

Dr. R. Shwetharani, M.Sc., PhD

Assistant Professor

Center for Nano and Material Sciences,

Jain University, Bangalore - 562112

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Professional Appointments:

2022-Present: Assistant Professor - CNMS, Jain University

2020-2023: SERB-TARE fellow – IPC, IISc, Bangalore

2019-2020: Visiting researcher – Shinshu University, Japan

2018-2022: Scientist C - CNMS, Jain University

2016-2018: Senior research associate – CNMS, Jain University

International Fellowship:

Received *JAUW International Fellowship from Japan* in 2019 and worked as visiting researcher in Shinshu University, Japan (Prof. Kazunari Domen) for nine months (2019-2020)

Project:

SI No	Funding body	Title of the project (<u>TAR/2019/000042</u>)	Start year	End year	Funding money (Lakhs)
1	TARE-SERB	Functionalized MXenes/Metal Selenide (MSe ₂) and Metal Phospho-Tri-Selenide Nanohybrids: Electrochemical and Photo-electrochemical Hydrogen Evolution	July 2020	July 2023	18.3

Experience

- **Assistant Professor (2022-Present)**

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Research: Design and Development of nanostructured materials for Hydrogen generation (Electrochemical and photocatalytic)

- **Scientist C (2018-2022)**

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Research: Design and Development of Solar Cells, Perovskites, Hydrogen generation (Electrochemical and photocatalytic)

- **Senior Research Associate (2016 – 2018)**

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Research: Design and Development of Solar Cells, Perovskites, Hydrogen generation (Electrochemical and photocatalytic)

- **SRF (2015-2016)**

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Research: Design and Development of Nanomaterials, Photocatalysis, H₂ generation, Solar Cells

- **JRF (2013-2015)**

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Research: Design and Development of Nanomaterials, Photocatalysis, Solar Cells

- **Scientist (2011-2013)**

PhytoMyco research, Mysore-570020

Research: Testing plant extracts for antibacterial, antifungal and anti-diabetic activity

Education

PhD in Chemistry (2013-16)

Centre for Nano and Material Sciences, Jain University, Bangalore – 562112

Thesis: Synthesis and Characterization of Nanomaterials for Enhanced Solar Water Disinfection and Energy Generation

M. Sc in Organic Chemistry (2008-10)

Department of Chemistry, University of Mysore, Mysore – 570 005

Thesis: Synthesis of pyridine derivatives

B. Sc in Chemistry, Zoology and Biotechnology (2005-08)

Department of Chemistry, J.S.S. College of Arts, Commerce and Science

Affiliated to University of Mysore, Mysore – 570 005

Research interests

- Preparation and property tuning of semiconductor oxide (TiO₂) based nanomaterials, 2D materials, MoS₂, MoSe₂, FeS₂, MXenes, Functionalization of 2D materials
- Perovskite oxynitride/oxysulfide, MPX₃ materials preparation for H₂/O₂ evolution
- Perovskite QDs property modification (CsPbX₃)
- H₂ production (Photocatalytic/ Electrocatalytic)/ Photocatalytic disinfection / degradation)
- Solar cells (DSSCs, QDSSCs, Perovskites)

Journal publications

Year 2024

1. Sumanth Dongre S, Asif Iqbal, Ranjit Thapa, Shwetharani Ramu, R Geetha Balakrishna, Synergistic Catalyst Design for Enhanced Electrochemical Hydrogen Evolution: Fe₂O₃/MoS₂/Ti₃C₂T_x MXene Ternary Composite, ACS Applied Engineering Materials, 2024, 10.1021/acsaenm.4c00027
2. Shwetharani Ramu, Itika Kainthla, Lavanya Chandrappa, Jyothi Mannekote Shivanna, Brijesh Kumaran, R. Geetha Balakrishna, Recent advances in metal organic frameworks–based magnetic nanomaterials for wastewater treatment, *Environmental Science and Pollution Research*, 2023, 10.1007/s11356-023-31162-8

