Dr. Aman Joshi

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Correspondence Address: 602, Nilgiri Apartment, J.C. Bose University of Science & Technology YMCA Faridabad Haryana India

Permanent Address: # 411/12, Darra Khera, Thanesar, Kurukshetra -136118, Haryana India

Aman Joshi - Google Scholar, (22) Aman Joshi (researchgate.net)

QUALIFICATIONS:

Professional/ Academic Qualification:

- **Ph.D. (Physics)**
  Title: Electrochemical Behavior of Bismuth Phosphate Nanostructures as Electrode Material for Energy Storage Applications
  National Institute of Technology Kurukshetra Haryana India
  CGPA: 9.7692 (Course Work)
  (September 11th, 2018- April 11th, 2023)
- **M.A. (Education)**
  Kurukshetra University Kurukshetra Haryana.
  Percentage: 60, Year (2013-2015) Through Distance Education
- **B.Ed. (Physical Science and Mathematics as Teaching Subjects)**
  Kurukshetra University Kurukshetra Haryana.
  Percentage: 65.1, Year (2011-2012)
- **M.Sc. (Applied Physics)**
  College: SD College Ambala Cantt, Haryana (Affiliated to Kurukshetra University Kurukshetra) Haryana.
  Percentage: 69.5, Year (2009-2011)
- **B.Sc. (Physics, Mathematics, Comp. Sc.)**
  College: University College, Kurukshetra University Kurukshetra
  Haryana. Percentage: 63.4%, Year (2006-2009)
- **XIIth:** From GNSSS, Kurukshetra-136118 (HBSE) with 7.6 CGPA Year (2006)
- **Xth:** From GNSSS, Kurukshetra-136118 (HBSE) with 1st 63.4% Year (2004)

WORK EXPERIENCE (8 Years):

- Currently Working as Asst. Professor in the Department of Physics, J.C. Bose University of Science & Technology YMCA Faridabad Haryana (2nd April 2021-Present).

- Worked as Senior Research fellow in SERB-DST sponsored project, in the Department of Physics NIT Kurukshetra Haryana (10th July 2020 – 1st April 2021).

- Worked as a Junior Research fellow in SERB-DST sponsored project in the Department of Physics NIT Kurukshetra Haryana (10th July 2018 – 9th July 2020).

- Worked as Asst. Professor at Department of Physics, Institute of Integrated and Honors Studies, Kurukshetra University Kurukshetra, Haryana (12th October 2015 - 9th July 2018).

- Worked as Asst. Professor at Department of Physics NIILM University Kaithal, Haryana (16th August 2012 – 9th May 2015).

TRAINING & MEMBERSHIP:

- Life Member of THE INDIAN SCIENCE CONGRESS ASSOCIATION, Life Membership No.: L41259 (Physical Science).

SPONSORED RESEARCH PROJECTS

- Got a Haryana – DST sponsored research project as **Co-Principle Investigator** entitled "Development of biomass derived activated carbon for electrode materials in energy storage application, in November 2022 (INR 32, 80,000/-)
- Seed grant of Rs. 2 lacs from the R&D branch of JCBUST YMCA Faridabad for research work from 2023-2025.

TECHNICAL SKILLS

- Synthesis of nanomaterials through different synthesis methods and conditions.
- Analysis of XRD, FESEM, HRTEM, XPS, Raman, UV-visible, FTIR spectroscopy
- Worked on CHI 760E Electrochemical Workstation (CV, GCD, and EIS)
- Half-cell and full-cell device testing.

ACHIEVEMENTS & EXTRACURRICULAR ACTIVITIES

- Awarded for having been placed among the top 10% in University College, Kurukshetra University in "NATIONAL GRADUATE PHYSICS EXAMINATION 2007-2008".
- Qualified CSIR NET (PHYSICAL SCIENCE) in December 2012 with 39th Rank.
- Receive SERB ITS grant for presenting a research paper in ICMAT-2023, Singapore.
- Receive partial funding for travel from CSIR for presenting research paper in ECS-244, Sweden. (didn't avail)

RESEARCH PAPERS/BOOK CHAPTERS:

