



Murshidabad University

FACULTY ACADEMIC PROFILE/ CV

Full name of the faculty member: **Dr. Wahida Rahman**

Designation: **Assistant Professor**

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[Google Scholar: https://scholar.google.co.in/citations?user=3XthlzsAAAAJ&hl=en](https://scholar.google.co.in/citations?user=3XthlzsAAAAJ&hl=en)



Academic qualifications:

College/University from which the degree was obtained	Abbreviation of the degree
Berhampore Girl's College	B.Sc.
Jadavpur University	M.Sc.
Jadavpur University	Ph.D

Positions held/ holding: Nil

Research Interests:

- Synthesis of nano-particles.
- Wearable electronics
- Self-powered electronics device fabrication
- Polymer nanocomposites fabrication
- Electroactive and high dielectric thin film synthesis
- Electrospinning nanofibers fabrication
- Designing effective piezoelectric/pyroelectric/triboelectric nanogenerator
- Energy storage

Research guidance: Nil

Projects: Nil

Select list of publications (Only number):

- a) Journals: **6**
- b) Books/ book chapters: Nil
- c) Conference/ seminar volumes: **2**

Membership of Learned Societies: Nil

Invited lectures delivered: Nil

Awards:

- a) Qualified State Eligibility Test (SET) in 2019.
- b) Awarded Research Fellow by University Grant Commission MAULANA AZAD NATIONAL FELLOWSHIP.

Other notable activities:

1. Reviewer of Journals:-

- (a) **Material research express** (IOP science)
- (b) **Smart materials structures** (IOP science)
- (c) **Nano technology** (IOP science)

3. 6 years of Research Experience.

4. 2 years of Teaching Experience at the Graduate and Post-graduate levels.

List of Journal Publication/ Conference Papers: (Last ten years)

1. A comprehensive review on Poly(vinylidene fluoride) (PVDF) from a theoretical and multimodal applications perspective. A. Sk, P Adhikary, **W. Rahman**, P.K.Haldar. *Polym Eng Sci.* 1–14 (2023)
2. Self-polarized ZrO₂/PVDF-HFP Nanocomposite based Piezoelectric Nanogenerator and Single Electrode Triboelectric Nanogenerator for Sustainable Energy Harvesting from Human Movement. M. M. Saikh, N. A. Hoque*, P. Biswas, **W. Rahman** N.Das, , S. Das*, P. Thakur. *Phys. Status Solidi A*, 2000695 (2021).
3. Detection of High sensitive acoustic region for sensible applications of electrospinning based PVDF-TrFE nanofiber sensor. F. Kibria*, **W. Rahman**, S. N. Patra. *Nano Express.* 1.020027 (2020).
4. Electrospinning-based high-sensitive PVDF-TrFE nanofibre sensor with sensitivity dependence on pore diameter. F. Kibria*, **W. Rahman** S. N. Patra. *Current Science*, 119- 5,841(2020).
5. Self-Powered Piezoelectric Nanogenerator Based on Wurtzite ZnO Nanoparticles for Energy Harvesting Application. **W. Rahman**, S. Garain, A. Sultana, T. R. Middy, D. Mandal*. *Materials Today: Proceedings.* 5.9826-9830(2018).
6. Highly durable piezo-electric energy harvester by a super toughened and flexible nanocomposite: effect of laponite nano-clay in poly(vinylidene fluoride). **W. Rahman**, S. K. Ghosh, T. R. Middy and D. Mandal*. *Mater. Res. Express.* 4.095305(2017).
7. Enhanced mechanical energy harvesting ability of electrospun poly(vinylidene fluoride)/hectorite clay nanocomposites. **W. Rahman**, S. K. Ghosh, T. R. Middy and D. Mandal*. *AIP Conf. Proc.* 1942.050081-1(2017).
8. Improved breakdown strength and electrical energy storage performance of γ -poly (vinylidene fluoride)/unmodified montmorillonite clay nano-dielectrics. Sujoy Kumar Ghosh, **W. Rahman**, T. R. Middy, S. Sen and D. Mandal*. *Nanotechnology.* 27.215401(2016).
9. A Simple Method of ZnO Nanoparticle Synthesis and Effect of Surfactant on Their Optical Properties. **W. Rahman**, S. Garain, T. R. Middy, D. Mandal*. *International Journal of Research.* 1(2015).

