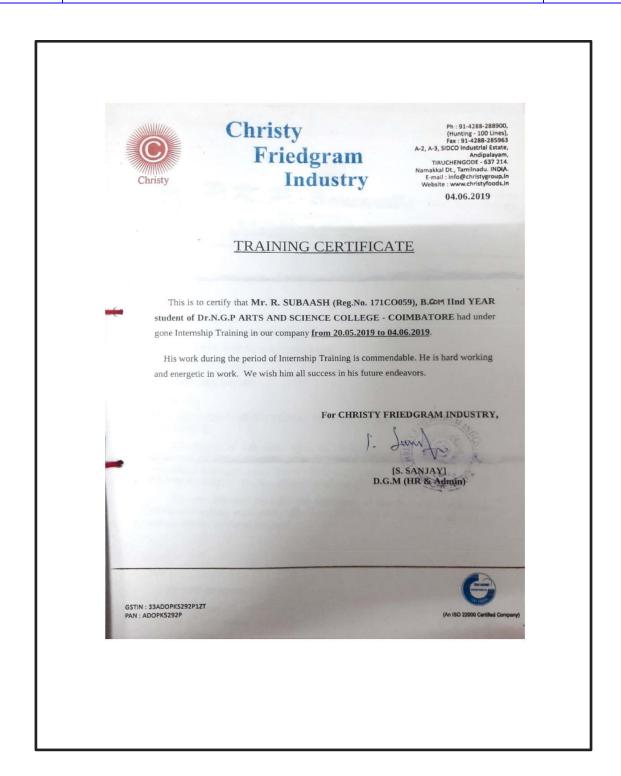
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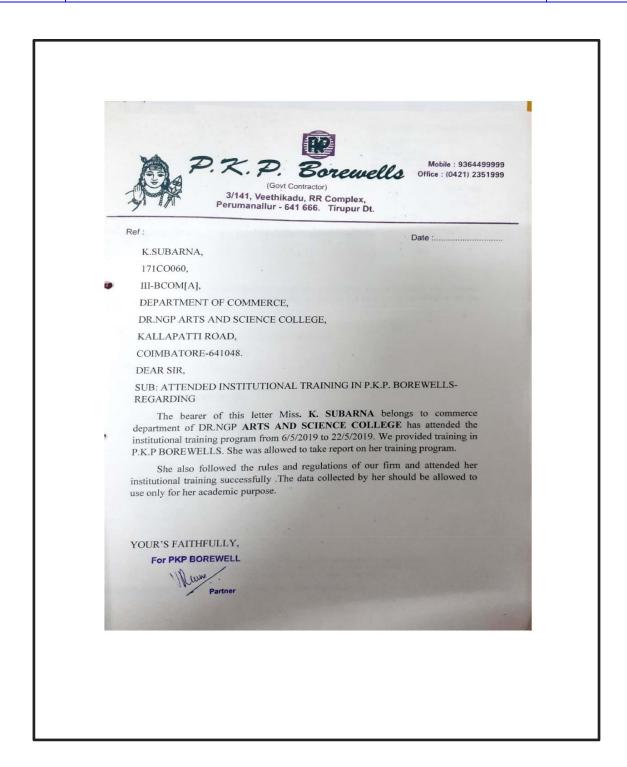
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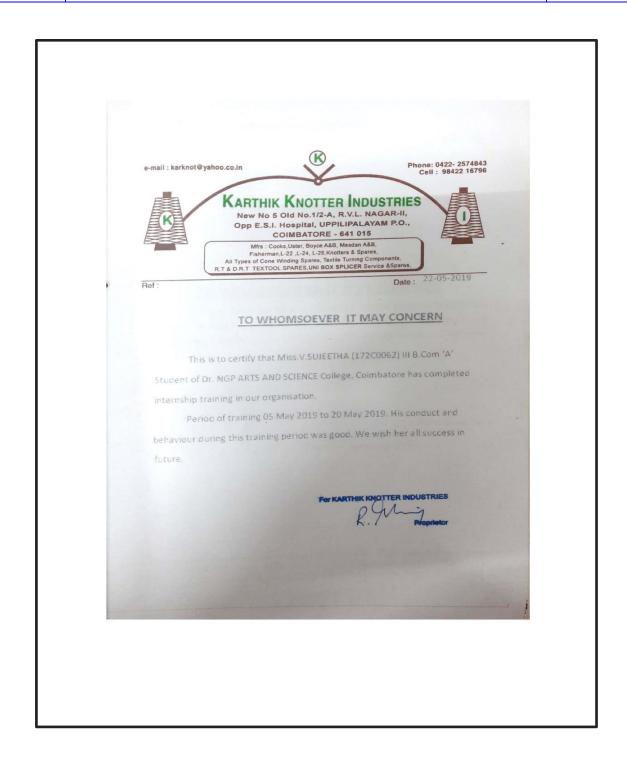
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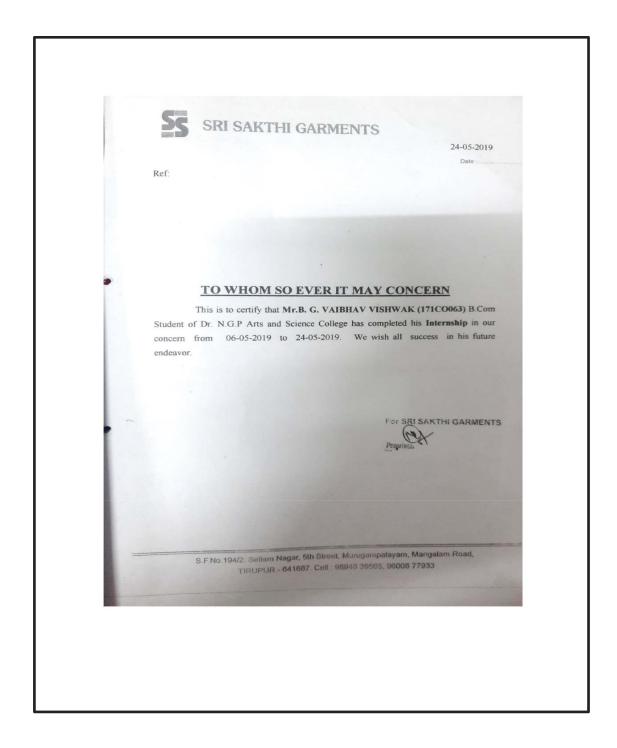
