

**Name** : Dr. K. Girija

**Designation** : Assistant Professor

**Department** : Physics

**Qualification** : M.Sc., M. Phil., Ph. D.

**Experience:**

Teaching: 5 Years      Industry: Nil      Research: 5 Years

**Area of Specialization(s)** : Nanoscience and Technology

**Email (Official ID)** : girija.k@drngpasc.ac.in

### Academic Qualifications

Degree	Branch	Institution / University Name	Year of Graduation
Ph. D.	Physics – Nanoscience and Technology	Bharathiar University	2013
M. Phil.	Physics	Ramakrishna Mission Vidyalaya College of Arts and Science	2008
M. Sc.	Physics	Kongunadu Arts and Science College	2007
B. Sc.	Physics	PSGR Krishnammal College for Women	2005

### Research Publications (Indexed)

#### *International*

- 1) K. Girija, S. Thirumalairajan, Valmor R Mastelaro, D. Mangalaraj, **Catalyst free vapor-solid deposition of morphologically different of B-Ga<sub>2</sub>O<sub>3</sub> Nanostructure thin films for selective Co Gas sensors at low temperature**, Analytical Methods, Vol.8, pp.3224-3235, March 2016, ISSN:1759-9679, IF: 1.915, (Indexed in SCOPUS).
- 2) S. Thirumalairajan, K. Girija, Valmor R Mastelaro, N. Ponpandian, **Investigation on Magnetic and Electric properties of morphologically different perovskite LaFeO<sub>3</sub> Nanostructures**, Journal of Materials Science: Materials in Electronics, Vol.26, No.11, pp.8652- 8662, July 2015, ISSN: 0957-4522, IF: 1.57, (Indexed in SCOPUS).
- 3) K. Girija, S. Thirumalairajan, Valmor R Mastelaro, D. Mangalaraj, **Photocatalytic degradation of organic pollutants by shape selective synthesis Of B-Ga<sub>2</sub>O<sub>3</sub> microspheres constituted by Nanospheres for environmental remediation**, Journal of Materials Chemistry A, Vol.3, pp.2617-2627, December 2015, ISSN: 2050-7488, IF: 6.33, (Indexed in SCOPUS).

- 4) S. Thirumalairajan, K. Girija, Valmor R Mastelaro, N. Ponpandian, **Photocatalytic degradation of organic dyes under visible light irradiation by Floral-like LaFeO<sub>3</sub> Nanostructures composed of Nanosheets**, New Journal of Chemistry, Vol.38, pp.5480-5490, August 2014, ISSN: 1144-0546, IF: 3.15, (Indexed in SCOPUS).
- 5) S. Thirumalairajan, K. Girija, Valmor R Mastelaro, N. Ponpandian, **Surface morphology dependent room temperature LaFeO<sub>3</sub> Nanostructure thin films as selective NO<sub>2</sub> Gas sensor prepared By Radio Frequency Magnetron Sputtering**, ACS Applied Materials & Interfaces, Vol.6 No.16, pp.13917-13927, July 2014, ISSN: 1944-8244, IF: 5.01, (Indexed in SCOPUS).
- 6) S. Thirumalairajan, K. Girija, Valmor R Mastelaro, V. Ganesh, N. Ponpandian, **Detection of Neurotransmitter Dopamine by a glassy carbon electrode modified with self-assembled perovskite LaFeO<sub>3</sub> microspheres made up of nanospheres**, RSC Advances, Vol. 4, pp.25957-62, May 2014, ISSN: 2046-2069, IF: 3.71, (Indexed in SCOPUS).
- 7) K. Girija, S. Thirumalairajan, D. Mangalaraj, **Morphology controllable synthesis of parallelly arranged single-crystalline B-Ga<sub>2</sub>O<sub>3</sub> Nanorods for photocatalytic and antimicrobial activities**, Chemical Engineering Journal, Vol.236, pp.181-190, September 2014, ISSN: 1385-8947, IF: 4.05, (Indexed in SCOPUS).
- 8) K. Girija, S. Thirumalairajan, G.S. Avadhani, D. Mangalaraj, N. Ponpandian, C. Viswanathan, **Synthesis, morphology, optical and photocatalytic performance of nanostructured B-Ga<sub>2</sub>O<sub>3</sub>**, Materials Research Bulletin, Vol. 48 No.6, pp.2296-2303, February 2013, ISSN: 0025-5408, IF: 2.1, (Indexed in SCOPUS).
- 9) K. Girija, S. Thirumalairajan, Astam K. Patra, D. Mangalaraj, N. Ponpandian, C. Viswanathan, **Enhanced Photocatalytic Performance of novel self-assembled Floral B-Ga<sub>2</sub>O<sub>3</sub> nanorods**, Current Applied Physics, Vol.13, pp.652-658, November 2013, ISSN:1567-1739, IF: 2.0, (Indexed in SCOPUS).
- 10) K. Girija, S. Thirumalairajan, Astam K Patra, D. Mangalaraj, N. Ponpandian, C. Viswanathan, **Organic Additives-Assisted Synthesis of Mesoporous B-Ga<sub>2</sub>O<sub>3</sub> Nanostructures for photocatalytic dye degradation**, Semiconductor Science and Technology (IOP), Vol. 28, pp.035015, February 2013, IF: 2.20, ISSN: 0268-1242, (Indexed in SCOPUS).

