



## Prof. Mohammad Rizwanur Rahman

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### POST HOLD AND DURATION

**Professor: 2<sup>nd</sup> Dec 2024- Present**

**Organization:** National Institute of Technology Karnataka, India

#### Academic Qualification:

**PhD Thesis Title:** Dynamic nuclei polarization of <sup>29</sup>Si nuclei using lithium related centers in isotopically controlled Silicon. (Keio University, Japan, 2011)

Experience:

Sl. No.	Position	University/Institute	Duration (Month, Year)
1	Post Doctoral Fellow*	National Taiwan University	March 2011- July 2012
2	Guest Faculty	Central University	August 2012-Nov 2012
3	Assistant Professor	National Institute of Technology Karnataka, Surathkal	Nov 2012-Sept. 2019
4	Associate Professor	National Institute of Technology Karnataka, Surathkal	Sept. 2019-Dec. 2024
5	Professor	National Institute of Technology Karnataka, Surathkal	Dec. 2024- Till Date

**\*Post-Doctoral Fellow** (March 2011- July 2012) of **Academia Sinica, Taiwan**, under the mentorship of **Prof. F. C. Chou** of **National Tawian University, Taiwan** for the growth of SrZnO<sub>2</sub> Single crystal using **Optical Floating Zone Technique**.

#### Achievements:

- DST-IMPRINT Project:** Development of Cost-Effective Magneto-Rheological (MR) Fluid Damper in Two wheelers and Four Wheelers Automobile to Improve Ride Comfort and Stability (*Co-Investigator*)
- Fellow of **Academia Sinica, Taiwan**
- Japanese government Scholarship (**Monbukagakusho Scholarship**), Japan

**Research Project:**

<b>Sl. No.</b>	<b>Year</b>	<b>Title</b>	<b>Amount (Lakhs)</b>	<b>Funding Agency</b>
6.	2025	Single Photon Detection in NIR Region with Rare Earth Element Doped Graphene Quantum Dots (PIs)	12	Quantum Research Park
5.	2019	Development of Metallic nanoparticles-enhanced phase change Materials for thermal energy storage (PIs)	5	VGST
4.	2018	Synthesis of Silver Nanoparticles at laboratory scale and further scaling up to pilot scale at HZL (PIs)	11.75	Hindustan Zinc Ltd.
3.	2018	Augmentation of Research Facilities to cater the Research in the Domain of Materials Engineering ( <i>Co-Investigator</i> )	297	DST FIST
2.	2017	Development of Cost-Effective Magneto-Rheological (MR) Fluid Damper in Two wheelers and Four Wheelers Automobile to Improve Ride Comfort and Stability ( <i>Co-Investigator</i> )	355	DST-IMPRINT
1.	2008	<i>Dynamic nuclear polarization of <sup>29</sup>Si nuclei using by Li related centers in silicon (Investigator)</i>	9 Lakhs Yen	Keio Leading Edge Laboratory

**Lab Developed**

<b>Sl. No.</b>	<b>Lab Name</b>	<b>Equipment</b>	<b>Cost (Lakhs INR)</b>
1	Synthesis Lab (CRF)	Type I and II Water System, Ultra Centrifuge (50,000 rpm speed), Probe Solication System, Gas Sensing System, Glove Box, UV-VIS NIR, Dielectric Measurement Unit	150
2	Metallography Lab	Inverted Microscope, Polarized Microscope, Automatic Polishing Machine	23
3	Advance Material Characterization Lab	High resolution X-ray diffraction (XRD) and Field Emission Scanning Electron Microscope (FESEM)	297
4	Nanomaterials Synthesis Lab	Monowave 200 from Anton Parr	14
5	Photoluminescence Spectrometer	FLS1000, Edinburgh Instruments	200

## Research Interest

- Carbon Nanotube and Graphene and Graphene Quantum Dots
- Application of Graphene Quantum dots in Energy storage devices and Cancer treatment
- Metallic and Metal Oxide Nanomaterials Synthesis
- Mineral Beneficiation

