
DR. OM PRAKASH

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[Google Scholar Profile](#)

[ResearchGate Profile](#)



EDUCATION

- **Ph.D.** (2016-2021) Indian Institute of Technology (Banaras Hindu University), Varanasi, India.

Specialization: Organic and Materials Chemistry.

Research Area: Porous polymer membrane and its application in Field of energy,

- Fuel cell membrane
- Energy Harvesting
- Water splitting etc.

Water filtration (Heavy metal ions and radionuclide sensing in nuclear power plant).

- **M.Sc.** (Chemistry) & **B.Sc.** (Hons) Chemistry (2010-2015), Banaras Hindu University.

ACHIEVEMENTS (FELLOWSHIP AND AWARDS)

- Qualified all India level examination, Joint CSIR-UGC Test for the Junior Research Fellowship (JRF) and Eligibility for Lectureship (NET) held on 22-06-2015.
- Qualified all India level examination, Graduate Aptitude Test in Engineering (GATE-2015, 2016, 2017).
- Qualified NIELIT –CCC examination for the computer Knowledge with grade B.
- Qualified Computer Awareness Programme with grade A organized by the Uttar Pradesh government, India.
- “Certificate of Appreciation” for yoga day quizzes completion Organized by IIT-BHU2020.

- RKVY-RAFTAAR AGRI BUSINESS INCUBATOR “Certificate of Participation AGRIPREURSHIP ORIENTATION PROGRAME organized by IIT BHU-Varanasi from 19 Oct 2020 to 4 Dec 2020.
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PUBLICATIONS

1. **Prakash, O.**, Mhatre, A. M., Tripathi, R., Pandey, A. K., Yadav, P. K., Khan, S. A., & Maiti, P. (2020). Fabrication of Conducting Nanochannels Using Accelerator for Fuel Cell Membrane and Removal of Radionuclides: Role of Nanoparticle. *ACS Applied Materials & Interfaces*, 12(15), 17628-17640. (Highlights Nature India).
2. Singh, B., **Prakash, O.**, Maiti, P., & Indra, A. (2020). Electrochemical Transformation of Metal Organic Framework into Ultrathin Metal Hydroxide-(oxy) hydroxide Nanosheets for Alkaline Water Oxidation. *ACS Applied Nano Materials*, 3(7), 6693-6701.
3. Daripa, S., Singh, V. K., **Prakash, O.**, Maiti, P., Kuila, B. K., & Das, S. (2020). Sulfonated graphene-modified electrodes for enhanced capacitive performance and improved electro-oxidation of hydrogen peroxide. *Nano-Structures & Nano-Objects*, 24, 100531.
4. Bhattacharyya, R., **Prakash, O.**, Roy, S., Singh, A. P., Bhattacharya, T. K., Maiti, P., & Das, S. (2019). Graphene oxide-ferrite hybrid framework as enhanced broadband absorption in gigahertz frequencies. *Scientific reports*, 9(1), 1-12.
5. Bhattacharyya, R., Roy, S., **Prakash, O.**, Singh, A. P., Bhattacharya, T. K., Maiti, P., & Das, S. (2019). Mg 0.5 Zn 0.5 Fe 2 O 4-polyurethane thin nanocomposites coating as broadband microwave absorber. *SN Applied Sciences*, 1(1), 38.
6. **Prakash, O.**, Jana, K. K., Manohar, M., Shahi, V. K., Khan, S. A., Avasthi, D., & Maiti, P. (2019). Fabrication of a low-cost functionalized poly (vinylidene fluoride) nanohybrid membrane for superior fuel cells. *Sustainable Energy & Fuels*, 3(5), 1269-1282.

