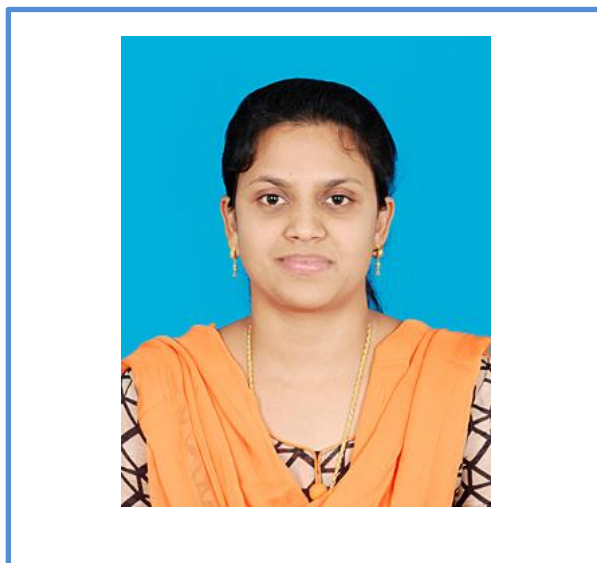


Faculty Profile - Department of Applied Physics



Name: **Dr. R. JEBA BEULA**

Designation: Assistant Professor

Office Address: Department of Applied Physics, SSAM.

E-mail: beular@karunya.edu, j.beula85@gmail.com

Areas of Specialization: Solar Cells, Thin Films, Nanomaterials

Professional Experience: (Total Year of Experience)

Title of the Profession	Employer	Duration
Assistant Professor	Karunya Institute of Technology and Sciences, Coimbatore	13 years

Academic Qualification (List from highest to lowest degree)

Degree	Board/University	Year of passing	Class/Grade	Subjects
Ph.D	Karunya Institute of Technology and Sciences	November 2018	Highly Commended	Dye Sensitized Solar Cells
M.Phil (F)	Manonmanium Sundaranar University	November 2008	First	Physics
M.Sc (F)	Sarah Tucker	April 2007	First	Physics

	College, Manonmanium Sundaranar University			
B.Sc	Rani Anna Govt. College for Women, Tirunelveli	April 2005	First	Physics

Projects Guided

Ph.D			
Name of the Scholar/Student	Title of the Project	Status (Completed/Pursuing)	Year of Ph.D Award
ARCHANA ASHOK	Multilayer Photoanodes for Dye sensitized solar cells Applications	Pursuing	Pursuing
FANNY JOSELIN	Transparent Dye sensitized Solar cells	Pursuing	Pursuing
HANNAH BENNET	Heterojunction Perovskite Solar Cells	Pursuing	Pursuing
SOLOMON RAJA	Transparent Perovskite Solar Cells.	Pursuing	Pursuing
M.Sc			
NAVIN DINESH A	Al doped TiO ₂ nanoparticles	Completed	2018
CLEMENT S.JOEL	Doped TiO ₂ nanoparticles as Photoanode for DSSC	Completed	2019
MAGESH R	Fabrication of Dye sensitized Solar Cells	Completed	2019
NISHIBA B J	Preparation and Characterization of Pure, Pb doped and Pb,Co co-doped TiO ₂ Nanoparticles	Completed	2020
N P AYADLIN	Preparation and characterization of CZTS, CoS and Carbon Counter Electrodes	Completed	2020
V. DIVYA	Metal Nanoparticles For Biomedical Applications - A Review	Completed	2021
S.DEEPTHI MOLE FRANCI	A Report On Perovskite Solar Cell, Its Progress, Fabrication And Manufacturing Techniques	Completed	2021

Details of the Publications

1. **Beula, R.J.**, Suganthi, D. & Abiram, A. TiO₂ photo-electrode with gold capping for improved observation in dye-sensitized solar cell. **Appl. Phys. A** **126**, 223 (2020).
2. **Jeba Beula, R.**, Suganthi, D., Abiram, A. et al. Transforming polymorphs of Co-doped TiO₂ nanoparticles: an efficient photo-electrode for dye-sensitized solar cells. **Appl Nanosci** **10**, 1173–1181 (2020).
3. **R. Jeba Beula**, D. Suganthi Devadason, B. Vidhya, “Incorporation of In in TiO₂ based photoanodes for enhancing the photovoltaic conversion efficiency of dye sensitized solar cells”, **Applied Nanoscience** , **Volume 8, Issue 6**, pp1389-1397 (2018).
4. **R. Jeba Beula**, Suganthi Devadason, V. Mahesh Kumar, "Effect of Titanium Coating on the Structural and Optical Properties of TiO₂ Thin Films for Improved Performance in Dye-Sensitized Solar Cells", **Springer Proceedings Physics., Recent Trends in Materials Science and Applications**, ISBN 978-3-319-44889-3 (2017) 189 437-450.
5. S. Vinodha, L. Vidhya, T. Ramya , **R. Jeba Beula** , P. Jegathambal, “Graphene-Metal Modified Electrochemical Sensors for Toxic Chemicals”, Graphene-Based Electrochemical Sensors for Toxic Chemicals, Published as part of the book series **Materials Research Foundations** Volume 82 (2020) Page 91-124. ISSN 2471-8890 (Print) ISSN 2471-8904 (Online) ISBN 978-1-64490-094-9.
6. **R. Jeba Beula**, Suganthi Devadason, S .Prathiba Ponmary, “Characterization of Spin Coated TiO₂ Nanocrystalline Thin Films Via Sol-Gel Method For Fabricating Dye-Sensitized Solar Cells”, **International Journal of Engineering Research & Technology**, ISSN: 2278-0181 (2017) 5 49-51.
7. **R. Jeba Beula**, Suganthi Devadason, “Effect of two surfactants on the physical properties of TiO₂ thin films for solar cell applications”, **International Journal of Advanced Material Science**, ISSN 2231-1211 (2013) 4 137-143.
8. M. Joice Priscilla, **R. Jeba Beula**, Suganthi Devadason, “Fabrication of Dye sensitized solar cell using TiO₂ nanoparticles”, **International Journal of Nanotechnology and Applications**, ISSN 0973-631X (2011) 5 303-307.