## COURSES TAUGHT:

- Electronic Properties of Materials (UG level)
- Nanoelectronics (PG Level)
- Carbon Nano structure (PG Level)
- Introduction to Nanoscience and Nanotechnology (PG Level)
- Computational Materials Science (PG Level)

## Patent:

1. Aadhya Paul, Palani P, Mohammad Muhiuddin, Mohammad Rizwanur Rahman “Machine for Making Nanopowder Impregnated Cloths” Design No. 429322-001, Date of filling: 04/09/2024, Date of Issue: 28/11/2024.
2. Md. Waseem Ahmad, Mohammad Rizwanur Rahman, Anan Kashyap, Sameer Mujawar, Karma Wangda, Ashish Jain, Mohammad Muhiuddin, Aliullah Zaifullah Khan, Kaustubh Kishore Ambekar, “Method of Extracting Intercellular (RI) and Extracellular (Re) Resistance from a Multi Frequency Biompedance Spectroscopy” Patent No: **563859**. Patent Application Number: 202341049595/date:22-07-2023)

## Post-Doctoral Fellow/ Ph.D. / M. Tech. Guidance

### Mentor of 2 Nos. Post-Doctoral Fellow

#### 3. Dr. Kalpana Kumari

**Project Title:** Development of Iron Oxyborates Antiferromagnet for Dielectric, Electrical, Gas Sensor and Other Applications. (Funded By DST SERB Post Doctoral: Completed)

#### 4. Dr. Norem Aruna Devi

**Project Title:** Evaluation and development of graphene quantum dots as theranostic agents for breast cancer (NITK Funded Post Doctoral Fellow: Ongoing)

**M. Tech:** 34 (completed) / 1 (Ongoing)

**Ph. D:** 4 (Completed) / 5 (Ongoing)

4 Completed: 3 Single and 1 Joint.

5 Ongoing: 2 Single and 3 Joint.

### Ph.D. Guided and enrolled

S.No.	Name	Ph.D. thesis titles	Admitted	Degree awarded
1	Arun M N	A study on sedimentation issue in magnetoreological fluids	2016	2021
2	Mohanraj G T	Design and fabrication of optimized Magnetic roller for permanent roll magnetic separator for the processing of low grade iron ore	2016	2022
3	K Divya Bharathi	Development and Characterization of Metal / Carbon Nanomaterials Composit coating prepared by electrodeposition technique	2017	2023
4	Arunkumar D. S. (Co-Guide: Dr. krishnamoorty K)	Fabrication of Low Flexible Carbon nanotube coated Fabric for special applications	2017	2023
5	Vishwanath Pratap Singh (Co-Guide: Dr. krishnamoorty K)	Graphene Oxide based antenna for special application	2019	2025
6	Mohammad Muhiuddin (Co-Guide: Dr. Mohammad Waseem Akthar)	Graphene Quantum dots based supercapacitor	2020	2025
7	Mahaveer Jain (Co-Guide: Prof. Udaya Bhat K)	Surface Upgradation of Austenitic Stainless Steel Castings Following Shot Peening and Nitriding	2021	Ongoing
8	Javed Ali	Cancer Biomarker detection using electrochemiluminescence technique	2024	Ongoing
9	Neda Fitama Iqbal	Solid State Supercapacitor	2024	Ongoing
10	Tasneem Sheikh	Cancer Biomarker detection using electrochemiluminescence technique	2025	Ongoing

### List of Paper in Peer Reviewed Journal Published

50. Anushree Jogi, **Mohammad R. Rahman**, Mamatha D. Daivajna “*Optimizing the Structural and Magnetic Properties of Ba<sub>0.5</sub>Sr<sub>0.5</sub>Fe<sub>12</sub>O<sub>19</sub> Hexaferrite through Fe/Sr-Ba Molar Ratio*” *Physica B: Condensed Matter* (In Press)
49. Faheem Kareem, Koo Pey Ting, Batrisyia Safwah Mohd Salleh, Mohammad Muhiuddin, **Mohammad Rizwanur Rahman**, Minhaz Uddin Ahmed “*Development of a TiO<sub>2</sub>-MXene-Nafion nanocomposite based immunosensor for sensitive electrochemiluminescence detection of porcine skin gelatin*”, *Food Chemistry*, **498**, (2026), 147253.