Year 2023

3. S Sumanth Dongre, R Shwetharani, Sk Abdul Moyez, R Geetha Balakrishna, In-situ neodymium ion doping into perovskite nanocrystals over ex-situ and its importance in triclosan sensing, *Materials Chemistry and Physics*, 2023, 307, 128221, 10.1016/j.matchemphys.
4. Sumanth Dongre S, Erakulan E. Siddharthan, Ranjit Thapa, Shwetharani Ramu, and R. Geetha Balakrishna, Dual Vacancy Passivation in CsPbCl₃ Perovskite

Nanocrystals: Implications on Optoelectronic Applications. *ACS Appl. Nano Mater.*, 2023, 6, 14, 13227–13237

5. Shwetharani R, Itika Kainthla, Sumanth Dongre S, Laveena D'Souza, R Geetha Balakrishna, Recent Advances of Ecofriendly 2D Monoelemental Bismuthene as an Emerging Material for Energy, Catalysis and Biomedical applications, *J. Mater. Chem. C*, 2023,**11**, 6777-6799
6. Yatish Kalanakoppal Venkatesh, Mithun Prakash Ravikumar, Shwetharani Ramu, Chandan Hunsur Ravikumar, Sakar Mohan, R. Geetha Balakrishna, Developments in Titanium-Based Alkali and Alkaline Earth Metal Oxide Catalysts for Sustainable Biodiesel Production: A Review, 2023, 10.1002/tcr.202300277

Year: 2022

1. Sumanth Dongre S, Shwetharani R, Chandan Hunsur Ravikumar, Lavanya C, and R. Geetha Balakrishna, Review on 2D Arsenene and Antimonene: Emerging Materials for Energy, Electronic and Biological applications, *Adv. Mater. Interfaces*, 2022, 2200442. (IF 6.147)
2. Jayaraman Theerthagiri, K. Karuppasamy, Seung Jun Lee, Shwetharani R, Hyun-Seok Kim, S.K. Khadheer Pasha, Muthupandian Ashokkumar, Myong Yong Choi, Fundamentals and comprehensive insights on pulsed laser synthesis of advanced materials for diverse photo- and electrocatalytic applications, *Light-Science & Applications*, Accepted (2022) ([LSA20211728RRR]) (IF 17.78)
3. Vidhya R. Sri, Dr. R. Shwetharani, Jalalah Mohammed, Alsaiari Mabkhoot, Dr. R. Geetha Balakrishna, Farid A. Harraz, Review on Electrochemical Sensing of Triclosan using Nanostructured Semiconductor Materials, *Chem Electro Chem*, 2022, 10.1002/celec.202101664 (IF 4.59)
4. Arnet Maria Antony, Vishal Kandathil, Manjunatha Kempasiddaiah, R.Shwetharani, R. Geetha Balakrishna, Salah M.El-Bahy, Mahmoud M.Hessien, Gaber A.M.Mersal, Mohamed M.Ibrahim, Siddappa A.Patil. Graphitic carbon nitride supported palladium nanocatalyst as an efficient and sustainable catalyst for treating environmental contaminants and hydrogen evolution reaction, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2022, 647, 129116 (IF 4.5)
5. Chandan Hunsur Ravikumar, Shwetharani Ramu, Sakar Mohan & R. Geetha Balakrishna, MoSe₂ nanoflowers as a counter electrode for quantum dots sensitized solar cells, *Journal of Materials Science: Materials in Electronics*, 2022, 33, 12201–12209 (IF 2.4)

Year: 2021

6. S. Akash, R. Shwetharani, J. Kusuma, S. Akhil, R. Geetha Balakrishna, Highly efficient and durable electron transport layer for QDSSC: An integrated approach to address recombination losses, *Journal of alloys and compounds*, November 2021, 10.1016/j.jallcom.2021.162740 (IF 5.31)
7. Jesna K George, Shwetharani Ramu, Vishaka V. Halali, R. Geetha Balakrishna, Inner Filter Effect as a Boon in Perovskite Sensing Systems to Achieve Higher Sensitivity

Levels, *ACS applied materials and interfaces*, November 2021, doi.org/10.1021/acsami.1c17061 (IF 9.2)