7. **Prakash, O.**, Jana, K. K., Jain, R., Shah, P., Manohar, M., Shahi, V. K., & Maiti, P. (2018). Functionalized poly (vinylidene fluoride-co-hexafluoro propylene) membrane for fuel cell.
Polymer, 151, 261-268.
8. Kumar, S., Maurya, I. C., **Prakash, O.**, Srivastava, P., Das, S., & Maiti, P. (2018). Functionalized thermoplastic polyurethane as hole conductor for quantum dot-sensitized solar cell.
ACS Applied Energy Materials, 1(9), 4641-4650.
9. Jana, K. K., **Prakash, O.**, Shahi, V. K., Avasthi, D. K., & Maiti, P. (2018). Poly (vinylidene fluoride-co-chlorotrifluoro ethylene) Nanohybrid Membrane for Fuel Cell.
ACS omega, 3(1), 917-928.
10. Singh, B., **Prakash, O.**, Maiti, P., Menezes, P. W., & Indra, A. (2020). Electrochemical transformation of Prussian blue analogues into ultrathin layered double hydroxide nanosheets for water splitting.
Chemical Communications, 56 (95), 15036-15039.
11. **Prakash, O.**, Mhatre, A. M., Tripathi, R., Pandey, A. K., Yadav, P. K., Khan, S. A., & Maiti, P. (2021); Lithium-Irradiated Poly (vinylidene fluoride) Nanohybrid Membrane for Radionuclide Waste Management and Tracing.
ACS Applied Polymer Materials, 3(4), 2005-2017.
12. Yadav, P. K., **Prakash, O.**, Ray, B., & Maiti, P. (2021). Functionalized polythiophene for corrosion inhibition and photovoltaic application.
Journal of Applied Polymer Science, 51306.
13. Bhattacharyya, R., Gupta, A., **Prakash, O.**, Roy, S., Bhattacharyya, T. K., Maiti, P., & Das, S. (2019, March); In-situ synthesis of (Mg 0.5 Zn 0.5) Fe 2 O 4-graphene oxide nanocomposites for broadband microwave absorption in GHz frequency range.
In 2019 **URSI Asia-Pacific Radio Science Conference (AP-RASC)** (pp. 1-4). IEEE.

14. Bhattacharyya, R., Jha, D. K., **Prakash, O.**, Singh, A. P., Bhattacharyya, S., & Das, S. (2017, December); Ultra-thin ferrite nanocomposite coating as broadband microwave absorber.
[In 2017 IEEE applied electromagnetic conference \(AEMC\) \(pp. 1-2\). IEEE.](#)
15. **Om Prakash**; Shyam Bihari; Keshav; Shivam Tiwari; Ravi Prakash & Pralay Maiti , “Dehydro-halogenated poly(vinylidene fluoride) based anion exchange membrane for Fuel Cell applications”. [\(Communicated\)](#)
16. Akhand Pratap Singh, **Om Prakash**, Sunil Kumar, Aparna Shukla, and Pralay Maiti, “Poly (lactic acid-co-glycolic acid) as sustained drug delivery vehicle for melanoma therapy”. [\(Communicated\)](#)
17. **Om Prakash**, Shivam Tiwari and Pralay Maiti , “Modified poly (vinylidene difluoride) and its nanocomposites for the energy applications: A Review” [\(Communicated\)](#)
18. Baghendra Singh, **Om Prakash**, Pralay Maiti, and Arindam Indra, “Cyanide Vacancy Assisted Electrochemical transformation Prussian blue Analogue for alkaline water oxidation”. [\(Communicated\)](#)
19. Bhardwaj, Reshu; **Prakash, Om**; Tiwari, Shivam; Maiti, Preeti; Ghosh, Sandipta; Singh, Ram; Maiti, Pralay "Efficient and Controlled Herbicide Delivery Through Conjugate Gel Formulation on Broad Leaf Weeds Mortality" [\(Communicated\)](#)

PATENTS

1. Pralay Maiti, **Om Prakash**, Amole M. Mhatre, Rahul Tripathi and Ashok Kumar Pandey.
“Development of functional porous polymeric membrane using accelerator for separation of f-block elements”.
[Indian Patent Application No. 202011023201 filed on June 02, 2020](#)
2. Pralay Maiti and **Om Prakash**
“A method to enhance thermal stability and efficiency in porous fluoropolymer hybrid membrane”.
[Indian Patent Application No. 201711027183 filed on July 31, 2017](#)

3. Reshu Bhardwaj, Preeti Maiti, **Om Prakash**, Ram Kumar Singh and Pralay Maiti.
“A nanoherbicide composition and a method for its preparation and uses thereof”.