48. S. Appu, B.R. Anusha, Udayabhanu, M. Muhiuddin, **M.R. Rahman**, K. Prashantha “*Ge-doped 3D flower-like  $Cu_2SnS_3$  structures for enhanced lithium-ion storage performance*”, Journal of Energy Storage, **138**, (2025), 118513.
47. Abhay Singh Rajawat, Naim Ahmad, Risvana Nasril, Tasneem Sheikh, Mohammad Muhiuddin, Savita Sahu, Ashwani Gautam, Arvind Kumar, Md Imteyaz Ahmad, GA Basheed, **Mohammad R Rahman**, Waseem Akhtar “*Substrate-bias driven sputter deposited  $\beta$ -phase dominated tungsten film for spintronic applications*” Thin Solid Films, **828** (2025) 140795.
46. TV Chandramouli, S Joladarashi, MR Ramesh, **MR Rahman** “*Microstructure, Mechanical Properties, and Tribological Properties of Fe-Based Composite Coatings Reinforced with WC-Co and  $Cr_3C_2$* ”, Journal of Materials Engineering and Performance **34** (2025), 10323-10338.
45. Ramya Moodakare, Bibekananda Sahoo, Naveen Bharadishettar, **Mohammad Rizwanur Rahman**, Mohammad Muhiuddin, and Udaya Bhat K “*Synthesis and characterization of N-doped reduced graphene oxide for the supercapacitor application*”, Journal of Materials Science: Materials in Electronics, **36** (2025), Article Number 616.
44. Mohammad Muhiuddin, Naveen Bharadishettar, Naorem Aruna Devi, Ashwani Gautam, Sandeep Singh Chauhan, Abu Bakar Siddique, Mohammad Imteyaz Ahmad, MN Satyanarayan, Udaya Bhat, Waseem Akhtar, **Mohammad Rizwanur Rahman** “*Neodymium doped graphene quantum dots/PANI composite for supercapacitor application*” Journal of Alloys and Compounds **1012** (2025) 178516.
43. K. Divya Bharathi, K. Udaya Bhat P. Devadas Bhat D.S. Arun Kumar, **M. R. Rahman**, “*The cohesion strength of electrodeposited Zn/GO nanocomposite coating on stainless steel*”, Diamond and Related Materials, **152** (2025), 111922.
42. Sarda Sharma, Sandeep Singh Chauhan, Karumbaiah N Chappanda, **Mohammad Rizwanur Rahman**, “*High energy density supercapacitor based on Ag doped  $MoO_3$  nanorods on a flexible carbon cloth*” Materials Letter, **380** (2024), 137728.
41. GKR Senadeera, WMSK Weerasekara, T Jaseetharan, PU Sandunika, JMKW Kumari, MAKL Dissanayake, Mohammad Muhiuddin, **Mohammad Rizwan Rahman**, Udaya Bhat, Mohammad Waseem Akhtar, Udaya Kumar, AB Siddique, Piyasiri Ekanayake “*Efficiency Enhancement in Dye-Sensitized Solar Cells through Neodymium-Doped Graphene Quantum Dot-Modified  $TiO_2$  Photoanodes*” Physica B: Condensed Matter, **699** (2025), 416797.
40. Abhilash, Sumit Kumar Shrivastava, **Mohammad Rizwanur Rahman**, Pratima Meshram, “*Red Mud Neutralisation by  $CO_2$  Promotes Alkali Recovery and Higher Scandium Extraction*”, Waste and Biomass Valorization, (2024) 1-9
39. V. P. Singh, K Kandasamy, **M. R. Rahman** “*Graphene Oxide Assisted Humidity Sensing Antenna Sensor*” Transactions on Electrical and Electronic Materials, **26**, (2025) 69-77.