Publications: 27 (SCI: 18, SCOPUS: 07, Conference Proceedings: 02)

1. Meena Yadav, Isha Saini, Swati Sharma, Prakash Chand, Nidhi Shekhawat, **Aman Joshi,** Electrochemical performance of graphene-oxide (GO) and MOF5-GO nanocomposite, **Ionics** https://doi.org/10.1007/s11581-024-05849-y **(Impact Factor: 2.4; SCI)**
2. Sonia Bansal, Pankaj Chaudhary, Bharat Bhushan Sharma, Sunaina Saini, **Aman Joshi,** "Review of MXenes and their composites for energy storage applications", **Journal of Energy Storage,** (87) (2024) 111420 https://doi.org/10.1016/j.est.2024.111420 **(Impact Factor: 9.4; SCI)**
3. **Aman Joshi,** Prakash Chand, Sunaina Saini, "Transition Metal Doped $BiPO_4$ Nanostructures for Energy Storage Applications", **Journal of alloys and compound,** (982) (2024) 173663 https://doi.org/10.1016/j.jallcom.2024.173663 **(Impact Factor: 6.2; SCI)**
4. Pankaj Chaudhary, Sonia Bansal, Bharat Bhushan Sharma, Sunaina Saini, **Aman Joshi,** "Waste biomass-derived activated carbons for various energy storage device applications: A Review", **(Journal of Energy Storage)** 78 (2024) 109996 https://doi.org/10.1016/j.est.2023.109996 **(Impact Factor: 9.4; SCI)**
5. Sunaina Saini, Prakash Chand, **Aman Joshi,** "Fabrication of ultrahigh supercapacitor device based on $ZnCo_2O_4$@MnO_2 with porous nanospheres decorated on flower-shaped nanostructures", **Journal of Energy Storage**, 71 (2023) 108209. https://doi.org/10.1016/j.est.2023.108209 **(Impact Factor: 9.4; SCI)**
6. Sunaina Saini, Prakash Chand, **Aman Joshi,** "Electrochemical Performance of MnO_2 Composite with Activated Carbon for Supercapacitor Applications", **Indian Journal of Engineering and Material Sciences (IJEMS)** 30 (3) (2023) https://doi.org/10.56042/ijems.v30i3.3681 **(Impact Factor: 0.9; SCI)**
7. **Aman Joshi,** Prakash Chand, Sunaina Saini, "Improved electrochemical performance of rare earth doped $Bi_{1-x}M_xPO_4$ (x = 0, 0.15; M = La, Ce, Sm) Nanostructures as electrode material for energy storage applications", **Journal of Alloys and Compounds,** 935 (2) 2023 168063 https://doi.org/10.1016/j.jallcom.2022.168063 **(Impact Factor: 6.371; SCI)**
8. **Aman Joshi,** Prakash Chand, Sunaina Saini, "Improved electrochemical performance for alkali and alkaline metal doped nanostructures as electrode material for energy storage applications", **Inorganic Chemistry Communications** 147 (2023) 110285 https://doi.org/10.1016/j.inoche.2022.110285 **(Impact Factor: 3.428; SCI)**

