



Mohammad Rizwanur Rahman

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Google Scholar Link:

https://scholar.google.com/citations?hl=en&user=Hw_431EAAAAJ&view_op=list_works&authuser=1&sortby=pubdate

CURRENT POST

29 Nov 2012 - Present

Job Title: Associate Professor

Organization: National Institute of Technology Karnataka, India

PhD Thesis Title: Dynamic nuclei polarization of ^{29}Si nuclei using lithium related centers in isotopically controlled Silicon. (**Keio University, Japan**)

Mentor of Post-Doctoral Fellow: Dr. Kalpana Kumari (2017-2019)

Project Title: Development of Iron Oxyborates Antiferromagnet for Dielectric, Electrical, Gas Sensor and Other Applications.

Research Project:

Sl. No.	Year	Title	Amount (Lakhs)	Funding Agency
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 (Co-Investigator)	297.5	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 (Co-Investigator)	355	DST-IMPRINT
1.	2008	<i>Dynamic nuclear polarization of ^{29}Si nuclei using by Li related centers in silicon (Investigator)</i>	0.9 Million Yen	<i>Keio Leading Edge Laboratory</i>

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

4. Reviewer of International Journal

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

M. Tech: 17 (completed)

Ph. D: 5 (ongoing)

Research Interest

- **Carbon Nanotube and Graphene**

COURSES TAUGHT:

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

16 International Journal and 7 Conferences (National and International)

Paper in Peer Reviewed Journals:

18. 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.
17. 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.
16. 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.
15. K. Kumari, R. Ramteke and **M. R. Rahman** “*Complex Impedance Spectroscopy Properties of Fe₃BO₆ Nanocrystallites Prepared by Combustion Method*”, *Materials Today: Proceedings*: **18**, (2019), 4330.
14. Rajat Ramteke, Kalpana Kumari, Soumalya Bhattacharya, **M. R. Rahman**, “*Synthesis and characterization of zinc oxide incorporated iron borate glass-ceramic*”, *Journal of Alloys and Compound*: **811**, (2019), 151876. (**Impact Factor: 3.778**)
13. Sandeep Singh Chauhan, Deepak Kumar, Poornendu Chaturvedi, and **M. R. Rahman**, *Highly Sensitive and Stable NO₂ Gas Sensors Based on Random and Aligned Networks of SWCNTs*, *IEEE Sensors Journal*: **19** (2019), 11775. (**Impact Factor: 3.076**)

12. 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: 1.151**)
11. Sunil Meti, Sagar Prutvi Hosangadi, **M. R. Rahman**, Udaya K. Bhat, *A single step unique microstructural growth of porous colossal dielectric constant titanium oxide*, **Applied Physics A: 125**, (2019):188 (**Impact factor:1.604**)
10. Sunil Mathi, **M. R. Rahman**, Imteyaz Ahmad, 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: 3.38**)
9. Hosangadi Prutvi Sagar, Vignesh Mahalingam, Debiprosad Roy Mahapatra, A, Gopalkrishna Hegde, Sathyanarayana Hanagud, **Mohammad Rizwanur Rahman**, *Transient dynamic distributed strain sensing using photonic crystal waveguides*, **Applied Optics, 56**, (2017), 7877-7885. (**Impact Factor: 1.65**)
8. Brahmanandam Javvaji, Bhamy Maithry Shenoy, D Roy Mahapatra, Abhilash R, G M Hegde, **M R Rizwan**, *Stable Configurations of Graphene on Silicon*, **Applied Surface science 414**, (2017) 25-33. (**Impact Factor: 3.38**)
7. Sunil Meti, Udaya Bhat K., **Rahman M. R.**, Jayalakshmi M.: *Photocatalytic Behaviour of Nanocomposites of Sputtered Titanium Oxide Film on Graphene Oxide Nanosheets*, **American Journal of Materials Science, 5** (2015) 12.
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 $S = \frac{1}{2}$ antiferromagnet $PbCuTe_2O_6$* , Phys. Rev. B **90** (2014), 035141. Cited 17 (**Impact Factor: 3.38**)
5. **M. R. Rahman**, B. Koteswararao, S. H. Huang, Kee Hoon Kim, and F. C. Chou: *Diluted magnetism in Mn-doped $SrZnO_2$ single crystal*, Journal of Applied Physics **114** (2013), 123903. (**Impact Factor: 2.068**)
4. T. Itahashi, H. Hayashi, **M. R. Rahman**, K. M. Itoh, L. S. Vlasenko, M. P. Vlasenko, and D. S. Poloskin: *Optical and dynamic nuclear polarization of ^{29}Si nuclei via photo excited triplet states of radiation defects in isotopically controlled silicon* Phys. Rev. B **87** (2013), 075201. Cited 2 **Impact Factor: 3.38**
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 ^{28}Si isotope enriched silicon*, Solid State communication **150** (2010), 2275. Cited : 2
2. **M. R. Rahman**, T. Itahashi, M. P. Vlasenko, L. S. Vlasenko, E. E. Haller, and K. M. Itoh: *Dynamic nuclear polarization of ^{29}Si nuclei induced by Li and Li-O centers in silicon*, Japanese Journal of Applied Physics **49** (2010), 103001. Total Citation: 7
1. **M. R. Rahman**, L.S. Vlasenko, E.E. Haller and K.M. Itoh: *Electron Paramagnetic Resonance and*