38. Smita Patil, Sunil Meti, Mallikarjun Anandalli, Hanamanta Badiger, Rajashekhar F Bhajantri, L Pratheek, Mohammad Muhiuddin, **Mohammad Rizwanur Rahman**, Balachandra G Hegde “*Investigation of structural, thermal, magnetic, and dielectric properties of Yb<sup>+3</sup> doped nickel cobalt ferrite nanomaterial for electro-magnetic applications*” *Journal of Materials Science: Materials in Electronics*, **35**, (2024) 1-17.
37. N. Behera, M. R. Ramesh, **M. R. Rahman**, “*Elevated temperature wear and friction performance of WC-CoCr/Mo and WC-Co/NiCr/Mo coated Ti-6Al-4V alloy*”, *Materials Characterization*, **215** (2024), 114207: (**Impact Factor: 4.8**).
36. Mohammad Muhiuddin; Naorem Aruna Devi; Naveen Bharadishettar; Sunil Meti; M. N. Satyanarayan; Udaya Bhat. K.; Waseem Akhtar; **M. R. Rahman** “*Cost Effective Synthesis of Sulfur and Nitrogen co-doped Graphene Aerogel and Application in Binder Free Supercapacitors*” *Journal of Applied Physics*, **136** (2024), 034901: (**Impact Factor: 2.286**).
35. V. P. Singh, K Krishnamoorthy, and **M. R. Rahman** “*A Flexible and Biodegradable Graphene Oxide Antenna Sensor for Monitoring Subsoil Health*” *ACS Appl. Nano Mater.*, **7** (2024), 15223: (**Impact Factor: 5.3**).
34. Mohammad Muhiuddin, Naorem Aruna Devi, Naveen Bharadishettar, Sunil Meti, Abu Bakr Siddiqui, M. N. Satyanarayan, Udaya Bhat. K., Waseem Akhtar, and **M. R. Rahman**, “*Facile and Rapid Method to Synthesis Sulfur and Nitrogen Co-doped Graphene Quantum Dots as an Electrode Material with Excellent Specific Capacitance for Supercapacitors Application*” *Diamond and Related Materials*, **146** (2024), 111232: (**Impact Factor: 4.3**).
33. V. P. Singh, K Krishnamoorthy, and **M. R. Rahman**, “*Graphene Oxide Coated Flexible Fabric Antenna Sensor for Contact-free H<sub>2</sub>O Sensing*” *IEEE Sensors Journal*, **24** (2023), 1175 - 1182 (**Impact Factor: 4.325**).
32. T. V. Chandramouli, Sharnappa Joladarashi, M. R. Ramesh, and **M. R. Rahman** “*Effect of Temperature on wear and friction performance of WC-Co and Cr<sub>3</sub>C<sub>2</sub> reinforced with 17-4PH Fe-Based composite coatings*” *Welding in the World*, **68** (2024), 91-105: (**Impact factor: 2.1**).
31. Arun Kumar DS, Sandeep Singh Chauhan, K Krishnamoorthy, K Divya Bharathi, Abhilash Ravikumar, and **M. R. Rahman** “*Flexible and cost effective CNT coated cotton fabric for CO gas sensing application*”, *Sensors and Actuators A: Physical*, **362** (2023) 114640: (**Impact factor: 4.291**).
30. Bhaskar Das, Syed Minhaz Hossain, GT Mohanraj, Subhajt Roy Chowdhury, Abu Bakar Siddique, **M. R. Rahman**, and Mallar Ray, “*Tunable dual color emission from the*

