

# CURRICULUM VITAE

**Dr. H. JOY PRABU Ph.D.**

Assistant Professor  
Department of Physics  
St. Joseph's College (Autonomous),  
Tiruchirappalli, India -620 002.



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Web of Science Researcher ID: GRS-0790-2022

Vidwan ID: 477986

## Educational Profile

Course	Discipline	School/College/ Institution	Board/University	Year of Passing
Ph. D	Physics	St. Joseph's College (Autonomous), Tiruchirappalli.	Bharathidasan University	2017
M. Phil	Physics	St. Joseph's College (Autonomous), Tiruchirappalli.	Bharathidasan University	2013
M. Sc	Physics	St. Joseph's College (Autonomous), Tiruchirappalli.	Bharathidasan University	2012
B. Ed	Physical Science	St. Xavier's College of Education, Palayamkottai.	Tamil Nadu Teachers Education University	2010
B. Sc	Physics	St. Joseph's College (Autonomous), Tiruchirappalli.	Bharathidasan University	2009
H. Sc	Maths, Physics, Chemistry, Biology.	Nirmala Hr Sec School, kolathur.	State board	2006
S.S.L.C	Maths, Science, History & Geography.	Nirmala Hr Sec School, kolathur.	State board	2004

## Areas of Research Interest

Nanoscience and Nanotechnology, Nano crystallization, Material Science, Green Synthesis method, Electrochemical Synthesis, Computational Technology, Materials Characterization and applications.

## Personal

- Name: H. Joy Prabu
- Date of Birth: June 06, 1989
- Nationality: Indian
- Sex: Male

## Employment Record

- Assistant Professor: St. Joseph's College (Autonomous), Tiruchirappalli from June 2016 onwards: Department of Physics.

## Faculty Development Program attended

- Faculty Development Program on "Tuning Young Faculty Towards Effective Teaching" Organized by St. Christopher's College of Education, Chennai-07, 23- 27 Jan, 2018.
- Induction Programme into Jesuit Education organized by Jesuit Higher Education Commission, Madurai Province, Tiruchirappalli-02, 7-9 Jun, 2016.

## Patent

Country	Application Number	Date of Applied	Title of the Invention
INDIA	202341019984	2023-03-22	Cost-effective way of MXene synthesis in a controlled environment

**Research projects from National (N) / International (IN), funding agencies and Total grants received.**

Title of the Project	Type	Status	Finding Agency	Duration	Amount in Rupees	Year
TNSCST- Student Project Scheme (2021-2022)	MI	C	Tamil Nadu State Council for Science	1 Year	7500	2022
Research Grant (SJCRG 2022-2023)	MI	O	St. Joseph's College (Autonomous)	1 Year	40000	2022
Research Grant (SJCRG 2021-2022)	MI	C	St. Joseph's College (Autonomous)	1 Year	8500	2021

**Academic Member**

Body Name	Position	Period
Campus Ministry	Member	2016-
Asian Polymer Association	Life Member	2022 onwards
Micro Quality Circle Members, St. Joseph's College (Autonomous), Tiruchirappalli	Member	2023-
The Society for Advancement of Electrochemical Science and Technology- (SAEST)	Life Member	2023 onwards

**Ph.D. Guidance Details**

Scholar Register Number	Scholar Name	Category	Registration Date	Status
BDU2320212780244	Novin Senetra Roy G	Part-Time	01.02.2023	on-going
BDU2310212780479	Snowlin V	Full-Time	02.11.2023	on-going
BDU2310212780586	Shiphi Amirthakumari S	Full-Time	27.12.2023	on-going
BDU2410212780949	Elizabeth A	Full-Time	13.06.2024	on-going

**Resource Person: (Special Lectures / Workshops / Seminars Association Activities/ Alumni Meeting)**

Type of Programme	Title	Beneficiaries	Days	Date
JosTEL	Nanoscience and Technology	60	1	28-04-2022
Workshop	One Day Workshop on X-ray diffraction data: Measurement and analysis	120 PG Students	1	17-12-2021
Workshop	The Workshop on Employability Skills for II UG Students	200	1	10-12-2021
One day workshop	Material Science	Physics & Chemistry students	1	31-01-2020
Association Meeting	Smart Materials (SM 2018)	150 Physics Students	1	26-07-2018
Association Meeting	Advances in Nanotechnology Research	200 students	1	05-12-2017
Physics Association	Smart Materials	Physics students	1	28-11-2016

**Publications of Books**

Book Title	Publisher	Edition	ISBN	Year
Materials, Energy and Environment Engineering (Book Chapter-pp 159-165)	Springer Nature Singapore	FIRST	978-981-10-2674	2017
Beginner`s guide for HIGH TEMPERATURE SUPERCONDUCTORS	Self	FIRST	978-93-5620-117-0	2022
Material Syntheses: An Environmentally Friendly Route	Self	FIRST	978-93-5786-273-8	2023

**Publications**

Journal Publications

- Synthesis of Hydroxyapatite (HAp) from Eggshells via Thermal Decomposition Method for the Application of Dye Adsorption, Journal of the Indian Chemical Society (Elsevier), <https://doi.org/10.1016/j.jics.2024.101321>, 2024.