9. Sunaina Saini, Prakash Chand, **Aman Joshi,** "Enhanced electrochemical behavior of Mg-doped MnO_2 for supercapacitor application", **Materials Today: Proceedings**, 76 (1) (2023) 63-69. https://doi.org/10.1016/j.matpr.2022.09.041 **(Scopus)**
10. **Aman Joshi**, Sunaina, Prakash Chand, "Electrochemical Behaviour of Temperature-based Bismuth Phosphate Nanostructures for Energy Storage Application", **Chemical Physics Letters** 804 (2022) 139898, https://doi.org/10.1016/j.cplett.2022.139898 **(Impact Factor: 2.719; SCI)**
11. Sunaina Saini, **Aman Joshi,** Prakash Chand, "Binder Free MnO_2 electrodes for Supercapacitor Applications", **ECS Transactions**, 107 (2022) 11847 https://doi.org/10.1149/10701.11847ecst **(Scopus)**
12. Prakash Chand, **Aman Joshi**, Sunaina, Sohan Lal, "Sol-Gel Assisted Morphology and Phase Dependent Electrochemical Performance of $BiPO_4$ Nanostructures for Energy Storage Applications", **Journal of Alloys and Compounds** 899 (2022) 163315. http://dx.doi.org/10.1016/j.jallcom.2021.163315 **(Impact Factor: 6.371; SCI)**
13. **Aman Joshi** and Prakash Chand, "Influence of pH on Optical and Electrochemical performance of $BiPO_4$ Electrode Material for Energy Storage Applications", **Physica E: Low-dimensional Systems and Nanostructures** 137 (2022) 115020 https://doi.org/10.1016/j.physe.2021.115020. **(Impact Factor: 3.369; SCI)**
14. **Aman Joshi** and Prakash Chand, "Role of Microwave Irradiation Power Rates on Electrochemical Performance of $BiPO_4$ Nanostructures as Electrode Material for Energy Storage Applications", **Materials Chemistry and Physics** 275 (2022) 125279. http://dx.doi.org/10.1016/j.matchemphys.2021.125279 **(Impact Factor: 4.778; SCI)**
15. Sunaina Saini, Prakash Chand, **Aman Joshi,** Sohan Lal, V. Singh, "Effect of Hydrothermal Temperature on Structural, Optical and Electrochemical properties of α-MnO_2 for Supercapacitor Applications", **Chemical Physics Letters**, 777 (2021) 138742. https://doi.org/10.1016/j.cplett.2021.138742 **(Impact Factor: 2.8; SCI)**
16. Sunaina, Prakash Chand, **Aman Joshi**, "Biomass Derived Carbon for Supercapacitor Applications: Review", **Journal of Energy Storage**, 39 (2021) 102646. http://dx.doi.org/10.1016/j.est.2021.102646. **(Impact Factor: 9.4; SCI)**
17. Prakash Chand, Vivek Bansal, Sohan Lal, **Aman Joshi,** Sukriti, Anand Kumar, "Effect of annealing temperatures on optical and electrochemical behavior of spinel $LiMn_2O_4$ as cathode materials for lithium-ion batteries applications", Journal of Materials Science: Materials in

Electronics (32) (2021) 6648–6659. https://doi.org/10.1007/s10854-021-05380-0. **(Impact Factor: 2.8; SCI)**

18. Prakash Chand, **Aman Joshi**, Vishal Singh, "High performance of facile microwave-assisted $BiPO_4$ nanostructures as electrode material for energy storage applications", **Materials Science in Semiconductor Processing** 122 (2021) 105472. https://doi.org/10.1016/j.mssp.2020.105472. **(Impact Factor: 4.1; SCI)**
19. Kaushlya Sihag, Nitika Choudhary, Vijay Luxmi, Praveen Kumar, **Aman Joshi,** Bharat Bhushan Sharma, "The role of annealing temperature on structural, optical and dielectric properties of La3+ modified Zinc Oxide (ZnO) nanostructures", **Materials Today: Proceedings,** 43 (2) (2021) 1408-1414. https://doi.org/10.1016/j.matpr.2020.09.177. **(Scopus)**
20. **Aman Joshi**, Prakash Chand, Sunaina Saini, "Electrochemical performance of surfactant based $BiPO_4$ nanostructures for energy storage applications", **Materials Today: Proceedings** 43 (2021) 3225-3230. http://dx.doi.org/10.1016/j.matpr.2021.01.890 **(Scopus)**
21. Prakash Chand, **Aman Joshi**, Vishal Singh, "Impact of phase segregation on optical and electrochemical property of $BiPO_4$ nanostructures for energy storage applications", **Journal of Materials Science: Materials in Electronics** 31 (19) (2020) 16867-16881. https://doi.org/10.1007/s10854-020-04243-4. **(Impact Factor: 2.779; SCI)**
22. Praveen Kumar, Prakash Chand, **Aman Joshi,** Vijay Luxmi, Vishal Singh, "Rare earth substituted Bi0.84RE0.16FeO3 (RE = La, Gd) - an efficient multiferroic photo-catalyst under visible light irradiation", **International Journal of Hydrogen Energy,** 45 (34) 2020 16944-16954. https://doi.org/10.1016/j.ijhydene.2019.06.193. **(Impact Factor: 7.2; SCI)**
23. **Aman Joshi** and Prakash Chand, "Electrochemical properties of $Bi_{0.85}Mg_{0.15}PO_4$ nanostructures for supercapacitor applications", **AIP Conference Proceedings**, 2220 (1) 201742020. https://doi.org/10.1063/5.0001155. **(Scopus)**
24. Sukesh Kumar, Prakash Chand, **Aman Joshi,** Vishal Singh, "Modeling of electrical behavior of $LiFePO_4$ cathode materials for lithium ion batteries", **Materials Today: Proceedings,** 28 (1) 2020 337-341. https://doi.org/10.1016/j.matpr.2020.02.263. **(Scopus)**
25. **Aman Joshi**, Prakash Chand, Vishal Singh, "Optical and Electrochemical Performance of Hydrothermal Synthesis of $BiPO_4$ Nanostructures for Supercapacitor Applications", **Materials Today: Proceedings** 32 (2020) 498-503. https://doi.org/10.1016/j.matpr.2020.02.716. **(Scopus)**