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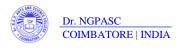
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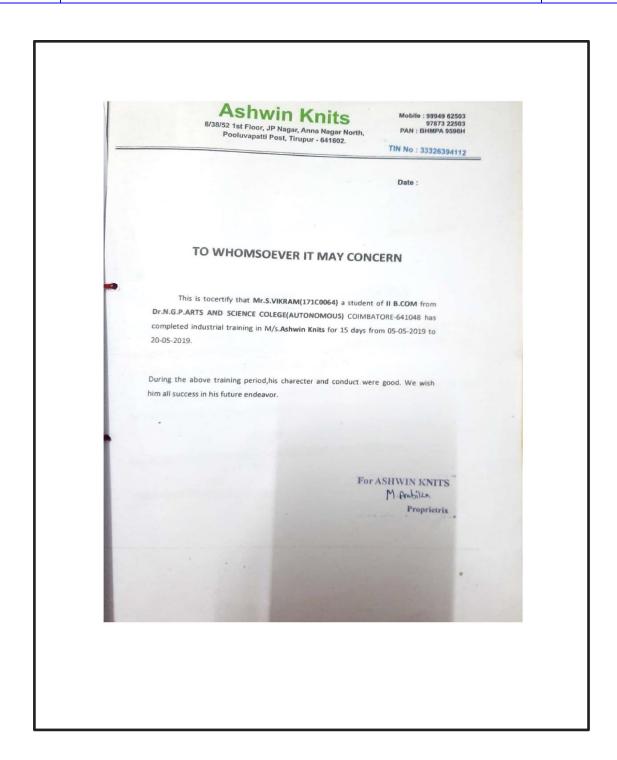
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