PARUL YADAV
Mail ID: parul.iit@gmail.com
Phone: +91-9654687857

Work Experience — 7 Years (Jan 2016- till date)

➢ **Assistant Professor**

Maitreyi College, University Of Delhi, India
Department of Physics
Member of Centre for Research
Duration: Jan 2016 till date
Course Taken:

- Electromagnetic Theory for B.Sc (H) 3rt Year
- Quantum Mechanics & Applications for B.Sc (H) 3rd Year
- Analog Systems & Applications for B.Sc (H) 2nd Year
- Basic Instrumentation skills for B.Sc (H) 2nd Year

➢ **Guest Faculty**

Gautam Buddha University (GBU), Greater Noida, UP
Department of Vocational Studies and Applied Sciences
Duration: Aug-2014 to Dec 2015
Courses Taken:

- Laser physics & Electrodynamics for MSc Previous & Final Year
- Applied Physics for BTech 1st year

Academic Qualification

- **Ph.D**. in **Physics (Solid Electrolyte Sensing Material), IIT Delhi** (2009-2014),CGPA (course work): 9.25 (Highest in the Batch 2009)
  Research Topic: Effect of Structural Modifications on Electrical Properties of NASICON Material and Its Application as Potentiometric Sensor

- **M.Sc**., in Physics (Specialization in Electronics), Deen Dayal Upadhayaya Gorakhpur University, Gorakhpur (2003-2005)

- **B.Sc. from** Deen Dayal Upadhayaya Gorakhpur University, Gorakhpur (2000-2003)

Professional Experiences

- **Teaching Assistant,**
  B.Tech. 1st year Lab, Department of Physics, IIT Delhi (2009-1013)
  Assisted B.Tech. Projects during PhD tenure in supervision of my research supervisor
- **CSIR-SRF (Senior Research Fellow)**,
  Department of Physics, Indian Institute of Technology Delhi, New Delhi, India (2010-2013)
- **CSIR-JRF (Junior Research Fellow)**,
  Department of Physics, Indian Institute of Technology Delhi, New Delhi, India (2009-2010)
- **JRF (Junior Research Fellow) ,**
  Physical Research Laboratory (PRL), Ahmadabad, India, (July 2008-Dec 2008)

Area of Specialization

- Fabrication and characterization of solid electrolyte potentiometric based sensors for chemical and biochemical applications

- Synthesis of NASICON nanoparticles by Sol-Gel method
- Synthesis of NASICON and modified NASICON material of different compositions by Sol- Gel method

Technical Skills

- Synthesis of single phase NASICON powder by sol-gel method
- Synthesis of tin substituted NASICON powder by solid state reaction method
- Thin film coating with precise control
- Nano particle synthesis
- Fabrication of potentiometric sensors using NASICON material
- MATLAB, Microsoft office, Origin etc
- Instrumentation (X-ray diffraction technique, Scanning emission Microscopy, UV-Vis Spectrometry, Vacuum Coating Unit, Furnaces, LCR meter)

Mentoring students at college level

Project	Title	No of Students	Status/Prize
Summer 2018	Study of Optical Absorbance of ZnO nanoparticles and verification of Beer Lambert's Law	2	Completed/ first
Summer 2019	Study of Electrical and Optical Behavior of Metal and Metal Oxide Nanostructures	5	Completed/Second
Summer 2019	Synthesis of Iron Oxide Nanoparticles and its Application for Oil-Water Separation	5	Completed/Third **Published in Vantage: Journal of Thematic Analysis**
Summer 2019	Numerical Simulations of Eigen States of nanostructures	5	Completed
Summer 2020	Quantum computing for fast diagnosis and cure of COVID-19 and other diseases	4	Completed
Summer 2021	Preparation of structured water and study of its role in quality improvement of plants	4	Completed
Summer 21	Design of Hydroponics system using Arduino to monitor physical parameters required for plants growth	4	Completed
Summer 22	Designing of Automated Solar panel and Optimization of solar energy for maximum power	7	Completed/ First