- 11) S. Thirumalairajan, K. Girija, Neha Y. Hebalkar, D. Mangalaraj, N. Ponpandian, **Shape evolution of perovskite LaFeO<sub>3</sub> nanostructures: A systematic investigation on growth mechanism, properties and morphology dependent photocatalytic activities**, RSC Advances, Vol. 3, pp.7549-61, March 2013, IF: 3.71,ISSN: 20462069, (Indexed in SCOPUS).
- 12) S. Thirumalairajan, K. Girija, V. Ganesh, D. Mangalaraj, C. Viswanathan, N. Ponpandian, **Novel synthesis of LaFeO<sub>3</sub> Nanostructure dendrites: A systematic investigation of growth mechanism, properties, and biosensing for highly selective determination of Neurotransmitter Compounds**, Crystal Growth and Design (ACS), Vol.13,pp. 291-302, November 2013, IF: 4.55,ISSN: 1528-7483, (Indexed in SCOPUS).
- 13) S. Thirumalairajan, K. Girija, I. Ganesh, D. Mangalaraj, C. Viswanathan, A. Balamurugan, N. Ponpandian, **Controlled synthesis of Perovskite LaFeO<sub>3</sub> microsphere composed of Nanoparticles via Self-assembly process and their associated Photocatalytic activity**, Chemical Engineering Journal, Vol.290,pp. 420-428, August 2012, IF: 4.05, ISSN: 1385-8947, (Indexed in SCOPUS).
- 14) K. Girija, S. Thirumalairajan, S. M. Mohan, J. Chandrasekaran, **Structural, morphological, and Optical Studies of CDSE thin films from ammonia bath**, Chalcogenide Letters, Vol. 6, No. 8, pp. 351-357, August 2009, IF: 0.934, (Indexed in SCOPUS).
- 15) K. Girija, S. Thirumalairajan, S. M. Mohan, **Deposition and characterization of cadmium Indium Selenide thin film by Chemical Bath Technique**, Optoelectronics and Advanced Materials - Rapid Communications, Vol. 3, No. 1, pp. 60-62, January 2009, IF: 0.563, (Indexed in SCOPUS).
- 16) S. Thirumalairajan, K. Girija, M. Sudha, P. Maadeswaran, J. Chandrasekaran, **Structural and optical Investigation of Manganese oxide thin films by spray pyrolysis technique**, Optoelectronics and Advanced Materials - Rapid Communications, Vol. 2, No.12, pp. 779-781,December 2008, IF: 0.563, (Indexed in SCOPUS).

#### *National*

- 1) K. Girija, G. Thilakavathi, C.K. Bibisha, K. Senthil, R. Sarojini, **Spectral Luminescence Study of Interaction of Metals with N-Acetyl- l-Cysteine - a Potent antioxidant that protects against harmful environmental toxins**, Eco-Chronicle, Vol.2, pp.185-188, December 2007, ISSN: 0973-4155.

## Presentations in Conference

- 1) **Information and Communication Technology for Knowledge Centered Education**, 19th ISTE TN & P Section Annual Convention for faculty members of Engineering Colleges –2016, Theme: Internationalization of Engineering Education- Empowering the future, Dr. N.G.P. Institute of Technology, Coimbatore, 2 & 3-Dec-16.
- 2) **Research and Education of Science – Current Scenario**, International Conference on Quality changes through Research, Experiences, Expectations & Enhancement, Dr. N.G.P. College of Education, Coimbatore, 14 & 15- March-14.
- 3) **Structural, morphological and optical investigation of nanostructured B-Ga<sub>2</sub>O<sub>3</sub>**, Proceedings of the International Conference on Advanced Materials, Loyola College, Chennai, 5 to7-Jan-12. (ISBN 978-81-9094-901-9).
- 4) **Characterization of chemical bath deposited CDSE thin film**, Proceedings of the International Seminar on Mathematical & Experimental Physics, PSGR Krishnammal College for Women, Coimbatore, 18 & 19-Dec-08. (ISBN 978-81-8487-057-2).