- opposite faces of silicon nanoparticle embedded gel-glass*”, **Journal of Luminescence**, **263** (2023), 120045: **(Impact factor: 4.171)**.
29. Smita Patil, Sunil Meti, Pratibha S. Kanavi, Rajashekhar F. Bhajantri, Mallikarjun Anandalli, Rajib Mondal, Sudip Karmakar, Mohammad Muhiuddin, **M. R. Rahman**, Chethan Kumar B. and Balachandra G. Hegde, “*A study on solubility of bismuth cations in nickel cobalt ferrite nanoparticles and their influence on dielectric and magnetic properties*” **Materials Science & Engineering B**, **296** (2023), 116570: **(Impact Factor: 3.407)**.
28. K Divya Bharathi, and **M. R. Rahman**, Ajay Kumar Yadav, Rudra Murthy BV, and Devadas Bhat Panemangalore “*Optimized Heat Transfer Rate in Cu/Cnt Nano Composite Prepared by Electrodeposition Technique*” **ECS Advances**: **2**, (2023) 011001.
27. MN Aruna, **M. R. Rahman**, Sharanappa Joladarashi, SherSingh Meena, Debashish Sarkar, and CK Umesh “*A study on Magnetorheological and Sedimentation Properties of Soft Magnetic Fe<sub>58</sub>Ni<sub>42</sub> Particles*” **Journal of Magnetism and Magnetic Materials**, **563** (2022), 169934: **(Impact Factor: 3.097)**.
26. GT Mohanraj, Sharnappa Joladarashi, Harish Hanumanthappa, Bharath Kumar Shanmugam, Harsha Vardhan, Gajanan M Naik, and P Devadas Bhat, and **M. R. Rahman** “*Numerical approach for optimization of magnetic roller and evaluating the performance of permanent magnet roller separator through design of experiment*” **Alexandria Engineering Journal**, **61** (2022), 13011-13033: **(Impact Factor: 6.626)**.
25. KV Moudgalya, P Sekar, HS Hebbar, and **M. R. Rahman** “*Effect of Zinc and bio-glass addition on mechanical properties and corrosion behaviour of Magnesium based composites for orthopaedic application – a preliminary study*” **Journal of Materials Engineering and Performance**, **31** (2022), 7561–7585: **(Impact Factor: 2.036)**.
24. DS Arun Kumar, TR Puneeth Kumar, K Krishnamoorthy, P Devadas Bhat, and **M. R. Rahman** “*Flexible Electromagnetic Shielding Material Using Multi-Walled Carbon Nanotube Coated Cotton Fabric*” **IEEE Transactions on Components, Packaging and Manufacturing Technology**, **12** (2022), 479 – 488: **(Impact Factor: 2.2)**.
23. GT Mohanraj, **M. R. Rahman**, SB Arya, Ranju Barman, P Krishnendu, and Sher Singh Meena “*Characterization study and recovery of copper from low grade copper ore through hydrometallurgical route*” **Advanced Powder Technology**, **33** (2022), 103382: **(Impact Factor: 4.969)**.
22. S Meti, HP Sagar, **M. R. Rahman**, and K. Uday Bhat “*Assessment of Triboelectricity in Colossal-Surface-Area-Lanthanum Oxide Nanocrystals Synthesized via Low-Temperature Hydrothermal Process*” **Journal of Materials Science: Materials in**