8. S Akash, **R Shwetharani**, J Kusuma, R Geetha Balakrishna, Insights and future perspectives for constructing efficient electron pathways in photoanodes of QDSSCs, *Solar energy*, 2021, 224, 650-665 (IF 5.7)
9. **Shwetharani Ramu**, Takashi Hisatomi, Kazunari Domen. *Oxygen Evolution Activity of LaNbN₂O-Based Photocatalysts Obtained from Nitridation of a Precursor Oxide Structurally Modified by Incorporating Volatile Elements*. *Catalysts* 2021, 11(5), 566 (IF 4.1)

Year: 2020

10. **Shwetharani R**, Vignesh Nayak, M.S.Jyothi, R.Geetha Balakrishna, *Review on recent advances of core-shell structured lead halide perovskites quantum dots*, *J of Alloys and Compounds*, 834, 2020, 155246 (IF 5.31)
11. **Shwetharani R**, Halali V. Vishaka, Kusuma J, R. Geetha Balakrishna, *Green to Blue Light Emitting CsPbBr₃ Perovskite by Ligand Exchange and its Encapsulation by TiO₂ for Tandem Effect in Photovoltaic Applications*, *ACS Appl. Nano Mater.* 2020, 3, 6, 6089–6098 (IF 5.097)
12. **R. Shwetharani**, Samadhan Kapse, Ranjit Thapa, D. H. Nagaraju, R. Geetha Balakrishna, *Dendritic Ferroselite (FeSe₂) with 2D Carbon-Based Nanosheets of rGO and g-C₃N₄ as Efficient Catalysts for Electrochemical Hydrogen Evolution*, *ACS Appl. Energy Mater.* 2020, 3, 12, 12682–12691 (IF 6.023)

13. **R. Shwetharani**, T. Sushmitha, G. U. Preethi, R. Geetha Balakrishna, *Amplification of active sites and porosity for the adsorption of QDs via the induction of the rare-earth element La into TiO₂ for enhanced photovoltaic effects in QDSSCs*, **New J. Chem.**, 2020,44, 20441-20448 (3.591)
14. Vishaka V Halali, **R Shwetharani**, R. Geetha Balakrishna, Srinivasa Budagumpi, *Ultra-trace level chemosensing of uranyl ions; scuffle between electron and energy transfer from perovskite quantum dots to adsorbed uranyl ions*, **Microchemical Journal**, 156, 2020, 104808 (IF 4.8)
15. Chandan Hunsur Ravikumar, **Shwetharani R**, R. Geetha Balakrishna, *Surface modified glass substrate for sensing E. coli using highly stable and luminescent CdSe/CdS core shell quantum dots*, **Journal of Photochemistry and Photobiology B: Biology**, 2020, 204, 111799 (IF 6.2)
16. **R. Shwetharani**, H.R. Chandan, M. Sakar, Geetha R. Balakrishna, Kakarla Raghava Reddy, Anjanapura V. Raghunath, *Photocatalytic semiconductor thin films for hydrogen production and environmental applications*, **International journal of hydrogen energy**, 45 (36), 2020, 18289-18308. (IF 5.8)

Year: 2019

17. **R Shwetharani**, R Geetha Balakrishna, *One-Pot Synthesis of Flower like FeS₂ as Counter Electrode for Quantum Dot Sensitized Solar Cells*, **Materials Today: Proceedings**, 9, 2019, 594-598 (IF 1.24)
18. **R. Shwetharani**, D.H. Nagaraju, R. Geetha Balakrishna, V. Suvina, *Hydrogenase Enzyme like Nanocatalysts FeS₂ and FeSe₂ for Molecular Hydrogen Evolution Reaction*, **Materials Letters**, 2019, 248, 39-42. (IF 3.4)
19. Hemavathi B, Akash S, Shanmukappagouda, Kusuma J, Trupthi Devaiah C, **Shwetharani R**, R. Geetha Balakrishna, Ahipati T. N, *New 2-methoxy-4,6-bis(4-(4-nitrostyryl)phenyl) nicotinonitrile: Synthesis, characterization and DSSC*

study, Journal of Photochemistry and Photobiology A: Chemistry, 377, 2019, 75-79. (IF 4.2)