26. **Aman Joshi**, Prakash Chand, Vishal Singh, "Electrochemical and Optical Study of $BiPO_4$ Nanostructures for Energy Storage Applications", **Materials Today: Proceedings** 28 (2020) 302-307. https://doi.org/10.1016/j.matpr.2020.02.153. **(Scopus)**
27. Praveen Kumar, Prakash Chand, **Aman Joshi,** "Effect of annealing temperature on structural and dielectric properties of bismuth ferrite nanostructures", **AIP Conference Proceedings**, 2142 (2019) 040007. https://doi.org/10.1063/1.5122344. **(Scopus)**

Book Chapters: 05

1. Pankaj, **Aman Joshi,** and Sonia Bansal, Advancements in MXene-Based Materials for Energy Storage Applications. Materials for Boosting Energy Storage, Volume 1: Advances in Sustainable Energy Technologies, (1477) (2024) 97-123, ACS Symposium Series November 4, 2024 DOI: 10.1021/bk-2024-1477.ch005
2. Pankaj Chaudhary, **Aman Joshi,** Sonia Bansal, and Preet Kaur, Energy Storage Devices: Supercapacitor, Fuel Cells, Rechargeable Batteries, PV/Solar Cells, Hydrogen Storage Devices, and Semiconductors, Materials for Boosting Energy Storage, Volume 3: Advances in Sustainable Energy Technologies 1488 (2024) 169-197, ACS Symposium Series

   DOI: 10.1021/bk-2024-1488.ch008
3. Sunaina Saini**,** **Aman Joshi,** Prakash Chand, "Biomass-derived Porous Carbon for Supercapacitors" CRC Press entitled Fabrication and Applications of Biomass-Derived Porous Carbon (2024)
4. **Aman Joshi**, Sunaina Saini, Prakash Chand, Bismuth Phosphate as an Efficient Electrode Material for Energy Storage Device Application, Renewable Energy towards Smart Grid. Lecture Notes in Electrical Engineering, 823 (2022) 317-325. Springer, Singapore. https://doi.org/10.1007/978-981-16-7472-3_25
5. Sunaina Saini, **Aman Joshi**, Prakash Chand, Recent Advancement in Tungsten Oxide as an Electrode Material for Supercapacitor Applications, Renewable Energy towards Smart Grid. Lecture Notes in Electrical Engineering, 823 (2022) 327-334. Springer, Singapore. https://doi.org/10.1007/978-981-16-7472-3_26

Patents

- **Indian design Patent registered (01)**

Design Patent Registered (Government of India)
Design No. : 357533-001
Title: AI Based Pulse Oximeter
Date of Registration: 18 April, 2023.