Details of the funded projects

Title of the Project	Funding Agency	Duration	Status
Modeling of Multilayer TiO ₂ Nanoparticles as Photo Anodes – An Experimental Approach to Enhance The	SERB, Govt of India	Under Review	Under Review

Performance of Dye-Sensitized Solar Cell CRG/2021/008280			
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Academic and Administrative responsibilities

1. Department Library in-charge
2. Department Website co-ordinator
3. Mentoring the students
4. Spiritual coordinator

Participation/presentation in Workshop/Seminar/Conference/Symposium/Colloquium

1. R. Jeba Beula, Suganthi Devadason and B. Vidhya, "TiO₂ with Titanium Blocking layer as a Photoelectrode for Enhanced Efficiency in Dye Sensitized Solar cells", DST sponsored National Conference on Nanomaterials (NCN-2019), 24-25 January 2019, LRG Government Arts College for Women, Tirupur, Tamilnadu, India.
2. R. Jeba Beula, A. Navin Dinesh and Suganthi Devadason, "Photovoltaic Performance of Dye Sensitized Solar Cells Using Al doped TiO₂ nanoparticles", National Conference on Molecules and Materials for Sustainable Development, 6 April 2018, Karunya Institute of Technology and Sciences, Coimbatore, Tamilnadu, India.
3. R. Jeba Beula, Suganthi Devadason and A. Navin Dinesh, "Preparation and Properties of Sol-gel Derived Al doped TiO₂ Nanoparticles", National Conference on Advances in Condensed Matter Physics, 2 March 2018, Hindustan Institute of Technology and Science, Chennai, Tamilnadu, India.
4. R. Jeba Beula, Suganthi Devadason and B. Vidhya, "Structural and Optical Properties of In doped TiO₂ Thin Films", National Conference on Recent Trends in Applied Science and Technology, 26-27 October 2017, Alliance College of Engineering and Design, Alliance University, Bengaluru, Karanataka, India.
5. R. Jeba Beula, Suganthi Devadason and S. Prathiba "Characterization of spin coated TiO₂ nanocrystalline thin films for fabricating Dye-Sensitized Solar Cells", National Conference on Current Trends in Advanced Materials, 23-24 February 2017, Hindustan Institute of Technology and Science, Chennai, Tamilnadu, India.
6. R. Jeba Beula and Suganthi Devadason "Structural and Optical Properties of TiO₂ Thin Films by Spin Coating" National Conference on Recent Advances in Applied sciences, 25 April 2016, AMC college of Engineering, Bengaluru, Karnataka, India.

7. R. Jeba Beula and Suganthi Devadason, "Novel Method of Preparation and Characterization of TiO₂ Thin Film by Sol-gel Process", National Workshop on Luminescent Materials, 26 February 2016, PSG College of Technology, Coimbatore, India.
8. National Conference on Nanomaterials NCN-2012, 3-4 December 2012, Department of Physics, Karunya University
9. Physics Scientific Tempo" (PST) – 2011, Department of Physics, Karunya University, Coimbatore, 5th December, 2011.
10. "Fabrication of Dye-sensitized solar cell using TiO₂ nanoparticles" in National Conference on Nanomaterials NCN-2010, 3-4 December 2010, Department of Physics, Karunya University.
11. National Seminar on Advances in Materials Science held at Manonmanium Sundaranar University during March 16-17, 2009.
12. "Synthesis of single-phase and La substituted BiFeO₃ multiferroic" in National Conference Nanomaterials NCN-2008 conducted by Department of Physics, Karunya University on 5-6 December, 2008.
13. Jeba Beula. R, 'International Virtual Conference on High Performance Materials for Energy, Environment & Healthcare in the Digital Era' organized by Centre for Materials Technology, School of Advanced Sciences, VIT, Vellore from 30th June to 1st July 2020.
14. Participated in the workshop on "Improving Effectiveness of Teaching and Quality of Education" organized by Department of Science and Humanities, Karunya University, Coimbatore on 24 June 2016.
15. Participated in "Virtual Lab Workshop" Conducted at Karunya University, Coimbatore on 20 Feb 2016.
16. Workshop on Nuclear Chemistry and Radioisotopes Detection Techniques, conducted by Department of Chemistry, Karunya university on 23-24 August, 2013
17. Participated in the Regional Workshop on Isotope Hydrology held on October 11, 2012 at Karunya University, Coimbatore.
18. Faculty Empowerment Program conducted by Karunya University, Karunya Nagar, held on 20-22 July, 2011
19. One day workshop on Effective Teaching conducted by Karunya University, Karunya Nagar, held on 25-11-2009
20. Participated in the one day workshop on "Ancient & Modern Astronomy" organized at Avinashilingam University for Women, Coimbatore on 17 July 2009.
21. Participated in Faculty Development Program entitled "Lecture Capturing" conducted by Karunya Competency Development Center (KCDC) on 23 Aug 2008.