20. Rajesha Bedre Jagannatha, **Shwetharani R**, Mahesh Padaki, *ZnO Zeolite Nanocomposite for Photocatalytic Elimination of Benzophenone and Caffeine*, **Chemistry Select**, 2019, 4 (6), 1989-1993. (IF 2.1)
21. **Shwetharani R**, Sakar Mohan, C. A. N. Fernando, Vassilios Binas and Geetha R Balakrishna, *Recent Advances and Strategies Applied to Tailor Energy levels, Active Sites and Electron Mobility in Titania and its Doped/Composite Analogues for Hydrogen Evolution in Sunlight*, **Catal. Sci. Technol.**, 2019, **9**, 12-46. (IF 6.1)

Year: 2018

22. **Shwetharani R**, R Geetha Balakrishna, *One-Pot Synthesis of Flower like FeS₂ as Counter Electrode for Quantum Dot Sensitized Solar Cells*, **Materials Today: Proceedings**, MATPR7043, 2018. (IF 1.2)
23. J Kusuma, R Geetha Balakrishna, Siddappa Patil, MS Jyothi, HR Chandan, **R Shwetharani**, *Exploration of graphene oxide nanoribbons as excellent electron conducting network for third generation solar cells*, **Solar Energy Materials and Solar Cells**, 2018, 183, 211-219. (IF 7.2)
24. J Kusuma, R Geetha Balakrishna, Siddappa Patil, MS Jyothi, HR Chandan, **R Shwetharani**, *Graphene Ribbons Tilting the efficiency scales*, 2018, **CURRENT SCIENCE**, 115, 4, 603. (IF 0.7)
25. **R Shwetharani**, M Sakar, HR Chandan, R Geetha Balakrishna, *Observation of Simultaneous Photocatalytic Degradation and Hydrogen Evolution on the Lanthanum Modified TiO₂ Nanostructures*, **Materials Letters**, **2018**, doi.org/10.1016/j.matlet.2018.02.031. (IF 3.4)

26. **R. Shwetharani**, A Poojashree, Geetha R Balakrishna, MS Jyothi. *La activated high surface area titania float for the adsorption of Pb (ii) from aqueous media*. **New J. Chem.**, 2018, 42, 1067-1077. (IF 3.5)

Year: 2017

27. Rajesha B J, **R. Shwetharani**, Mahesh Padaki and R. Geetha Balakrishna, *An efficient method for the synthesis of photo catalytically active ZnO nanoparticles by a gel-combustion method for the photodegradation of Caffeine*, **Nanochem Res**, 2017, 2(1): 86-95.

Year: 2016

28. **R. Shwetharani**, R. Geetha Balakrishna, *Efficient Algal Lipid Extraction via Photocatalysis and its Conversion to Biofuel*, **Applied Energy**, 2016, 168, 364. (IF 9.7)
29. **R. Shwetharani** and R Geetha Balakrishna, *Photo-Active Float for Field Water Disinfection*, **Photochem. Photobiol. Sci.**, 2016, 15, 447. (IF 2.9)
30. M. S. Jyothi, P. D'Souza Laveena, **R. Shwetharani**, R. Geetha Balakrishna, *Novel hydrothermal method for effective doping of N and F into nano Titania for both, energy and environmental applications*, **Mater. Res. Bull.**, 2016, 74, 478. (IF 4.6)
31. Laveena P. D'Souza, **R. Shwetharani**, Vipin Amoli, C.A.N. Fernando, Anil Kumar Sinha, R. Geetha Balakrishna, *Photoexcitation of Neodymium Doped TiO₂ for Improved Performance in Dye-Sensitized Solar Cells*, **Materials & design**, 2016, 104, 346. (IF 7.9)
32. V. S. Babu, M. S. Jyothi, Laveena P D'Souza, **R. Shwetharani**, Mahesh Padaki, R. Geetha Balakrishna, *Elimination of an Endocrine Disruptive Chemical by PSf/TiO₂ hybrid Membranes via Membrane Rejection and Photocatalytic Oxidation*, **J. Appl. Memb. Sci. Tech.**, 2016, 19, 19.