- **Patents Published (01)**
  Title: Deep Learning Based Smart Diagnosis of Brain Tumor Using MRI Images
  Publication Date: 13/08/2021 (Indian)

- **Patents Granted (03)**

- Patent Number: 2021105603 (Australian Government/ IP Australia)
  Title: Investigation of Human Brain visual processing with deep learning helps EEG signals predict different stages. Date of Grant: 03 November 2021.
- Patent Number: 2021105454 (Australian Government/ IP Australia)
  Title: Acoustic Concentration Decoding from Electroencephalography Based on Long Squat Term Recollection Network. Date of Grant: 10 November 2021.
- Patent Number: 2021105097 (Australian Government/ IP Australia)
  Title: Machine Learning and IOT Based Innovative Dwarf Robots for Smart Environmental Management. Date of Grant: 18 November 2021.

Conferences (International and National)

1. Oral Presentation entitled "Rare Earth-Doped Bismuth Phosphate Nanostructures for Energy Storage Applications" in the International Conference on Energy Materials and Devices ICEMD – 2024 at Banaras Hindu University during March 19th -21st, 2024.
2. Oral Presentation entitled "Effect of annealing temperature on electrochemical behavior of hydrothermal assisted Bismuth Phosphate Nanostructures" at ECS-244, Sweden during October 8-12, 2023.
3. Oral Presentation entitled "Hydrothermal Assisted Bismuth Phosphate Nanostructures as an Electrode Material for Energy Storage Device Applications" at ICMAT-2023 Singapore from June 26-30, 2023.
4. Oral Presentation entitled "Electrolyte based Performance of Microwave Assisted Bismuth Phosphate Nanostructures for Energy Storage Applications" at SSNTD-22 organized by Department of Physics, National Institute of Technology, Kurukshetra during November 18-20, 2022.
5. Oral Presentation entitled "Temperature Effect on Optical and Electrochemical Performance of Microwave Assisted Bismuth Phosphate Electrode Material for Energy Storage Devices" at RAFM 2022 organized by Atma Ram Sanatan Dharma College, University of Delhi during March 14-16, 2022.
6. Oral Presentation entitled "Bismuth Phosphate as an Efficient Electrode Material for Energy Storage Device Applications" presented at SGESC-2021 organized by Department of Electrical Engineering, NIT Kurukshetra during March 19-21, 2021.

7. Oral Presentation entitled "Effect of Synthesis Time on Electrochemical Properties of $BiPO_4$ Nanostructures for Energy Storage Devices" at ICONN-2021 (Virtual Conference) organized by Department of Physics & Nanotechnology SRM IST, Kattankulathur during February 01-03, 2021.
8. Oral Presentation entitled "Electrochemical Performance of Surfactant based $BiPO_4$ Nanostructures for Energy Storage Applications" at international Conference CRMSC-2021 organized by Department of Chemistry and Biosciences, School of Basic Sciences, Manipal University Jaipur during January 11-12, 2021.
9. Poster Presentation entitled "Investigation of Structural, Optical and Electrochemical Performance of $BiPO_4$ Nanostructures for Supercapacitor Applications" at NCNIT-2020 organized by Department of Physics, National Institute of Technology, Kurukshetra during March 13-15, 2020.
10. Oral Presentation entitled "Electrochemical and Optical Study of $BiPO_4$ Nanostructures for Energy Storage Applications" at International Conference on Advanced Materials and Nanotechnology (AMN-2020 organized by Department of Physics and Materials Science and Engineering, Jaypee Institute of Information Technology, Noida, Uttar Pradesh during February 20-22, 2020.
11. Poster Presentation entitled "Investigation of Optical and Electrochemical Properties of $BiPO_4$ Nanostructures as an Electrode Material for Supercapacitor Applications" at NCSSI-13 organized by IIT Roorkee during December 16-18, 2019.
12. Oral Presentation entitled "Influence of Phase Segregation on Optical and Electrochemical Property of $BiPO_4$ Nanostructures for Supercapacitor Applications" at ICNAN'19 organized by VIT, Vellore during 29th November -1st December, 2019.
13. Poster Presentation entitled "Electrochemical Properties of $Bi_{0.85}Mg_{0.15}PO_4$ Nanostructures for Supercapacitor Applications" at ICC-2019 organized by Govt. Engineering College, Bikaner during October 14-15, 2019.
14. Poster presentation entitled "Influence of power rate in microwave assisted synthesis of $BiPO_4$ nanostructures for supercapacitor applications" at NCNIT-2019 organized by Department of Physics, National Institute of Technology, Kurukshetra during March 9-10, 2019.