## Participation in Conference

### *International*

- 1) Quality changes through Research-Experiences, Expectations & Enhancement, Dr. N.G.P. Institute of Education, Coimbatore, 14 & 15- Mar-14.
- 2) Advances in New Materials, University of Madras, 20 & 21-Jun-14.
- 3) Advanced Materials, Loyola College, Chennai, 5 to 7-Jan-12.

### *National*

- 1) Advancement in Material Science, Coimbatore Institute of Technology, 26 & 27- Sep- 14.
- 2) Multifunctional Nanomaterials and Nanocomposites, Bharathiar University, 24 & 25-Mar-11.
- 3) Multifunctional Nanomaterials and Nanocomposites, Bharathiar University, 4 & 5-Feb-10.
- 4) Emerging areas in Thin film Science & Technology, PSG College of Technology, Coimbatore, 13 & 14- Feb-09.

### **Participation in Seminars**

- 1) International Seminar on **Mathematical & Experimental Physics**, PSGR Krishnammal College for Women, Coimbatore, 18 & 19-Dec-08.
- 2) National Seminar on **Advanced Materials and Applications**, Karpagam Arts and Science College, Coimbatore, 4 -Mar-08.
- 3) National Seminar on **Spectroscopy of Nanoparticles**, Kongunadu Arts and Science College, Coimbatore, 4 & 5-Jan-07.
- 4) National Seminar on **Astrophysics and Space Physics NASAS-2006**, P.S.G.R Krishnammal College for Women, Coimbatore, 24- Feb-06.

### **Participation in Workshop**

- 1) **Advanced Materials**, PSG College of Technology, Coimbatore, 28-Feb-14.
- 2) **Advanced Instruments for Characterization**, Bharathiar University, 27-Mar-12.
- 3) **Spectroscopy**, Bharathiar University, 7-Mar-12.
- 4) **Patent Awareness**, Bharathiar University, 3-Mar-10.
- 5) **Solid state physics to material science**, Pondicherry University, 19 to 21-Aug-09.
- 6) **Advanced techniques for materials characterization**, Bharathiar University, 19 to 21-Mar-09.

### **Participation in Orientation Programme / Short Term Courses**

- 1) 5<sup>th</sup> DST Advanced School on Nanoscience and Nanotechnology, IISC Bengaluru, 17-Jan-11 to 23-Jan-11.
- 2) IUAC Acquaintance programme on Accelerator Based Research, Kongunadu Arts and Science College, Coimbatore, 1-Dec-06.

### **Participation in Faculty Development Programme**

- 1) Shifting paradigm: Improving mentor competencies to match present –day academic priorities, Dr. N.G.P. Institute of Technology, 28-Dec-16.

- 2) Instructional Design and Delivery System conducted by National Institute of Technical Teachers Training & Research, Dr. N.G.P. Institute of Technology, Coimbatore, 11to15-Nov-13.

#### Conference / Seminar / Workshop Organized

- 1) Organizing Member, Faculty Development Programme on Engineering Materials and its Applications, Dr. N.G.P. Institute of Technology, Coimbatore, 11-Jan-18.
- 2) Organizing Secretary, National Conference on Advanced Functional materials and their Applications in Engineering (NCAFMAE-2017), Dr. N.G.P. Institute of Technology, 25-Jan-17.

#### Editorial / Review Board Member

- 1) Review Board Member, Physica E Low Dimensional Systems and Nanostructures, 2017.

#### Membership in Professional Bodies

Name of the Professional Body	Nature of membership	Duration
Materials Research Society of India (MRIS- INDIA)	Life member	-
Indian Society for Technical Education (ISTE)	Life member	-
Nano Science and Technology Consortium ( NSTC)	Annual	2014– 2015

#### Awards / Honors

Awards / Honors	Agency / Institute	Year of Award
Junior Research Fellow (JRF)	DRDO BU - CLS, Bharathiar University, India.	2010-2013
Senior Research Fellow (SRF) – Selected	CSIR, Government of India	2014
Post Doctoral Fellowship – Selected	FAPSEP, University of Sao Paulo, Brazil	2015
IASc – INSA - NASI Summer Research Fellowship	Science Academies	2018