Indian Patent Application No. 202111002570 filed on January 19, 2021

BOOK CHAPTER

Om Prakash Ashok Kumar Pandey and Pralay Maiti

Functionalized Fluoropolymer membrane for energy applications; “Nanoscale Engineering of Biomaterials: Properties and Applications, Springer nature Publisher” **Book Chapter Communicated**

WORKSHOPS AND CONFERENCES ATTENDED

1. “Recent Trends and Developments in Chemistry” National Level Webinar (2020) organised by Department of chemistry, Kalna College West Bengal.
2. “Current Trends and Future prospective of Chemistry in Pandemic-Era-2020”, organised by Department of chemistry DDU Gorakhpur, U.P. India.
3. ACS Science Talk Virtual Lecture Series, Advances in perovskite single crystals: Fundamental and Applications (2020).
4. International conference on Emerging Smart Materials in Applied Chemistry, ESMAC-2020, **KIIT Bhubaneswar Odisha**, India.
5. International Virtual conference on Advance in Functional Materials, AFM-2020, **KIIT Bhubaneswar Odisha**, India.
6. 2nd Indian Materials Conclave and 31st AGM at Kolkata -2020, **MRSI, Kolkata**, India.
7. National symposium on Contemporary Trends and Future Prospects of Functional Materials-2019, **Chemistry Department ,BHU –Varanasi ,Uttar Pradesh** ,India
8. Indo-German Joint Scientific workshop on membranes for water and Energy-2019, CSIR-CSMCRI, **Bhavnagar-Gujarat**, India.
9. 15th International Conference on Polymer Science and Technology-2018, **IISER and NCL –Pune, Maharashtra**, India.
10. Institute Day Presented Patent work-2018, **SMST IIT (BHU)-Varanasi, Uttar Pradesh**, India.
11. 45th National Seminar on Crystallographic -2017, **IIT (BHU) and INSA for IUCr-Varanasi, Uttar Pradesh**, India.

12. National conference on Recent Trends on membrane and Separation Technology-2017, CSIR-CSMCRI, **Bhavnagar-Gujarat**, India.
 13. Science Academes, Lecture workshop on Supramolecular chemistry and perspectives-2014, **Chemistry Department Mahila MahaVidyalaya, BHU –Varanasi, Uttar Pradesh, India.**
 14. Science Academes, Lecture workshop on Spectroscopy in Chemical Biology-2014 **Chemistry Department, BHU –Varanasi, Uttar Pradesh ,India**
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EXPERIENCE

- Guided to B. Tech. students Prakash Shah and Rishab Jain from Chemical Engineering Department and they successfully submitted their Project Thesis, IIT (BHU)-2015-2018.
 - Guided summer internship student Anjali from BIT Mesra Ranchi, Jharkhand and she successfully submitted her project report, IIT (BHU)-2019.
 - Guided IDD student Keshav Miglani from SMST, Varanasi and they successfully submitted their UG report, IIT (BHU)-2018-2021.
 - Teaching chemistry Under graduate / Post Graduate student for IIT JAM / CSIR NET Preparation.
 - Member of the Vigyan Prasar (An autonomous under the Department of Science and Technology) Govt. of India with affiliation Id **VP-UP0130**
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SKILLS

- Profound reading, writing and speaking fluency in Hindi and English language.
 - Basic computer knowledge like MS-office and FORTRAN.
 - Profound knowledge in the research based softwares required for research works.
 - Instrumental understanding and operational abilities of some common instruments like DSC, TGA, SEM, FTIR, UV-vis, AFM, Electrochemical Autolab, UTM, DMA, Molding Instruments, XRD, Viscometer, Hardness Instrument, HPLC/GPC, POM, Electrospinning for fiber formation.
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