Summer 22	Quantum computing: Introduction, fundamentals and understanding of Deutsch Jozsa Algorithm	5	Completed

List of publications

- **Journals:**

1. Parul Yadav and M.C. Bhatnagar, Structural studies of NASICON material of different compositions by sol–gel method, **Ceramics International** 38 (2012) 1731-1735

2. Parul Yadav and M.C. Bhatnagar, Synthesis of NASICON nanoparticles and their optical properties, **Nanoscience and Nanotechnology letters**

3. Parul Yadav and M.C. Bhatnagar, Detection of low content of water in different organic solvents using NASICON based probe, **Sensors and Transducers** 146 (2012) 182-190

4. Parul Yadav and M.C. Bhatnagar, Preparation, structure and conductivity of Sn modified NASICON material **Journal of Electroceramics DOI-10.1007/s10832-012-9776-6**

5. Priya Bhatia, Parul Yadav, B.D. Gupta, Surface plasmon resonance based fiber optic hydrogen peroxide sensor using polymer embedded nanoparticles, **Sensors and Actuators B** 182 (2013) 330-335

6. Parul yadav and M. C. Bhatnagar, Detection of very low concentration of water in ethanol using NASICON probe, **AIP Proceedings, 1512, 488 (2013)**

7. Synthesis of Mn doped LISICON material as ion selective electrode for pH sensing, **Yearly Academic Journal, Kalindi College, ISSN 2348-9014, 2017**

8. Synthesis of Iron Oxide Nanoparticles and its Application for Oil-Water Separation, **Vantage: Journal of Thematic Analysis, 2020**

9. Empowering People with Disabilities: Designing an Innovative and Sustainable Hydroponics System **(Accepted)**

Conferences/ Symposiums:

1. Parul Yadav and M.C. Bhatnagar, Structural studies of NASICON material synthesized by sol-gel method, International Conference on Materials for Advanced Technologies, Singapore **ICMAT 2011** (1-7 July 2011)

2. Parul Yadav and M.C. Bhatnagar, Structural studies of new type of NASICON material synthesized by solid state reaction method, International Conference of Nanoscience and Nanotechnology, Hyderabad, India **ICONSAT 2012**: (20-23 January 2012)

3. Parul Yadav and M.C. Bhatnagar, Detection of very low concentration of water in ethanol by using NASICON probe, 57th DAE solid state physics symposium, Bombay India DAE-SSPS 2012 (3-7 Dec 2012)

4. M.C Bhatnagar and Parul Yadav, Synthesis of NASICON nanoparticles and their structural and optical Properties, International Conference on Materials for Advanced Technologies, Singapore ICMAT 2013 (30th June -5th July 2013)

5. Attended and Presented a paper entitled Mediator- free detection of Cholestrol using electrochemically deposited nano particles in National Conference, "Interdisciplinarity: Prospects and Challenges" held in Maitreyi College from April 5-7, 2017.

6. Attended and Presented a paper entitled SPR based fiber Optic refractive Index Sensor in National Conference, "Interdisciplinarity: Prospects and Challenges" held in Maitreyi College from April 5-7, 2017.
7. Attended and Presented a paper entitled Preparation and study of Structural and optical properties od SnO2 nanopowders in National Conference, "Interdisciplinarity: Prospects and Challenges" held in Maitreyi College from April 5-7, 2017.
8. Presented a paper in Nationl Seminar, " AParadigm shift towards Empowerment of women from February 3-4, 2017

9. Participated, Presented a Poster and received Second prize in poster presentation in National conference "NCONSI" held in St.Stephen's College on 5-6 April, 2018

10. Participated, Presented a Poster in National conference "NTNA-2018" held in ARSD College on 27-28 September, 2018

11. Participated in Poster Session and Presented a Paper on Correlation of electrical and optical behaviour of metal and metal oxide nanostructures in NAAC Sponsored National Seminar on Assessment and Accreditation of Best Practices in Higher Education Institution Under NAAC Framework held on November 5-6, 2019

12. Presented a paper entitled New frontiers of research: Quantum computing in the International Interdisciplinary e-Conference on "Sustainable Future for Humanity: The New Learning Curve" held on February 24, 2021 organized by Maitreyi College, University of Delhi.