WORKSHOPS/STC/FDP/SEMINARS ATTENDED

1. Attended two weeks Refresher Course in **Physical Sciences, Chemical Sciences and Engineering** scheduled from 3rd June - 16th June, 2025 conducted by the UGC - Malaviya Mission Teacher Training Centre, (MMTTC) Punjabi University, Patiala, Punjab, India.
2. Attended an online Faculty Induction Programme from 21st March – 19th April 2022 organized by Ramanujan College, University of Delhi under the aegis of Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching Ministry of Education.

3. Attended a One-day seminar on ‘Modern Trends in Quality Education’ conducted by J.C. Bose University of Science & Technology YMCA in association with Indira Gandhi University Meerpur, Rewari on August 26, 2021.
4. Participated in a Hands-On Workshop on Virtual Labs organized by the University Computer Centre and Digital Affairs on 3rd June 2021 at J.C. Bose University of Science & Technology YMCA, Faridabad.
5. Attended AICTE-sponsored one-week Faculty Training Program on ‘Recent Trends in Physics of Engineering Materials’ organized by the Department of Physics, DCRUST, Murthal, Haryana from June 7th -12th, 2021.
6. Attended one week ‘Professional Development Program’ from 28th June - 2nd July, 2021 sponsored & organized by J.C. Bose University of Science & Technology YMCA, Faridabad.
7. Attended a one-week UGC-Sponsored Short Term Course on “Leadership Building and Communications Skills” from January 14th – 20th, 2022 organized by CPDHE (UGC-HRDC) University of Delhi, Delhi.
8. Online Short-Term Course on “Research Scholars' Week: Applied Sciences and Humanities” Organized by National Institute of Technology Kurukshetra under TEQIP-III from 23-27 September 2020.
9. Online One Week Short Term Course on “Recent Advances in Nanoscience and Nanotechnology (RANN-2020)” Organized by Department of Physics, National Institute of Technology Srinagar during 24-28 August 2020.
10. Online One-week National Workshop on “Advanced Physical Tools and Techniques for Materials Characterization” (APTTMC-2020) Organized by Department of Physics, Mahatma Gandhi Central University, Motihari-845401, Bihar during 28th July - 3rd August 2020.
11. Online Faculty Development Programme on Nanomaterials for Energy Harvesting and Biomedical Applications from 18-05-2020 to 22-05-2020 at Rajamahendravaram, Andhra Pradesh.
12. Online one-week Faculty Development Programme on Nanomaterials and Devices from 27-04-2020 to 01-05-2020 at NITTTR, Chandigarh.
13. Online one-week Faculty Development Programme on Quantum and Energy Materials: Potential and Applications from 20-04-2020 to 24-04-2020 at NITTTR, Chandigarh.
14. One-week Short-Term Course “Advanced Nanomaterials for Energy Storage Devices (ANESD-2019)” organized by Department of Physics, NIT Kurukshetra during October 19-23, 2019.
15. GIAN Course on “Electrochemical Energy Conversion and Storage” at NIT Kurukshetra from 26 – 30 November 2018.
16. Participated in two days 2nd National Workshop on “Ion Beam Induced Growth and Engineering of Materials” from March 4-5, 2016 organized by the Department of Physics, Kurukshetra University, Kurukshetra, Haryana.
17. Participated in Two Days National Seminar on “EMERGING TRENDS IN NANOTECHNOLOGY” from 30th -31st March 2010 at S.D. College, Ambala Cantt, Haryana.

PERSONAL PROFILE:

- Hometown: Kurukshetra (Haryana) India
- Date of Birth: 19th July 1989
- Marital Status: Unmarried
- Father's Name: Ashok Kumar Joshi
- Languages Known: English, Hindi, and Panjabi
- Strength: Good learner and observer

DECLARATION:

I do hereby declare that the particulars of information and facts stated herein above are true, correct and complete to the best of my knowledge and belief.

Date: 20-08-2025

Place: Faridabad
Haryana
INDIA

(Aman Joshi)