Dynamic Nuclear Polarization of ^{29}Si Nuclei in Lithium-Doped Silicon; Physica B **404** (2009), 5060).

Conference Proceedings

7. Mohanraj G T, Krishneindu P, R. P. Choudhary, Sher Singh Meena, S. M. Yusuf, M. R. Rahman Mineralogical Studies of Low Grade Iron Ore from Bellary-Hospet Region, India, ICMSS 2018, surya engineering college, erode (Tamil Nadu) Publish in AIP conf. Proc. **2087**, 020012 (2019);
6. **M. R. Rahman**, B. Koteswararao, Ammu Priya, F. C. Chou: *Magnetic Properties of Polycrystalline sample of Mn doped SrZnO₂*; **International Conference on Advances in Manufacturing and Materials Engineering (AMME 2014) March 27–29 2014 Mangalore, India. (Conference Proceeding)**
5. Abhilash R, Brahmanandam Javvaji, B. M. Shenoy, **M. R. Rahman**, D. Roy Mahapatra, G. M. Hegde: *Electronic band structure and Photonemission Spectra of Graphene on Silicon*; Physics and Simulation of Optoelectronic Devices XXII; 89801B (2014) Proceedings Volume 8980, doi.org/10.1117/12.2042576 **SPIE Photonics West Feb. 1–6 2014 San Francisco USA. (Conference Proceeding)**
4. Brahmanandam. lasenk Javvaji, Abhilash R, B.M. Shenoy, **M. Rizwan Rahman**, D. Roy Mahapatra, G.M Hegde: *Optoelectronic properties of graphene silicon nano-texture*; 2014 IEEE 2nd International Conference on Emerging Electronics: Materials to Devices, ICEE 2014 - Conference Proceedings Indian Institute of Science Bengaluru; India; 3-6 Dec. 2014 (Abstract)
3. **M. R. Rahman**, L. S. Vlasenko, E. E. Haller, and K. M. Itoh: *Electron Paramagnetic Resonance and Dynamic Nuclear Polarization of ^{29}Si Nuclei in Li–O donor*; **6th International Conference on Physics and Applications of Spin-related Phenomena in Semiconductors, 1–4 Aug. 2010 Tokyo, Japan. (Abstract).**
2. **M. R. Rahman**, L. S. Vlasenko, E. E. Haller, and K. M. Itoh: *Dynamic nuclei polarization of ^{29}Si nuclei using Lithium donor electron*; **14th domestic conference on Physics and Applications of Spin-related Phenomena in Semiconductors, 21–22 Dec. 2009 Yokohama, Japan. (Abstract).**
1. V. Vikram, **Md. Rizwanur Rahman**, and Monica Katiyar: *Giant magnetoresistance in Ni/Cu multilayers fabricated by electron–beam evaporation*; **International conference on magnetic material 11th–16th Dec. 2007 Kolkata, India. (AIP conf. Proc. 1003 (2008), 37) (Conference Proceeding).**

Participation in Department Activities:

- 1) **3rd Semester B. Tech Faculty Advisor**
- 2) **Department Website Administer 2015-2018**
- 3) **Treasure of Indian Institute of Metal Surathkal Chapter Oct. 2015- till date**

Other Activities

- Co –convener of Workshop on “**Selected Topic in Materials Engineering**” from 22nd Jan 2014 to 24th Jan 2014 at Department of Metallurgical and Materials Engineering **National Institute of Technology Karnataka.**
- Convener of 2 days Workshop on “**Mineral Beneficiation**” from 20th -21st Feb 2017 at

Department of Metallurgical and Materials Engineering **National Institute of Technology Karnataka.**

- Convener of 5 days workshop on “**Advanced Materials Characterization Techniques**” from 7-11 August 2019 at Department of Metallurgical and Materials Engineering **National Institute of Technology Karnataka**