- Electronics**, **32** (2021), 20351–20361: (**Impact Factor: 2.779**).
21. M N Aruna, **M. R Rahman**, S Joladarashi, H Kumar, and P D Bhat “*Influence of different fumed silica as thixotropic additive on carbonyl particles magnetorheological fluids for sedimentation effects*” **Journal of Magnetism and Magnetic Materials**: **529** (2021), 167910: (**Impact Factor: 3.097**).
  20. GT Mohanraj, **M. R Rahman**, Sharnappa Joladarashi, Harish Hanumanthappa, Bharath Kumar Shanmugam, Harsha Vardhan, and Shahid Azam Rabbani “*Design and fabrication of optimized magnetic roller for permanent roll magnetic separator (PRMS): Finite element method magnetics (FEMM) approach*” **Advanced Powder Technology**, **32** (2021), 546-564: (**Impact Factor: 4.969**).
  19. R Ramteke, K Kumari, S Bhattacharya, SK Sharma, and **M. R Rahman** “*Impedance spectroscopy study of zinc oxide incorporated iron borate glass-ceramic*” **Current Applied Physics**, **22** (2021), 84-93: (**Impact Factor: 2.856**).
  18. K Kumari, R Reeshma, DS Arun Kumar, Sunil Meti, and **M. R Rahman** “*Fabrication of Ag/PDMS-TiO<sub>2</sub> flexible piezoresistive pressure sensor*” **Physica B: Condensed Matter**: **597**, (2020) 412386: (**Impact Factor: 2.988**).
  17. M. N. Aruna, **M. R. Rahman**, Sharnappa Joladarashi, and Hemantha Kumar, “*Investigation of sedimentation, rheological, and damping force characteristics of carbonyl iron magnetorheological fluid with/without additives*” **Journal of the Brazilian Society of Mechanical Sciences and Engineering**, **42**, (2020) 228: (**Impact Factor: 1.98**).
  16. Sunil Meti, Udaya K. Bhat, and **M. R. Rahman**, “*Colossal dielectric permittivity of Nylon-6 matrix-based composites with nano-TiO<sub>2</sub> fillers*” **Applied Physics A**, **126** (2020) 264. (**Impact Factor: 1.784**)
  15. M. Z. Shamim, S. Persheyev, M. Zaidi, M. Usman, M. Shiblee, S. J. Ali and **M. R. Rahman** “*Synthesis of Lithography Free Micro-Nano Electron Field Emitters Using Pulsed KrF Laser Assisted Metal Induced Crystallization of Thin Silicon Films*” **Integrated Ferroelectrics**, **204** (2020) 121–132: (**Impact Factor: 0.836**).
  14. M. Z. Shamim, S. Persheyev, M. Zaidi, M. Usman, M. Shiblee, S. J. Ali and **M. R. Rahman**, “*Micro-Nano Fabrication of Self-Aligned Silicon Electron Field Emitter Arrays Using Pulsed KrF Laser Irradiation*” **Integrated Ferroelectrics**, **204** (2020) 47–57: (**Impact Factor: 0.836**).
  13. Rajat Ramteke, Kalpana Kumari, Soumalya Bhattacharya, and **M. R. Rahman**, “*Synthesis and characterization of zinc oxide incorporated iron borate glass-ceramic*” **Journal of Alloys and Compound**, **811** (2019), 151876: (**Impact Factor: 4.175**).

12. Sandeep Singh Chauhan, Deepak Kumar, Poornendu Chaturvedi, and **M. R. Rahman**, “Highly Sensitive and Stable NO<sub>2</sub> Gas Sensors Based on Random and Aligned Networks of SWCNTs” **IEEE Sensors Journal**, **19** (2019), 11775. (**Impact Factor: 3.076**)
11. M N Aruna, **M. R. Rahman**, Sharnappa Joladarashi and Hemantha Kumar, “Influence of additives on the synthesis of carbonyl iron suspension on rheological and sedimentation properties of magnetorheological (MR) fluids” **Materials Research Express**, **6** (2019), 086105: (**Impact Factor: 1.449**).
10. Sunil Meti, Sagar Prutvi Hosangadi, **M. R. Rahman**, and Udaya K. Bhat, “A single step unique microstructural growth of porous colossal dielectric constant titanium oxide” **Applied Physics A**, **125** (2019), 188: (**Impact factor:1.784**).
9. Sunil Mathi, **M. R. Rahman**, Imteyaz Ahmad, and Udaya Bhat K, “Chemicals free synthesis of graphene oxide in the preparation of reduced graphene oxide-zinc oxide nanocomposite with improved photocatalytic properties” **Applied Surface science**, **451** (2018), 67-75: (**Impact Factor: 7.392**).
8. Hosangadi Prutvi Sagar, Vignesh Mahalingam, Debiprosad Roy Mahapatra, A, Gopalkrishna Hegde, Sathyanarayana Hanagud, and **M. R. Rahman**, “Transient dynamic distributed strain sensing using photonic crystal waveguides” **Applied Optics**, **56** (2017), 7877-7885. (**Impact Factor: 1.791**).
7. Brahmanandam Javvaji, Bhamy Maithry Shenoy, D Roy Mahapatra, Abhilash R, G M Hegde, and **M. R. Rizwan**, “Stable Configurations of Graphene on Silicon”, **Applied Surface Science**, **414** (2017), 25-33: (**Impact Factor: 7.392**).
6. B. Koteswararao, R. Kumar, P. Khuntia, Sayantika Bhowal, S. K. Panda, **M. R. Rahman**, A. V. Mahajan, I. Dasgupta, M. Baenitz, Kee Hoon Kim, and F. C. Chou, “Magnetic properties and heat capacity of the three-dimensional frustrated  $S = 1/2$  antiferromagnet  $PbCuTe_2O_6$ ” **Physical Review B**, **90** (2014), 035141: (**Impact Factor: 4.904**).
5. M. R. Rahman, B. Koteswararao, S. H. Huang, Kee Hoon Kim, and F. C. Chou: “Diluted magnetism in Mn-doped SrZnO<sub>2</sub> single crystal” **Journal of Applied Physics** **114** (2013), 123903: (**Impact Factor: 2.068**).
4. T. Itahashi, H. Hayashi, **M. R. Rahman**, Itoh, L. Vlasenko, M. P. Vlasenko, and D.S. Poloskin, “Optical and dynamic nuclear polarization of <sup>29</sup>Si nuclei via photoexcited triplet states of oxygen-vacancy complexes in isotopically controlled silicon” **Physical Review B**, **87** (2013), 075201: (**Impact Factor: 4.904**).
3. **M. R. Rahman**, M. P. Vlasenko, L. S. Vlasenko, E. E. Haller, and K. M. Itoh: “Splitting of electron paramagnetic resonance lines of lithium-oxygen centers in <sup>28</sup>Si isotope

