Department of Physics
School of Sciences
Maulana Azad National Urdu University
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Gachibowli, Hyderabad,
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MOHD SADIQ

CURRENT DESIGNATION/ INVOLVEMENT	• Currently working as an Associate Professor in Department of Physics, School of Sciences, Maulana Azad National Urdu University (Central University), Hyderabad, Telangana, India.
RESEARCH PROFILES	• Google Scholar ID: https://scholar.google.com/citations?user=l5UZfAQAAAAJ • Scopus ID : 25655274200 • Web of Science Researcher ID : 25655274200 • ORCID ID : 0009-0002-6904-1436

AREA(S) OF SPECIALIZATION	• Experimental Condensed Matter Physics
	• Research Interests: Focus on Solid State Ionics—studying ionic conduction in materials and solid electrolytes for various applications.
	  • Solid polymer electrolytes and biopolymer electrolytes for energy applications.
	  • Blend polymer electrolytes.
	  • Polymer electrolytes and polymer nanocomposite electrolytes.
	  • Electrolytes and electrodes.
	  • Energy Materials.
	  • Supercapacitors.
	  • Li-ion Batteries.

ONGOING ACADEMIC RESEARCH/PROJECTS	• Energy storage/conversion devices, including Li-ion batteries, Supercapacitors and Na-batteries.
INNOVATION WITH FIELD OF STUDY AND COLLABORATIVE EFFORTS	**NATIONAL COLLABORATIONS** • Dr. Yogesh Kumar is an Associate Professor of Physics at the Atma Ram Sanatan Dharma College, University of Delhi with expertise in energy storage, supercapacitors, and battery technologies.

- Dr. Raghvendra Pandey, Assistant Professor, of Physics at the Atma Ram Sanatan Dharma College, University of Delhi research interests span solid-state Ionics, fuel cell materials, solar cell materials, Li-ion batteries, supercapacitors, sensors, and electro-ceramics.
- Dr. Anurag Gaur, is an Associate Professor of Physics at the Netaji Subhas University of Technology (NSUT), New Delhi, has research interests in multiferroics, energy storage devices, nanotechnology, and experimental condensed matter physics.

ACADEMIC AND ADMINISTRATIVE EXPERIENCES

- Engaged in Teaching and Research for more than 8 years and 8 months as an Assistant Professor and regular faculty member at A.R.S.D College, University of Delhi, New Delhi, India.
- Associate Professor, Maulana Azad National Urdu University, Hyderabad, India, Join on 13th November 2024 – Present

EDUCATIONAL QUALIFICATIONS

- Ph. D. (Physics): Jamia Millia Islamia (JMI), A Central University, New Delhi, India.
- M.Phil. (Physics): Central University of Punjab (CUP) Bathinda, Punjab, India.
- M.Sc. (Physics): Banaras Hindu University (BHU), Central University Varanasi, Uttar Pradesh, India.

TEACHING PROFICIENCY

- Material Science
- Solid-State physics
- Experimental Technique in Physics
- Element of modern Physics
- Wave and Optics
- Nuclear and Particle Physics
- Radiation Safety
- Mathematical Physics

RESEARCH PUBLICATION DETAILS

Year 2025

23. Masih, A., Sadiq, M., Singh, A. K., & Thakur, O. P. (2025). Facile synthesis of magnetically retrievable Sr0. 5La0. 5Fe12O19/MXene composite for photocatalytic activity and energy storage applications. *Surfaces and Interfaces*, 106603. (**Impact Factor: 5.7**)

22. Raza, M. M. H., Khan, F., Aalam, S. M., Sadiq, M., & Ali, J. (2025). Synergistic enhancement of carbon nanotube field emission properties through copper nanoparticle flake decoration under argon and nitrogen gas plasma. *Materials Science and Engineering: B*, *320*, 118434. (**Impact Factor: 3.9**)

Year 2024

21. Aalam, S. M., Sarvar, **M., Sadiq,** M., & Ali, J. (2024). A Highly Sensitive Surface-Modified Porous Carbon Nanotube-Based Sensor for Ammonia Gas Detection. *ACS omega*, *9*(4), 4486-4496. (**Impact Factor: 3.7**)