- Synthesis and Characterization of rGO-ZnO/Elwendia persica Seed Reinforced Hybrid Nanocomposite for High-Performance Supercapacitor Applications, Journal of Inorganic and Organometallic Polymers and Materials (Springer Nature), <https://doi.org/10.1007/s10904-024-03293-z>, **2024**.
- Extraction and characterization of novel fibers from Tecoma stans Linn bark for use as reinforcement in polymer composites, International Journal of Biological Macromolecules (Elsevier) 270 (2024) 132492, <https://doi.org/10.1016/j.ijbiomac.2024.132492>
- Extraction of cellulose nanocrystals from Cissus quadrangularis for sustainable biocomposite production, Biomass Conversion and Biorefinery (Springer Nature **2024**), <https://doi.org/10.1007/s13399-024-05820-x>
- Synthesis of integrated reduced graphene oxide-polyaniline nanocomposite for enhanced supercapacitor performance. Polymer Composites (John Wiley & Sons). 2024;1-14. doi:10.1002/pc.28676, **2024**.
- Green synthesis of silver/iron (Ag/Fe) and copper/iron (Cu/Fe) nanoparticles for cytotoxic investigation on henrietta lacks (HeLa) cancer cell, International Symposium on Lightweight and Sustainable Polymeric Materials (Springer Nature Singapore), **2023**.
- Synthesis and Characterization of Graphene-Doped Co<sub>3</sub>O<sub>4</sub> Nanotubes Electrode Material for Supercapacitor Application, Journal of Inorganic and Organometallic Polymers and Materials (Springer Nature), **2023**, <https://doi.org/10.1007/s10904-023-02995-0>
- Metal–Organic Frameworks (MOFs): The Next Generation of Materials for Catalysis, Gas Storage, and Separation. J Inorg Organomet Polym 33, 1757–1781 (**2023**). <https://doi.org/10.1007/s10904-023-02657-1>
- Bioreduction of gold nanocolloids using Quercus infectoria (Oliv): UV-assisted cationic-anionic dye degradation. Biomass Conv. Bioref. 13, 3463–3474 (**2023**). <https://doi.org/10.1007/s13399-023-03777-x>
- Study of Chua’s Circuit: Design and its Behaviour, Vol. VIII, No.2(I), ISSN: 2277-7067 (UGC CARE LIST), July – December :**2022**.

- Laser induced plant leaf extract mediated synthesis of CuO nanoparticles and its photocatalytic activity, Environmental Research Volume 212, Part B, 113295, <https://doi.org/10.1016/j.envres.2022.113295>, September 2022.
- Colorimetric sensing of Mercury ions using green synthesized silver nanoparticles from *Trigonella foenum (Linnaeus)*, Materials Today: Proceedings, Elsevier, 2022.
- Antibacterial study of silver nanoparticles synthesized using *Strychnos Potatorum(Inn)*- Green synthesis method, Materials Today: Proceedings, Elsevier, (Accepted), 2022.
- Temperature effect on CuO nanoparticles: antimicrobial activity towards bacterial strains, Surfaces and Interfaces (Elsevier), <https://doi.org/10.1016/j.surfin.2020.100761>, 15 October 2020.
- Synthesis and characterizations studies of ZnO and ZnO-SiO<sub>2</sub> nanocomposite for biodiesel applications, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2020.05.034>, Elsevier, 2020.
- Production of sustainable biofuel from biogenic waste using CuO nanoparticles as heterogeneous catalyst, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2020.05.069>, Elsevier, 2020.
- The role of pH in enhancing the capacity of CuO nanoparticles for antibacterial activity, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2020.05.222>, Elsevier, 2020
- A simple sonication-assisted exfoliation and characterization of few layered graphene nanosheets, J. Pure Appl. Ultrason. 40, pp.22-25. 2018.
- Facile sonication-assisted synthesis and characterisations of silica decorated graphene nanocomposites, Micro & Nano Letters (IET), DOI: 10.1049/mnl.2017.0656, ISSN 1750-0443, Impact Factor: 0.723, 2018.
- Comparative Studies on Bio and Chemically Synthesized CuO Nanoparticles and their Antibacterial Activity, International Research Journal of Pharmacy (IRJP), Volume No.:8(10), ISSN.:2230: 8407, Impact Factor:0.751, 2017.