Year: 2015

33. **R. Shwetharani**, C. A. N. Fernando, R. Geetha Balakrishna, *Excellent hydrogen evolution by a multi approach via structure–property tailoring of titania*, **RSC Adv.**, 2015, 5, 39122. (IF 3.3)

Year: 2014

34. **R. Shwetharani**, M. S. Jyothi, P. D. Laveena, R. Geetha Balakrishna, *Photoactive Titania Float for Disinfection of Water; Evaluation of Cell Damage by Bioanalytical Techniques*, **Photochem. Photobio.**, **2014**, 90, 1099. (IF 3.4)
35. **R. Shwetharani**, R. Geetha Balakrishna, *Comparative Study of Homogeneous and Heterogeneous Photo-oxidative Treatment on Bacterial Cell via Multianalytical Techniques*, **J. Photochem. Photobio. A: Chem.**, **2014**, 295, 11. (IF 4.2)

Book Chapters:

- R. Shwetharani, M.S. Jyothi, M. Dinamani and S. Radoor, Chapter 6: Progress in Photocatalysis for Hydrogen Evolution and Environmental Remediation, Book: Emerging Nanomaterials for Catalysis and Sensor Applications - 1st Edition (routledge.com), Taylor and Francis group, 2023, ISBN: 9781003218708.
- Karthikeyarajan Vinothkumar, R Shwetharani, R Geetha Balakrishna, Membrane-based separation technologies for zero liquid discharge, Concept of Zero Liquid Discharge, Elsevier, 2023, Pages 109-128.
- Shwetharani R, Chandan Hunsur Ravikumar, Jyothi M. S., R. Geetha Balakrishna, Applications of Quantum Dots in Solar Cells, *Elsevier*. 2023, 277-311.
- ChandanHunsur Ravikumar , Lavanya C , Akash S , Shwetharani R , Werasak Surare ungsahi , R. Geetha Balakrishna, Chapter 8 - Nanomaterials for organophosphate sensing: present and future perspective, 2023, 183-202.
- Shwetharani R, Yathish K V, Jyothi M S, Lavanya C, Sabarish Radoor, R Geetha Balakrishna, Natural Fibre Reinforced Vinyl Ester Composites: Influence of Silica Nanoparticles on the Thermal and Mechanical Properties, *CRC Press, Taylor & Francis Group*, 2022 (Accepted)
- M.S. Jyothi, R. Shwetharani, Sabarish Radoor, and R. Geetha Balakrishna, Switchable photovoltaic effect in solar cells: Architecture, features, and future scope, Book: Functional Materials Processing for Switchable Device Modulation, Wood head Publishing (*Elsevier*), 2022, 161-178.
- Shwetharani R, Bindu K, Laveena P D'Souza, R. Mithun Prakash, and R. Geetha Balakrishna, Anion modified photocatalysts, (book title: Photocatalytic Systems by Design: Materials, Mechanisms and Applications), *Elsevier* (publisher), 2021, 55-83, [10.1016/B978-0-12-820532-7.00002-3](https://doi.org/10.1016/B978-0-12-820532-7.00002-3)

- M Sakar, HR Chandan, R Shwetharani, Graphene Paper-Based Electrochemical Sensors for Biomolecules, 2019, Elsevier, 297-320.

Patent:

1. Bi-Functional Product for use in Acid-Free Reduction of Toxic Chromium (Vi), its Synthesis and Uses, R. Geetha Balakrishna, Mahesh S Padaki, Jyothi M S, Laveena D'Souza and Shwetharani R – Granted
2. Method of Extraction of Algal Oil by Photo Catalysis, R. Geetha Balakrishna, Shwetharani R- Granted- 508931

International Fellowship:

JAUW FY2019 **International Fellowship from Japanese Association of University Women** to work in Centre for Energy and Environmental Science, Shinshu University under the supervision of **Professor Kazunari Domen** for six months (October 1st 2019 to March 31st 2020).