20. Sadiq, M., Singh, A. K., & Thakur, O. P. (2024). Fabrication and electrochemical insights into advanced rGO-modified ternary Cu-doped NiFe2O4/TiO_2 electrodes for high performance supercapacitors. *Ceramics International*. (**Impact Factor: 5.1**)

19. Aalam, S. M., Sarvar, M., Sadiq, M., Bhat, M. N., Tomar, M., & Ali, J. (2024). Enhanced ammonia gas sensing properties in porous multiwalled carbon nanotubes decorated with metal nanoparticles: the impact of concentration of Mn. *Advances in Natural Sciences: Nanoscience and Nanotechnology*, 16(1), 015003. (**Impact Factor: 1.7**)

18. Vidhi, Mohd Sadiq, Anjani Kumar Singh, O. P. Thakur. (2024). Synthesis of rGO/TiO_2 composite electrode material for enhanced electrochemical activity and its applications in supercapacitors. *Ionic*, 30, 5685–5697. (**Impact Factor: 2.5**)

Year 2023

17. The effects of Ar + N_2 plasma power-based attachment of metal nanoparticles on the electron field emission properties of carbon nanotubes. Raza, M.M.H., **Sadiq, M.,** Zulfequar, M., Husain, S. and Ali, J., (2023). *Journal of Physics and Chemistry of Solids*, vol. 178, pp.111309. **(Impact Factor: 4.383)**

16. Improved performance of biopolymer composite electrolyte based cellulose acetate/Zinc Oxide filler for supercapacitors. **Sadiq, M.,** Khan, M. A., Raza, M. M. H., Zulfequar, M., & Ali, J. (2023). *Energy & Environment*, *0*(0). **(Impact Factor: 4.154)**

15. Influence of the growth temperature on electron field-emission stability of the carbon nanotubes' field emitters. Raza, M.M.H., **Sadiq, M.,** Aalam, S.M., Sarvar, M., Zulfequar, M., Husain, S., & Ali, J., (2023). *Journal of Materials Research,* vol. 38(5), pp. 1435–1447. **(Impact Factor: 2.909)**

14. Influence of power-dependent Argon gas plasma treatment on the electron field emission properties of carbon nanotube field-emitters. Raza, M.M.H., **Sadiq, M.,** Zulfequar, M., Husain, S., & Ali, J., (2023). *Diamond and Related Materials*, vol. 132, pp. 109627. **(Impact Factor: 4.1)**

Year 2022

13. Enhancement of Electrochemical Stability Window and Electrical Properties of CNT-Based PVA–PEG Polymer Blend Composites. **Sadiq, M.,** Khan, M.A., Raza, M.M.H., Aalam, S.M., Zulfequar, M., & Ali, J., (2022). *ACS Omega*, vol. 7, pp. 40116-40131. (**Impact Factor: 3.7**)

12. Highly performance of the sodium-ion conducting flexible polymer blend composite electrolytes for double-layer capacitors (EDLCs) supercapacitor. **Sadiq, M.,** Tanwar, S., Raza, M. M. H., Aalam, S. M., Sarvar, M., Zulfequar, M., Sharma, A.L., & Ali, J., (2022). *Energy Storage*, p.e345. (**Impact Factor: 3.2**)

11. Facile synthesis of highly flexible sodium ion conducting polyvinyl alcohol (PVA)-polyethylene glycol (PEG) blend incorporating reduced graphene-oxide (rGO) composites for electrochemical devices application. **Sadiq, M.,** Raza, M. M. H., Zulfequar, M., & Ali, J., (2022). *Journal of Polymer Research,* vol. 29, 107 pp.1-23. (**Impact Factor: 3.061**)

10. Study the electron field emission properties of silver nanoparticles decorated carbon nanotubes based cold-cathode field emitters via post plasma treatment. Raza, M. M. H., **Sadiq, M.,** Sarvar, M., Aalam, S. M., Zulfequar, M., Husain, S., & Ali, J., (2022). *Journal of Materials Science: Materials in Electronics*, vol. 33, pp. 7191-7211.(**Impact Factor: 2.779**)