13. Presented a Paper entitled Styling Of Hydroponics System To Assess The Physical Parameters Required For Water Efficient Farming and Received best Presentation award in the international conference on Recent Trends in drug discovery and development organized by Maitreyi College on October 08-09, 2021

14. Presented a Paper entitled Empowering People with Disabilities: Designing an Innovative and Sustainable Hydroponics System in First world disability Conference on CONTEMPORARY INTERVENTIONS IN DISABILITY DISCOURSE organized by Enabling Unit, Maitreyi College, University of Delhi held on June 27-28, 2022

15. Completed 4 weeks Faculty training Program Organised by Computer science, Maitreyi College july 16- August 14, 2020

Resource Person:

- Attended Mukt Vidya Vani programme and delivered a lecture on Electricity And Magnetism Using Streaming Audio for Education Purpose organized by National Institute for Open Schooling (NIOS)on Feb 10, 2016
- Delivered a talk titled diode as a circuit element in a National Seminar on Learning Physics With Conceptual & Problem Based Approach organised by The National Academy of Sciences India (NASI), Delhi Chapter on September 14, 2020
- Delivered a talk titled Nano Material and Applications Laboratory in a National Workshop "Challenges of Teaching Physics Laboratory Courses in Online Mode" organised by Department of Physics, Kalindi College, University of Delhi and The National Academy of Sciences India (NASI), Delhi Chapter on September 23-25, 2021
- Attended a workshop on standardization of marking scheme in Physics as Resource person at Senior Secondary level on 23/10/2018 and 24/10/2018 in NIOS (NATIONAL INSTITUTE OF OPEN SCHOOLING
- Resource person in one week Interdisciplinary Training programme for Lab Staff organized by IQAC, Maitreyi College from 23/08/2022 to 29/08/2022.

Member of Organizing Committee

1. One week online National level faculty development Programme on digital pedagogy to enhanceTeaching and Learning Experienceorganised by Maitreyi College in collaboration with Guru Angad dev Teaching Learning Centre, Shri Guru Teg Bahadur Khalsa College held on December 15-21, 2020
2. 2 Months National seminar, 11-week Course-"Learning Physics with Conceptual and Problem based Approach" organized by National Academy of Sciences India, Delhi Chapter
3. International Conference, Equinox-2021 organized by CFR Maitreyi College
4. International conference, "Sustainable Future for Humanity: The New Learning Curve" held on February 24, 2021 organized by Maitreyi College, University of Delhi.
5. International Conference, on Recent Trends in drug discovery and development organized by Maitreyi College on October 08-09, 2021
6. International Conference, Equinox-2022 organized by CFR Maitreyi College
7. International Webinar, "UNRAVELLING MYSTERIES OF THE UNIVERSE WITH EXPERTS" organized By Physics Department, Maitreyi College
8. SMD LECTURE-2017 TO 2022

Achievements, Awards and Fellowships:

- JEST 2008 with All India Rank-146
- National Eligibility Test (NET) for eligibility of lectureship Dec 2007
- National Eligibility Test (NET) for Junior Research Fellowship (JRF) conducted by CSIR, June (2008)
- Gate 2009 with All India Rank-89
- Received Second prize in poster presentation in National conference "NCONSI" held in St.Stephen's College on 5 to 6 th April, 2018
- Received best presentation award in paper presentation in International conference on Recent Trends in drug Discovery and Development held in Maitreyi College on October 8-9, 2021