Conference papers presented:

1. Shwetharani R, Samadhan Kapse, Ranjit Thapa, D H Nagaraju, R Geetha Balakrishna, 2D Hybrid Nanosheets Composites FeSe₂/g-C₃N₄, FeSe₂/GO and FeSe₂/rGO as Electrocatalyst for Hydrogen Evolution Reaction, International Conference on Recent Trends in 2D Nanomaterials: Synthesis, Properties and Applications: A Virtual Event, Feb 24-26, 2021. (Best oral-2nd prize)
2. Participated in webinar titled "APPLICATION OF GREEN CHEMISTRY TOWARDS SUSTAINABLE TECHNOLOGY" organized by Department of Chemistry, Dr Ambedkar Institute of Technology on 27-08-2020
3. Attended DST-ACS workshop on "MASTERING THE PUBLISHING PROCESS, July-2020
4. **Shwetharani R**, Pranav Kulkarni, Suvina V, D H Nagaraju, R Geetha Balakrishna, *2D FeSe₂/g-C₃N₄ and FeSe₂/rGO Hybrid Nanosheets composites as Electrocatalyst for Electrochemical Hydrogen Evolution*, First Indian Materials Conclave and 30th Annual General Meeting of MRSI, IISc, Bangalore, February 12-15, 2019 (Oral)
5. Shwetharani R, R Geetha Balakrishna, **Ligand Assisted Bandgap Tuning of CsPbBr₃ Perovskite Quantum Dots for Tandem Photovoltaics**, 10th international conference on Materials for advance technologies, Marina Bay Sands, 23-28th June, 2019, Singapore
6. Participated in the International conference "International Conference on Frontiers in Materials from Basic Science to Real Time Application", Jain University, Bangalore, 13 to 16 March 2019.

7. Sushmitha T, **R. Shwetharani**, M. Sakar, R. Geetha Balakrishna, Simultaneous Photocatalytic Degradation and Hydrogen Evolution on the Lanthanum Modified TiO₂ Nanostructures, International Conference on Green Methods for Separation, Purification and Nanomaterial Synthesis, held during 24-25th April 2018.
8. **R. Shwetharani**, T. Sushmitha, R. Geetha Balakrishna, Augmentation of Active sites and porosity for QDs adsorption by induction of rare earth element La into TiO₂ towards Energy Applications, International Conference on Green Methods for Separation, Purification and Nanomaterial Synthesis, held during 24-25th April 2018.
9. Shwetharani R, T. Sushmitha, R Geetha Balakrishna: "*Tailoring the active sites of nano-structured TiO₂ through Lanthanum doping for High Performance Quantum Dot-Sensitized Solar cells*" at **International Conference on Nanomaterials and their Applications**, held on March 1-2, 2018 at University of Mysore, Mysore.
10. Shwetharani R, Poojashree A, R Geetha Balakrishna: "*Adsorption of Toxic Heavy metal Pb(II) Ions from aqueous solutions using La doped TiO₂ nanostructures*" held on Feb 27-28, **GCNOC – 2017**, St Aloysius college, Mangalore.
11. Shwetharani R, Preethi G U, Laveena P'Dsouza and R Geetha Balakrishna: "*Enhanced photovoltaic performance from Nd doped TiO₂ semiconductor for quantum dot-sensitized solar cell*" at **International conference on green chemistry and nanotechnology opportunities and challenges -2017**, 28th -29th Feb 2017, St Aloysius college, managalore (received best poster award)
12. Attended "National Seminar on Frontier in Materials and Chemical Sciences" at Centre for Nano and Material Sciences (CNMS), Jain University, 30 to 31 Aug 2018.
13. **R. Shwetharani**, Laveena P D'souza, R. Geetha Balakrishna, *Enhanced Photovoltaic Performance with ZnS Modification in Nd-TiO₂ Semiconductor for Quantum Dot-Sensitized Solar Cells*, IUMRS-ICYRAM-2016, Dec 11-15, IISc, Bangalore.
14. Shwetharani R and R Geetha Balakrishna: Improved Hydrogen Generation through a multi approach by structure property tailoring of Titania, **ICNANO-2016**, 21st to 23rd April 2016, **Muddenahalli**, Chikkaballpur, Karnataka. (Oral)
15. **R. Shwetharani**, R. Geetha Balakrishna, *Algal lipid extraction through photocatalysis. National Conference on Advanced Nanotechnology and its applications*, 22-23rd Jan 2015, Bangalore. (Oral)