9.Time-dependent resonating plasma treatment of carbon nanotubes for enhancing the electron field emission properties. Raza, M. M. H., **Sadiq, M.,** Sarvar, M., Aalam, S. M., Zulfequar, M., Husain, S., & Ali, J., (2022). *Journal of Materials Science: Materials in Electronics*, vol. 33, pp. 1211-1227. (**Impact Factor: 2.779**)

Year 2021

8. Study the electron field emission properties of plasma-based reduction of graphene oxide (GO): An ex-situ plasma approach. Raza, M. M. H., **Sadiq, M.,** Khan, S., Sarvar, M., Aalam, S. M., Zulfequar, M., Husain, S., & Ali, J., (2021). *Carbon Trends*, vol.5, pp. 100127. (**Impact Factor: 3**)

7. Studies on flexible and highly stretchable sodium ion conducting blend polymer electrolytes with enhanced structural, thermal, optical, and electrochemical properties. **Sadiq, M.,** Raza, M. M. H., Chaurasia, S.K., Zulfequar, M., & Ali, J., (2021). *Journal of Materials Science: Materials in Electronics*, vol. 32, pp. 19390–19411. (**Impact Factor: 2.779**)

6. Sodium Ion-Conducting Polyvinylpyrrolidone (PVP)/Polyvinyl Alcohol (PVA) Blend Electrolyte Films. **Sadiq, M.,** Raza, M. M. H., Murtaza, T., Zulfequar, M., & Ali, J. (2021). *Journal of Electronic Materials*, vol. 50(2), pp. 403-418. (**Impact Factor: 2.047**)

5. Investigations on Structural, Optical Properties, Electrical Properties and Electrochemical Stability Window of the Reduced Graphene Oxides Incorporated Blend Polymer Nanocomposite Films. **Sadiq, M.,** Raza, M. M. H., Zulfequar, M., & Ali, J. (2021). *Journal of Nanoscience and Nanotechnology*, vol. 21(6), pp. 3203-3217.(**Impact Factor: 1.354**)

Year 2021

4. A single step in-situ process for improvement in electron emission properties of surface-modified carbon nanotubes (CNTs): Titanium dioxide nanoparticles attachment. Raza, M. M. H., **Sadiq, M.,** Khan, S., Zulfequar, M., Husain, M., Husain, S., & Ali, J. (2020). *Diamond and Related Materials*, vol. 110, pp. 108139. (**Impact Factor: 4.1**)

3. Enhancement of Electron Emission Properties of Carbon Nanotubes by the Decoration with Low Work Function Metal Oxide Nanoparticles. Raza, M. M. H., Khan, S., **Sadiq, M.,** Zulfequar, M., Husain, M., & Ali, J. (2020). *Journal of Nanoscience and Nanotechnology*, vol. 20(10), pp. 6463-6468. (**Impact Factor: 1.354**)

Year 2019

2. Arya, A., **Sadiq, M.,** & Sharma, A. L. (2019). Structural, electrical and ion transport properties of free-standing blended solid polymeric thin films. *Polymer Bulletin*, *76*(10), 5149-5172.

Year 2018

1. Arya, A., **Sadiq, M.,** & Sharma, A. L. (2018). Effect of variation of different nanofillers on structural, electrical, dielectric, and transport properties of blend polymer nanocomposites. *Ionics*, *24*, 2295-2319.

Conference Proceedings:

Year 2022

- Structural, thermal, and optical properties of magnesium ion conducting biopolymer electrolytes for supercapacitor applications. **Sadiq, M.,** Chaurasia, S. K., Singh, A. K., Pandey, R., Yadav, H. S., Raza, M. M. H., Kumar, Y., Singh, P.K., Zulfequae, M., & Ali, J. (2022). *Materials Today: Proceedings*, 49, pp. 3126-3132.

- Dielectric properties and ac conductivity behavior of rGO incorporated PVP-PVA blended polymer nanocomposites films. **Sadiq, M.,** Raza, M. M. H., Singh, A. K., Chaurasia, S. K., Zulfequar, M., Arya, A., & Ali, J. (2022). *Materials Today: Proceedings*, 49, pp. 3164-3169.

Year 2021

- Surface modification via silver nanoparticles attachment: An ex-situ approach for enhancing the electron field emission properties of CNT field emitters. Raza, M. M. H., **Sadiq, M.,** Khan, S., Sarvar, M., Parveen, S., Aalam, S. M., Zulfequar, M., Husain, S., & Ali, J. (2021). *Materials Today: Proceedings*, 47, pp. 1542-1549.