- Synthesis and characterization of ZnO/CNT nanocomposites, International Research Journal of Engineering and Technology, Volume No.:4 (9), PP.:86-88, ISSNO.:2395-0056, Impact Factor:6.17, **2017**.
- Green Synthesis and Characterizations of Flower Shaped CuO Nanoparticles for Biodiesel Application, Sensors & Transducers, Volume No.:210 (3), PP.:38-41, ISSNO.:1726-5479, **2017**.
- Synthesis and Characterizations of Needle- Shaped CuO Nanoparticles for Biodiesel Application, International Journal of Advanced Research (IJAR), Volume No.:5 (1), PP.:1642-1648, ISSNO.:2320-5407, Impact Factor:6.11, **2017**.
- Facile Preparation and Characterizations of Silica decorated Graphene nanocomposites, International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Volume No.:3, PP.:941-945, ISSNO.:2394-4099, Impact Factor:4.91, H Index No.:16, **2017**.
- Ultrasonication-assisted Transesterification for Biodiesel Production by Using Heterogeneous ZnO Nanocatalyst, Environmental Progress & Sustainable Energy, Volume No.:37 (1), ISSNO.: 1944-7450, Impact Factor:1.672, **2017**.
- Ultrasonication Assisted Production of Biodiesel from Sunflower Oil by Using CuO: Mg Heterogeneous Nanocatalyst, IOP Conference Series: Materials Science and Engineering, doi:10.1088/1757-899X/225/1/012213, Open Access, **2017**.
- Plant-mediated biosynthesis and characterization of silver nanoparticles by leaf extracts of *Tragia involucrata*, *Cymbopogon citronella*, *Solanum verbascifolium* and *Tylophora ovata*, Karbala International Journal of Modern Science (Elsevier), Volume No.:1 (4), PP.:237-246, ISSNO.: 2405-609X, C Index No.:5, **2015**.
- Green synthesis and characterization of silver nanoparticles by leaf extracts of *Cycas circinalis*, *Ficus amplissima*, *Commelina benghalensis* and *Lippia nodiflora*, International Nano Letters (Springer), Volume No.:5 (1), PP.:43-51, ISSNO.:2008-9295, C Index No.:12, **2015**.

- Greener cum chemical synthesis and characterization of Mg doped ZnS nanoparticles and their engineering band gap performance, Journal of Engineering Research and Applications, Volume No. :5(8), PP.:99-105, ISSNO.:2248-9622, Impact Factor:5.17, **2015**.
- Flower-Shaped CuO Nanostructure Synthesized by Sonochemical Method and the effect of NaOH concentrations, International Journal of Advanced Research, Volume No.:3 (8), PP.:1091-1096, ISSNO.:2320-5407, Impact Factor:6.11, **2015**.
- Antibacterial activity of silver nanoparticles synthesized from plant leaf extract of *Cycas circinalis*, *Ficus amplissima*, *Commelina benghalensis* and *Lippia nodiflora* leaves, Journal of Chemical and Pharmaceutical Research, Volume No.:7 (9), PP.:443-449, ISSNO.:0975-7384, Impact Factor:0.14, H Index No.:22, **2015**.
- Hydrothermal Synthesis of ZnO Nano-Honeycomb Structures and their Activity against Pathogenic Bacteria, International Journal of PharmTech Research, Volume No.:8 (6), PP.:65-71, ISSNO.:2455-9563, Impact Factor:0.66, H Index No.:28, **2015**.
- Eco-Friendly Electrochemical Synthesis of Rod-Shaped Ag Nanostructures for Battery Application, International Journal of ChemTech Research, Volume No.:8, PP.:271-277, ISSNO.: 2455-9555, Impact Factor:0.598, H Index No.:23, **2015**.
- Ultrasound tailoring of industrially important nano particles, International Journal of Scientific Research Engineering & Technology (IJSRET), Volume No.:2 (2), PP.:056-059, ISSNO.:2278-0882, Impact Factor:3.21, **2013**.
- Tailoring of CdSe Nanoparticles by Different Techniques, International Journal of Scientific Research, Volume No.:2 (6), PP.:524-525, ISSNO.:2278-0882, Impact Factor:3.24, **2013**.