- enriched silicon*” **Solid State communication**, **150** (2010), 2275: (**Impact Factor: 1.934**).
2. **M. R. Rahman**, T. Itahashi, M. P. Vlasenko, L. S. Vlasenko, E. E. Haller, and K. M. Itoh, “*Dynamic nuclear polarization of <sup>29</sup>Si nuclei induced by Li and Li-O centers in silicon*” **Japanese Journal of Applied Physics**, **49** (2010), 103001: (**Impact Factor: 1.491**).
  1. **M. R. Rahman**, L.S. Vlasenko, E.E. Haller and K.M. Itoh: “*Electron Paramagnetic Resonance and Dynamic Nuclear Polarization of <sup>29</sup>Si Nuclei in Lithium–Doped Silicon*” **Physica B**, **404** (2009), 5060: (**Impact Factor: 2.988**).

### International Conference

13. **M. R. Rahman** “*Design of Doped Graphene Quantum Dot Composites for Next-Generation Energy Storage Devices*” **AIJR Abstract** **8** (2026) 128, presented in **International Conference on Advances in Multidisciplinary Sciences and Engineering (ICAMSE 2026)**.
12. Mohammad Muhiuddin, P Palani, Neda Fatima Iqbal, Udaya Bhat, **Mohammad Rizwanur Rahman** “*Engineered Graphene Quantum Dots for High-Temperature Supercapacitors: A Pathway Toward Sustainable and High-Performance Energy Storage*” **AIJR Abstract** **8** (2026) 6, presented in **International Conference on Advances in Multidisciplinary Sciences and Engineering (ICAMSE 2026)**.
11. Devi, N.A, Chatterjee, A., Muhiuddin, M., Bhat K, U., Ray, A., **Rahman, M.R.** “*Development of Graphene Quantum Dot as Therapeutic Agent for Breast Cancer Treatment: A Bioinformatics Approach*”, Published Abstract, International Conference on Advances in Biotechnology and Bioinformatics (ICABB) 2024, Abstract Code: PSI-AMB 82. Organized in association with the XXI Convention of the Biotech Research Society, India (BRSI), held at Dr. D.Y. Patil Vidyapeeth, Pune, November 26-29, 2024. (**Won Best Poster award**)  
<https://dpu.edu.in/icabb2024/Magazine/documents/AnimalandMedicaBiotechnology.pdf>
10. KV Swaroop, M N Aruna, H Kumar, **M. R Rahman**, “*Investigation of steady state rheological properties and sedimentation of coated and pure carbonyl iron particles based magneto- rheological fluids*” **Materials Today: Proceedings**, **39**, (2021) 1450-1455. (**Impact Factor: 2.59**)
9. KD Bharathi, MR Rahman, S Choudhary, SB Arya “*Development and characterization of Cu/MWCNT composite prepared by electrodeposition technique*” **AIP Conference**