Book Chapters

Year 2024

3. NaCMC-Based Biopolymer Composite Electrolytes for Supercapacitor Applications. Kumar, M., Sharma, H., Nair, N., Verma, A., Kumar, J., Suleman, **Sadiq, M.,** ... & Kumar, Y. (2024). In *Advanced Functional Materials for Sustainable Environments* (pp. 229-237). Cham: Springer Nature Switzerland.

2. Ammonia Gas Sensing Characteristics of MWCNT and Bi-MWCNT Operating at Room Temperature. Aalam, S. M., Sarvar, M., **Sadiq, M.,** Alam, M. T., & Ali, J. (2024). In *Advanced Functional Materials for Sustainable Environments* (pp. 73-77). Cham: Springer Nature Switzerland.

1. Synthesis and Characterization of Cu-MOF (Copper-Metal Organic Framework) for Gas Sensor and Electron Emission Devices. Sarvar, M., Aalam, S. M., **Sadiq, M.,** Khan, M. S., & Alia, J. (2024). In *Advanced Functional Materials for Sustainable Environments* (pp. 65-71). Cham: Springer Nature Switzerland.

DETAILS OF CONFERENCE/ SEMINAR /WORKSHOP/ FDP (ATTENDED/ PRESENTED)

12. 4th International Conference on "Current Developments in Atomic, Molecular Optical and Nano physics with Applications" CDAMOP-2015 March 11-14, **2015** at Delhi University, INDIA.
11. Third International conference on nanotechnology for better living National Institute of Technology Srinagar, INDIA May 25-29, 2016.
10. ACSSI-2016 to be held during November 27-30, 2016, for 15th Asian Conference on Solid State Ionics, Indian Institute of Technology Patna.
9. International Meeting on Energy Storage Devices (IMESD)–2018, held on December 10-12, 2018, at IIT-Roorkee, Uttarakhand, India.
8. 2nd National Conference on "RAFM -2020, organised by ARSD College, New Delhi during November 5-6, 2020.
7. Innovative Advancements in Engineering and Technology (IAET-2020), at Jaipur National University, Jaipur, Rajasthan, India, Feb.21-22,2020
6. 7th edition of Hybrid International conference on nanotechnology for better living National Institute of Technology Srinagar, INDIA From 7-11 September 2021
5. 15th National Conference on Solid State lonics (NCSSI-15) held during December 02 to 04, 2023 at the Department of Physics, Institute of Science, Banaras Hindu University, Varanasi.
4. International Conference on Recent Advances in Functional Materials (RAFM-2024), organised by ARSD College, New Delhi
3. Gain Course at "Recent Developments in Nano Materials for Energy and Health Care Applications" at Department of Chemistry, Jamia Millia Islamia, New Delhi – 110025, India During December 19-24, **2016**.
2. Advanced Nanomaterials: Characterization and Applications" at Department of Physics, Banaras Hindu university, Varanasi-221005, November 02-08, 2015.
1. NEP Orientation & Sensitization Programme at SGTB Khalsa College, University of Delhi during 20th February to 29th February 2024**.**

DETAILS OF SUPERVISION (M.SC/M.TECH/PH.D .)

M.Sc. Batch-2025

Name of candidate: Mazhar Subhani

Enrollment No: - A191410

Title: Electrochemical Performance of Carbon Nanotube-Activated Carbon-Based composite electrode for Supercapacitor Applications

Institute: Maulana Azad National Urdu University, Hyderabad

PhD Student

- Co-Supervision one Student (Ms Anjali Yadav)

PROFESSIONAL MEMBERSHIPS	• Life member “Indian Solid State Ionic Society”
PROFESSIONAL ACTIVITIES	**REVIEWER OF INTERNATIONAL JOURNALS** • Ionic Journal • Journal of Cluster Science • Material today Proceeding
ACHIVEMENTS	• NCC B certificate with grading ‘B’ • NCC C certificate with grading ‘B’ • National Integration Camp at Pondicherry

Date: 16/6/2025
Place: Hyderabad

Name: Dr. Mohd Sadiq

[Last update on 16/06/2025]