## Conference Publications

- Novel Laser induced plant leaf extract mediated synthesis of CuO nanoparticles and its catalytic activity, International Conference on Emerging Trends in



Nanoworld (ICETN 2017), VELS University, 27<sup>th</sup> & 28<sup>th</sup> February 2017, Chennai-600 117.

- Synthesis and characterization of some Binary Quantum Dots-National Conference on Functional Materials-19<sup>th</sup> Sep 2013 at Sacred Heart College, Tirupatture-635 601.
- Synthesis of Silver Nanoparticles- National Symposium on Nanosciences and Nanotechnology, 30<sup>th</sup> September – 1<sup>st</sup> October 2013, Department of Nanosciences and Technology, Karunya University, Coimbatore-641 114.
- Plant Leaf extract mediated green synthesis and characterization of Laser induced Bio-nanoparticles and their Catalytic applications, International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites, Mahatma Gandhi University, Kerala 686560.
- Green Synthesis of Silver nanoparticles using Aloe vera (*Aloe barbadensis*) Extracts, International Conference on Smart Materials 2015, Sacred Heart College, Tirupattur. P. 24.
- Innovations and Future Research Dimensions on Nano bio Pharmaceutical Technology, Green Sonochemical Synthesis of Silver Nanoparticles and their applications, Anna University, Bharathidasan Institute of Technology Campus, Tiruchirappalli, page. 54.
- Electrochemical Synthesis of Silver Nanoparticles, 3<sup>rd</sup> International Science Congress, Karunya University, Coimbatore (ISBN: 978-93-83520-24-4), page 230.

## **Courses Taught**

- Materials Science
- Applied Physics-I & II
- Numerical and Statistical methods
- Electrodynamics
- Classical Mechanics
- Mathematical Physics

- Solid State Physics
- Digital Electronics
- Method of Spectroscopy

### **Invited Talks**

- Smart Materials, Holy Cross College (Auto), 28 Jan 16, Tiruchirappalli, Tamilnadu, India.
- Advances in Nanotechnology Research, Holy Cross College (Auto), 05 Dec 17, Tiruchirappalli, Tamilnadu, India.
- Nanomaterials, Ananda College, Devakkottai, 26 July 18, Tamilnadu, India.
- Material Science, Bharath Vidhya Mandhir Arts & Science College, Jan, 31, 2020, Tiruvannamalai-606 707, Tamilnadu, India.

### **Seminars / Conferences / Workshops attended**

- International Conference – **Nano Technology (INDO-US)**, St. Joseph's College (Autonomous), Tiruchirappalli-620 002.
- Workshop on Powder, Nano & Thin Film Characterization using X-Ray Diffraction Techniques (X'Raydiate-2012), (26-27 Sep 2012), Avinashilingam University, Coimbatore, Tamil Nadu-641 043.
- National Conference on Materials for Future Technology (NCFMT'12), (28<sup>th</sup> Sep 2012), Department of Physics, Sacred Heart College, Tirupatture-635 601.
- Structure and Thermodynamics of Emerging Materials (STEM-2012), 5-6 November, 2012, IGCAR Kalpakkam, Chennai, Tamil Nadu-603 102.
- National Conference on Nano Materials (3-4 December, 2012), Department of Physics, Karunya University, Coimbatore-641 114.
- Convergence-2012, Resent Trends in Materials Research, 21-22 December, 2012, Department of Physics, National Institute of Technology, Tiruchirappalli-620 015.

- Short term courses on Ultrasound and Its Applications, Department of Chemical Engineering & Department of Chemistry, National Institute of Technology, Tiruchirappalli-620 015.
- School on Advanced NMR Spectroscopy, August 12-24,2013, UGC-Networking Resource Center, School of Chemistry, **Hyderabad- 500 046.**
- International Seminar on “Nanostructure- Based Solar Photovoltaic’s”, (22<sup>nd</sup> October 2013), School of Mechanical and Building Sciences (SMBS), **VIT Chennai-600 127.**
- National Seminar on Emerging Trends in Solar Energy-2013, October 23, 2013, Department of Chemistry, B.S. Abdur Rahman University, **Vandalur, Chennai – 600 048.**
- National Conference on Functional Materials (NCFM’13), 19 September 2013, Department of Physics, Sacred Heart College, **Tirupattur- 635 601.**
- TEQIP Sponsored four-day workshop on “Applications of Nanotechnology in Mechanical Engineering”, 18-21 Dec 2013, NIT, Tiruchirappalli- 15.
- National Conference on Advanced Materials (NCAM-2014), 24<sup>th</sup> February 2014, Department of Physics, St. Joseph’s College (Autonomous), Tiruchirappalli- 620 002.
- NRC-M Workshop on Magnesium Alloys, UGC Networking Resource Centre for Materials, Dept. of Materials Engineering, **IISc, Bangalore- 560 012.**
- NRC-M Workshop on Biomaterials, May 2014, UGC Networking Resource Centre for Materials, Dept. of Materials Engineering, **IISc, Bangalore- 560 012.**
- NRC-M symposium on Mg alloys, 5-7 May 2014, UGC Networking Resource Centre for Materials, Dept. of Materials Engineering, **IISc, Bangalore- 560 012.**
- NRC-M workshop on Advances in Corrosion Engineering, 22-24 Dec, UGC Networking Resource Centre for Materials, Dept. of Materials Engineering, **IISc, Bangalore- 560 012.**

