

MISS. PRERNA RAMNATH MODAK

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Personal Information:

Full Name: Miss Prerna Ramnath Modak
Date of Birth: 05/10/1979
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Job Details:

Current Designation: Head department of Physics (Assistant Professor)
Date of Appointment: 29/7/2013
Type of Approval: Regular
Subject for which Approval is granted by University: Physics
Teaching Experience: 7 Years

Educational Qualifications:

Qualification: M.Sc [Physics], NET, Ph.D
Topic of Ph. D: Investigation of Conducting Polymer Graphene
Nanocomposites for Electromagnetic Interference
Shielding
Area of Research: Nanocomposites, EMI Shielding

Details of Paper Publications in conferences:

1. Study On A.C. Electrical Conductivity Of Carbon Nanotube Reinforced Polyaniline Nanocomposites. (From 225-228), Proceeding of national conference on synthesis and applications of Novel Materials (NCSANM-2013) ISSN:2229-4554, **P. Modak**, D.V. Nandanwar, S.B. Kondawar, S.F. Dhakate
2. Preparation And Characterization of Polyaniline (PANI) In the Form of Emeraldine/Multiwalled Carbon Nanotube (MWCNT) Nanocomposite. (From 216-218), Proceeding of national conference on synthesis and applications of Novel Materials (NCSANM-2013) ISSN:2229-4554, **P. Modak**, D.V. Nandanwar, S.B. Kondawar, S.F. Dhakate.
3. EMI Shielding Behaviour of Nanocomposites Based on Intrinsically Conducting Polymers/Graphene, Proceeding of national conference on Advanced Materials (NCAM-2014), **P.R.Modak**, D. Nandanwar,

Details of Paper Publications in Journals:

1. Electromagnetic Interference Shielding Of Multiwalled Carbon Nanotubes/ Polyaniline Nanocomposites. (From 774-782, January 2014, Issue-2, Volume-1), International Journal of Researches in Biosciences, Agriculture and Technology ISSN:2347-517x, **P. Modak**, D.V. Nandanwar, S.B. Kondawar, S.F. Dhakate
2. Synthesis and characterization of conducting polyaniline/graphene nanocomposites for electromagnetic interference shielding, Procedia Materials Science, 10 (2015) 588 – 594, **Prerna Modak**, Subhash B. Kondawar, D.V. Nandanwar.
3. A review on graphene and its derivatives-based polymer nanocomposites for electromagnetic interference shielding, International Journal of Advances in Science Engineering and Technology, ISSN: 2321-9009 Special Issue-1, 2015, 212-214, **Prerna Modak**, D.V. Nandanwar.
4. Study of Specific Capacitance, Electrical Conductivity and Mechanical Strength of Polyaniline–(Derivatives Of) Graphene Nanocomposites, International Journal of Research in Biosciences and Agriculture Technology, (2015), ISSUE 2,114-118, 2347-517X, **Prerna Modak**, Deoram Nandanwar, Subhash Kondawar and Dilip Badwaik.

5. Conducting Polypyrrole/Graphene Nanocomposites as Potential Electromagnetic Interference Shielding Materials in the Ku-band, Journal of Physical Science, Vol. 27(3), 137–157, 2016, **Prerna Ramnath Modak**, Deoram Vithoba Nandanwar and Subhash Baburao Kondawar.
6. Improved Transport Properties of Polyaniline/Graphene Nanocomposites, BIONANO FRONTIER Print ISSN 0974-0678, Online : 2320-9593, www.bionanofrontier.org, 154-157, 2017, **Prerna R. Modak**, Subhash B. Kondawar, Deoram V. Nandanwar.
7. Transport Properties of Polypyrrole/Graphene Nanocomposites, IJSRST | Volume 4 | Issue 3 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X, 2018 **Prerna R. Modak**, Subhash B. Kondawar, Deoram V. Nandanwar.
8. Electromagnetic interference shielding performance of polyaniline graphene nanocomposites in ku band, International journal of current engineering and scientific research, vol. 6, issue 1, 604-611, 2019, **Prerna R. Modak**, Subhash B. Kondawar, Deoram V. Nandanwar.
9. Enhanced electromagnetic interference shielding effectiveness of carbon-based conducting polymer nanocomposites. Journal of Physics: Conference Series, 2021, vol . 1913, 012054, **P Modak** and D Nandanwar,
10. Synthesis, optical study and band gap energy of polyaniline/graphene nanocomposite, AIP Conference Proceedings, Vol 2974, issue 1, 020015, 2024, AIP Publishing LLC, **PR Modak**, NT Tayade, SG Itankar, Y Mahant
11. Comparative photoluminescent study of PAN/Eu³⁺ and PEO/Eu³⁺ electrospun nanofibers in smart textile applications, Journal of Materials Science: Materials in Electronics Vol 36, issue 11, 1-12, 2025, Springer US, Sangeeta G Itankar, Subhash B Kondawar, Manjusha P Dandekar, **Prerna R Modak**
12. Novel blend polymer electrolyte membrane as potential separator for lithium ion battery, AIP Conference Proceedings 2974 (1), 020025, 2024, AIP Publishing LLC, YP Mahant, SG Itankar, MP Dandekar, **PR Modak**, SP Mahant
13. Synthesis and study effect of Eu³⁺ ions & Eu(TTA)₃phen doped polystyrene on luminescence characteristics of electrospun nanofibers, AIP Conference Proceedings 2974 (1), 020014, 2024, AIP Publishing LLC, SG Itankar, MP Dandekar, **PR Modak**, YP Mahant