16. **R. Shwetharani**, R. Geetha Balakrishna, *Comparison of the effectiveness of TiO₂ and neutral photo-Fenton system photocatalysis for the destruction of s.typhi: Evaluation by multianalysis techniques*, ICRAES-2014, M. S. Ramaiah Institute of Technology, Bangalore.
17. **R. Shwetharani**, R. Geetha Balakrishna, *Enhanced Hydrogen Evolution from FeTiO₂ by Photocatalytic Water Splitting*, 7th Bangalore India Nano. 5-6th Dec 2014.
18. **R. Shwetharani**, R. Geetha Balakrishna, *Comparative Study of Homogeneous and Heterogeneous Photo-oxidative Treatment on Bacterial Cell via Multianalytical Techniques*, International Conference on Frontiers in Nano Science, Technology and Applications, 20-22nd Dec 2014, **Puttaparthi, Andhra Pradesh**. (Poster)
19. Advanced workshop on Scanning Probe Microscopy, 4th July 2014, CeNSE, IISc, Bangalore.
20. **R. Shwetharani**, K. R. Chethana, R. Geetha Balakrishna, *Inactivation of Salmonella typhimurium, a Water Borne Pathogen by a Feasible Photocatalysis*, SASTRA University, Thanjavur, Tamilnadu.
21. **R. Shwetharani**, R. Geetha Balakrishna, *Disinfection of water by Titanium dioxide/Doped TiO₂*, RAMBSWERD-2013, KSSRDI, Bangalore.

MSc Projects guided:

1. Suveditha (Title: Degradation of water borne pathogens by a Feasible Photocatalysis using Titanium Dioxide)
2. Jay Patel (Title: Nd-TiO₂ Semiconductor for Quantum Dot-Sensitized Solar Cells)
3. Adarsh (Title: Nd-TiO₂ Semiconductor for Quantum Dot-Sensitized Solar Cells)
4. Pooja Arkesh (Title: Adsorption of Toxic Heavy Metal Pb (II) ions from aqueous solutions using La doped TiO₂ nanostructures)
5. Preethi G U (Title: Enhanced Photovoltaic Performance from Nd doped TiO₂ Semiconductor for Quantum Dot-Sensitized Solar Cells)
6. Sushmitha T (Title: Tailoring the active sites of nanostructured TiO₂ through lanthanum doping for high performance quantum dot sensitized solar cells)

Academic/Research Credentials

- Research project on “**Synthesis of pyridine derivatives**” was carried out at BIOCON, Bangalore.
- Fellowship availed: DST (through sponsored research project)
- Best Student achiever award in research domain (31/1/2016 to 31/7/2016) from Centre for Nano and Material Sciences, Jain University with a cash prize.

- Disinfection research work selected for publishing in magazine **World Biomedical Frontiers** <http://biomedfrontiers.org/infection-2014-12-27/>
- Patent 1 (Bi-Functional Product for use in Acid-Free Reduction of Toxic Chromium (Vi), its Synthesis and Uses)
- Best Poster award: 2 (Mangalore University and Jain University)

Personal Information

Date of birth : 10th May 1988

Gender : Female

Languages known : Kannada, English, Hindi

Nationality : Indian

Marital status : Married

Address (Res.) : #1216, Sumeru, Unit No. 102
3rd Main, 7th Cross, BEML 3rd Stage,
Rajarajeshwari Nagar, Bangalore – 560 098

(R. Shwetharani)