List of Conference Attended:

1. “The preparation of ZnO Nanoparticles for SelfPower Rectified Nanogenerator”, **Wahida Rahman**, Samiran Garain, Tapas Ranjan Middya, Dipankar Mandal*, **A one-day seminar On Basic Physics to contemporary Research**, 18th March 2015, Jadavpur University, India, Poster.
2. “A Simple Method of ZnO Nanoparticle Synthesis and Effect of Surfactant on Their Optical Properties”, **Wahida Rahman**, Samiran Garain, Tapas Ranjan Middya, Dipankar Mandal*, **National Symposium on Recent Trends in Instrumentation Science and Technology**, 19 – 21st March 2015, Department of Instrumentation Science, Jadavpur University, India, Oral.
3. “Montmorillonite Induced γ -phase in PVDF with Superior Dielectric Property”, **Sujoy Kumar Ghosh**, **Wahida Rahman**, Tapas Ranjan Middya, and Dipankar Mandal*, **National Symposium on Recent Trends in Instrumentation Science and Technology**, 19 – 21st March 2015, Department of Instrumentation Science, Jadavpur University, India, Oral.
4. “Improved Dielectric Property of Flexible and Transparent PVDF/Laponite Clay Nanocomposite”, **Wahida Rahman**, Sujoy Kumar Ghosh, Tapas Ranjan Middya, and Dipankar Mandal*, **4th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN-2015)**, 8-11th December 2015, Indian Institute of Technology Guwahati (IITG), India, Poster.
5. “Self Power Flexible Piezoelectric Nanogenerator Based on Polyaniline and ZnO Nanoparticles”, **Wahida Rahman**, Samiran Garain, Ayesha Sultana, Tapas Ranjan Middya and Dipankar Mandal*, **National conference on Emerging Trends In Condensed Matter Physics & Material Science (ETCMPMS)**, 18–19th March, 2016, Kalyani University, India, Poster.
6. “Flexible and transparent PVDF/Laponite clay nanocomposites for superior dielectric and energy density applications”, **Wahida Rahman**, Sujoy Kumar Ghosh, Tapas Ranjan Middya, and Dipankar Mandal*, **A one-day seminar On Some Recent trends in Research in Physics (SRTRP)**, 21st March, 2016, Jadavpur University, India, Poster.
7. “Unmodified Laponite clay induced γ -poly(vinylidene fluoride) for electrical energy storage application”, **Wahida Rahman**, Sujoy Kumar Ghosh, Tapas Ranjan Middya, and Dipankar Mandal*, **National Conference on Nanotechnology: Materials and Applications (NCoN: M&A)**, 16-17th June 2016, Jadavpur University, India, Poster.
8. “Self-Powered Piezoelectric Nanogenerator Based on Wurtzite ZnO Nanoparticles for Energy Harvesting Application”, **Wahida Rahman**, Samiran Garain, Ayesha Sultana, Tapas Ranjan Middya and Dipankar Mandal*, **International Conference on Functional Nanomaterials (IC-FNM 2016)**, 28 – 29th September 2016, Indian Institute of Engineering Science and Technology (IEST), Shibpur, India, poster.
9. “A Novel ZnO-Based flexible Nanogenerator for Piezoelectric Power Generation”, **Wahida Rahman**, Samiran Garain, Ayesha Sultana, Tapas Ranjan Middya and Dipankar Mandal*, **Two Days Seminar on Twists and Turns in Physics Research: Special Emphasis on Condensed Matter and Biophysics (TTPR-2017)**, 21–22th February 2017, Jadavpur University, India, Poster.
10. “Electroactive Phase Formation in Nanoclay Doped Electrospinning Poly(vinylidene fluoride) Nanofibers for Energy Harvesting Application”, **Wahida Rahman**, Samiran Garain, Tapas Ranjan Middya and Dipankar Mandal*, **Fourth International Symposium on Semiconductor Materials and Devices ISSMD 4**, 8th-10th March 2017, Jadavpur University, India, Poster.

11. “Nanoclay-doped PVDF Electrospun Nanofibers for Energy Harvesting Applications” **Wahida Rahman**, Samiran Garain , Tapas Ranjan Middy and Dipankar Mandal*,**International Conference on Energy Options for Tomorrow :Technology to Sustainability (ICEOT 2017)** ,17th-19th April 2017,The Neotia University, Kolkata, India, Poster.

12. “Enhanced Mechanical Energy Harvesting Ability of Electrospun Poly(vinylidene fluoride)/Hectorite clay Nanocomposites”, **Wahida Rahman** , Sujoy Kumar Ghosh, Tapas Ranjan Middy, and Dipankar Mandal*, **62nd DAE Solid State Physics Symposium**, 26th to 30th December 2017, Bhabha Atomic Research Centre, Mumbai, India, Poster.

13. “Highly Efficient Flexible Piezo-driven Self-Powered High Dielectric CuS /PVDF Composite Based Nanogenerator and Single Electrode Triboelectric Nanogenerator for Energy Harvesting”, **Wahida Rahman**, Pabitra Kumar Paul*, **2nd 2019 International Conference on Nano Science & Technology (ICNST 2019)**, 19th to 22nd August 2019, Incheon, South Korea.