14. Nanofiller opted for dependent Electrical and Transport properties of Polyaniline/ Iron oxide/ carbon nanotube nanocomposites, **TIJER**, ISSN 2349-9249, Volume 12, Issue 6, 122-129, 2025, www.tijer.org, P. R. Modak, B. T. Ghode, S. R. Deshmukh, S.G. Itankar
15. Novel Schiff Base Ligand and their Fe (III), Co (II) and Ni (II) Complexes: Spectroscopic Investigation and Biological Applications, International Journal of Scientific Research in Engineering and Management (IJSREM), 2582-3930, Volume: 09 Issue: 06, 1-8, 2025, S. R. Deshmukh, A. R. Mehetre, P. R. Modak

Details of Chapter Publications:

1. **Chapter-** Theory of EMI Shielding, **Elsevier-** Materials for Potential EMI Shielding Applications: Processing, Properties and Current Trends, J. Kuruvilla, W. Runcy, G. Gejo, **Perna R. Modak**, Subhash Kondawar, 2019.
2. **Chapter-** Electromagnetic Interference Shielding Effectiveness of Graphene Based Conducting Polymer Nanocomposites, [Springer Proceedings in Physics](#) book series (SPPHY, volume 242) pp 31-40, Perna R Modak, Deoram V Nandanwar, Subhash B Kondawar

Details of Book Publications:

1. Elements of Thermal and Statistical Physics, Sai Jyoti Publication, **Perna Modak**, Nahid Beig, 978-93-81432-74-7, 2019.
2. Basics of Research Methodology, S.R. Deshmukh Publication, Sandeep R. Deshmukh, **Perna R. Modak**, Sanganand G. Bagde, ISBN-978-93-3401-586-7, 2024
3. Conducting polymer- Graphene Nanocomposites for Electromagnetic Interference Shielding, Akshara Publication, **P.R. Modak**, ISBN 978-93-92576-66-9, 2024
4. Elements of Research Methodology, Ramanshil Publication, Perna R. Modak, Sandeep R. Deshmukh, Sanganand G. Bagde, ISBN- 975-93-6732-796-8, 2025

Details of Paper Presentation:

1. Paper presented- “Electromagnetic Interference Shielding Effectiveness of Graphene Based Conducting Polymer Nanocomposites” in NAC in Taiwan
2. Paper presented- “Investigation of Conducting Polymer Graphene Nanocomposites for Electromagnetic Interference Shielding” in Indo-Japan Workshop organised by National Physical Laboratory, Delhi.

Details of Award:

Best Paper Presentation award “Enhanced electromagnetic interference shielding effectiveness of carbon-based conducting polymer nanocomposites” [International Conference on Research Frontiers in Sciences \(ICRFS 2021\) 5th-6th February 2021, Nagpur, India](#)

Extra-curricular Work:

1. Member in IQAC
2. Member in College Development Committee
3. Member in Library Advisory Committee
4. NPTEL online Certificate course on structural Analysis of Nanomaterials
5. Joint Chief Supervisor of University Exam