- Proceedings: 2247** (2020), 040019. (**Impact Factor: 0.189**)
8. KV Swaroop, MN Aruna, H Kumar, **M.R. Rahman**, “*Rheological characterization of tragacanth gum coated carbonyl particles based magnetorheological fluid*” **AIP Conference Proceedings: 2247** (2020), 020018 (**Impact Factor: 0.189**)
  7. Aruna M N, M.R. Rahman, Sharnappa Joladarashi and Hemantha kumara, “*Investigating Sedimentation and Rheological properties of Magnetorheological Fluids using various carrier fluids*” **IOP Conf. Series: Materials Science and Engineering: 577** (2019) 012049. (**Impact Factor: 0.53**)
  6. K. Kumari, R. Ramteke and **M. R. Rahman** “*Complex Impedance Spectroscopy Properties of Fe<sub>3</sub>BO<sub>6</sub> Nanocrystallites Prepared by Combustion Method*” **Materials Today: Proceedings: 18**, (2019), 4330. (**Impact Factor: 0.97**)
  5. Mohanraj G.T, P Krishneindu, R.P. Choudhary, Meena, Sher Singh, Yusuf S.M, **M. R Rahman** “*Mineralogical studies of low-grade iron ore from Bellary-Hospet region, India*”, AIP Conference Proceedings **208720** 02001 22nd International Conference on Inventive Research in Material Science and Technology, ICIRMCT 2019 Coimbatore30 January 2019 through 31 January 2019 Code 146165
  4. Javvaji, Brahmanandam, M. Ajmalghan, R. Mahapatra, **M. R. Rahman**, G. M. Hegde “*Optoelectronic properties of graphene on silicon substrate: Effect of defects in graphene*” Proceedings of SPIE - The International Society for Optical Engineering, **93572015** Article number 93571X 23rd SPIE Conference on Physics and Simulation of Optoelectronic Devices San Francisco 9 February 2015 through 12 February 2015 Code 112144.
  3. Javvaji, Brahmanandam, M. Ajmalghan, R. K, Abhilash, D. R. Mahapatra, **M. R. Rahman**, G. M. Hegde “*Electronic band structure and photoemission spectra of graphene on silicon substrate*” 2014 IEEE 2nd International Conference on Emerging Electronics: Materials to Devices, ICEE 2014 - Conference Proceedings 2014 Article number 71511322014 2nd IEEE International Conference on Emerging Electronics, ICEE 2014 Bengaluru 3 December 2014 through 6 December 2014 Code 113623.
  2. J. Brahmanandam, M. Ajmalghan, R. K. Abhilash, B. M. Shenoy, D. R. Mahapatra, M. R. Rahman, G. M. Hegde “*Optoelectronic properties of graphene silicon nano-texture*” Proceedings of SPIE - The International Society for Optical Engineering, **89802014** Article number 89801B Physics and Simulation of Optoelectronic Devices XXII3 February 2014 through 6 February 2014 Code 105325

1. V. Vikram, **M. R. Rahman** Monica Katiyar, “*Giant magnetoresistance in Ni/Cu multilayers fabricated by electron-beam evaporation*”, AIP Conference Proceedings, **1003**, (2008), 37–39.

#### **Additional Information**

1. **Chairman of Indian Institute of Metal, Surathkal Chapter form 2022**
2. **Co-Chairman of Central Research Facility from 2021-2023.**
3. **Co-Chairman of Central Research Facility, NITK from August 2021- Oct. 2023**
4. **Advisory committee member of STEP NITK from 12/10/2021-12/10/2023.**