- Learning Physics Through Simple Experiments, IIT KANPUR, 2020-04-02 to 2020-06-10.
- Advanced Functional Materials for Energy Harvesting, Storage and Biomedical Applications, Bishop Moore College, Kerala, 2020-05-13 to 2020-05-19.
- Power Electronics Applications in Smart Grid and Electric Vehicles, Santhiram Engineering College, Andhra Pradesh, 2020-05-26 to 2020-05-31.
- Global Nanotech for Future Advancements, Department of Physics, Loyola College (Autonomous), Chennai, 2020-05-29
- Research Project proposal writing, St. Joseph`s College (Autonomous), Tiruchirappalli, 2020-06-01 to 2020-06-02.
- Current Trends & challenges in 3D Bioprinting Technology-2020 (CTC3DBT-2020), Vellore Institute of Technology (VIT), Vellore, 2020-07-05.
- International Webinar on Advanced Materials (Iwam-2021), Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-03-03 to 2021-03-04.
- Virtual Symposium on Recent Technological Advancements In Wide/Ultra-Wide Bandgap Semiconductor Materials, Devices and Applications: A Step Towards Atma Nirbhar Bharat., Birla Institute of Technology & Science, Pilani, 2021-04-10
- Faculty Development Programme on Problem Solving in Quantum Physics, PG & Research Department of Physics, Bishop Heber College, Tiruchirappalli, 2021-07-23 to 2021-07-24.
- Advanced Materials- Webinar Series 2021\_Event-1, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-08-24.
- Advanced Materials- Webinar Series 2021\_Event-2, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-09-20.

- Advanced Materials- Webinar Series 2021\_Event-3, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-10-21.
- Advanced Materials- Webinar Series 2021\_Event-4, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-11-15.
- Developing Online Courses in LMS, IQAC, ST. Joseph`s College (Autonomous), Tiruchirappalli, 2021-11-22 to 2021-11-23.
- Advanced Materials- Webinar Series 2021\_Event-5, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2021-12-20.
- International Conference on Advanced Materials 2022, Department of Physics, St. Joseph`s College (Autonomous), Tiruchirappalli, 2022-02-11 to 2022-02-12.
- Nanomaterials for emerging applications (NMEA-2022), National Institute of Technology (NIT-T), Tiruchirappalli, 2022-02-25 to 2022-02-26.
- International Seminar on E-tools for Research: Hand-on Practice, Department of Mechanical Engineering & CFRD, K.S.R. College of Engineering, Tiruchengode - 637215, Tamilnadu, India, 2024-08-09.
- National Intellectual Property Festival (NIPF- 2023) - Innovation and Intellectual Property Rights (IPR) Awareness Program, CSIR-IMMT, 2023.
- International Faculty Development Programme on Advanced Functional Materials: Energy, Environment and Sustainable Development, SRM TRP Engineering College SRM Nagar, Near Samayapuram, Tiruchirappalli - 621105, 2024-02-26

## **Computer Acquaintance**

- *General Packages Known:* MS Office, Adobe Photoshop, and Page maker.
- *Programs:* C, C++, Java.

## **Instrumentation**

- UV, FTIR and CV analysis,
- XRD, SEM, FESEM, AFM and TEM
- Antibacterial Studies

## **Achievements and Extracurricular Activities**

- Participated school level Science Working models, singing and drama competition and received applauds.
- Active member of student council.
- Group leader for primary education (SHEPHERD), St. Joseph's College.

## **Personal Skills**

- Good analyzing and planning capability (e.g. To Develop a well-equipped Physics Laboratory)
- Can adopt any conditions easily
- Hard Worker
- Team Work
- Capability to lead a team

## **Declaration**

I hereby declare that the above-mentioned information is correct, up to my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Yours Sincerely,



**(Joy Prabu. H)**

**Place:** Tiruchirappalli-620 002

**Date:** 09.09.2024