

CURRICULUM VITAE

Dr. Hilal Ahmad Reshi
Ph. D. Physics (EMI Shielding), Barkatullah University- Bhopal, INDIA
e-mail: hilal.phy@gmail.com
Cell: +91-7889611855
Assistant Professor (Contract) Department of Physics,
Govt. JKIMS, Amar Singh College Srinagar J&K-190008 (INDIA)



Objective: Passion to motivate, inspire and to positively impact my students in a way that will encourage lifelong learning.

Present Research Work

Present focus is on the development of nanocomposites to study their multifunctional properties especially EMI shielding (RAMs). Recently published one paper in **J. Appl. Phys.**, the other one is ready to be communicated in **J. Mater. Chem. C**.

Education

- 1 **Ph.D. Physics.**: entitled “**Nanomaterials and thin film synthesis of oxide compounds for radiation shielding applications**” from Novel Materials Research Laboratory, Department of Physics, Barkatullah University, Bhopal- INDIA (**awarded on 16th Feb,2016.**)
- 2 **One year Diploma** in Computer Applications
- 3 **B.Ed.** From Kashmir University (2010).
- 4 **M. Phil Physics:** entitled “**Synthesis of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ material for electromagnetic radiation shielding applications**” jointly from (CSIR-AMPRI) & Barkatullah University, Bhopal, India (**2007-08**).
- 5 **M.Sc. Physic** from Barkatullah University, Bhopal-India (2005-07).
- 6 **B.Sc.** from University of Kashmir-India (Physics, Mathematics, Electronics, English) (2002-05).

Research Experience

- **Post Doctoral Fellow (2017)** at **IIT-Bombay**, Mumbai, Maharashtra, India, with the project work entitled “**National Center for photovoltaic research and education (NCPRE) Phase-II**”. Achieved very good results of $\text{CH}_3\text{NH}_3\text{PbI}_3$ and $\text{CS}_2\text{AgBiI}_6$ single crystal perovskite. Published book chapter to highlight the challenging issues for stable power conversion efficiency.
- **Senior Research Fellow (2014-2016)** University Grants Commission, New Delhi, India (awarded during Ph.D.)

- **Junior Research Fellow (2012- 2014)** University Grants Commission, New Delhi, India (awarded during Ph.D.)
- **Research Project Fellow (2011-2012)** MPCST, Bhopal India

Teaching Experience

- **Assistant Professor Contract based (2018-Till Date)** Department of Higher Education Govt. of Jammu and Kashmir, India. Teaching the UG/PG courses of **Thermal Physics/Solid state Physics/Mechanics/wave Optics/Electrodynamics** including Lab work. During the tenure, prepared a detailed project on XRD setup and will be submitted to DST-Govt. of India for funding process.

Broader research area in PhD

To examine various multifunctional device and EMI shielding applications, we developed Nanomaterials/thin films of ABO₃ perovskite nanostructures. 30% MR at 50K under 500 m-tesla was observed as a promising feature in LSMO. 20 dB of shielding effectiveness with 97% radiation attenuation was also obtained in LSMO. Ended the single phase uncertainty in BFO nanoparticle and the data is now available in JCPDS (ICDD) for phase confirmation. Reported Multiferroic BiFeO₃ compound and its composite with other 2D materials can be a potential candidate for EMI shielding. Various techniques were used such as XRD, SEM, TEM, RAMAN, XPS, VSM, SQUID, Four-Probe, VNA etc. Present focus is the composite of perovskite nanostructures to study their device and EMI shielding applications.

Technical Proficiency

Expertise in

- Single crystal growth by solvent engineering technique.
- Synthesis and characterization of Nanomaterials of variable size and structures.
- Synthesis and characterization of multifunctional nanocomposites based on mixed valence manganites, multiferroics and graphene nanostructures.
- Solution based sol-gel chemistry route, hydrothermal/Solvo-thermal synthesis, Solid State reaction and matrix methods.
- Thin film synthesis by spin coating technique.
- Analysis via Vector Network Analyzer/XRD/SEM/TEM/SQUID/VSM/ Four Probe Resistivity/ etc
- Working knowledge of Software like FULLPROF/Origin/MS-Office/XPS/Powder-X/Vesta/Photoshop etc.

LIST OF PUBLICATIONS

<https://scholar.google.com/citations?user=LOMYFcQAAAAAJ&hl=en>

Research papers in international journals

1. “*Kondo-Like Electronic transport and effective Electromagnetic interference shielding (EMI) in nanostructured $La_{0.7}Ca_{0.3}MnO_3$ compounds*”. **J. Mater. Chem. C** (prepared for submission) (Impact Factor = **8.067**)
2. “*Enhanced electromagnetic interference (EMI) shielding in $BiFeO_3$ -graphene oxide nanocomposites over X-band frequency region*”. **Hilal Ahmad Reshi**, S. Pillai, A. P. Singh, S. K. Dhawan, and V. Shelke, **J. Appl. Phys.**, **131**, 174101, 2022 (Impact Factor = **2.877**)
3. “*Stability of rhombohedral structure and improved dielectric and ferroelectric properties of the $(1-x) BiFeO_3 - (x) Ba_{1/2}Na_{1/2}TiO_3$ system*”. Subhash Sharma, **Hilal Ahmad Reshi**, J. M. Siqueiros; Oscar Raymond Herrera, **Ceram Int.**, **48**, 1805, 2022 (Impact Factor = **5.532**) (Citations = 4)
4. “*Nanostructured $La_{0.7}Sr_{0.3}MnO_3$ compound for effective Electromagnetic Interference shielding over wide frequency range*” **Hilal Ahmad Reshi**, Avanish P Singh, Shreeja Pillai, Rama Shanker Yadav, S. K. Dhawan and Vilas Shelke, **J. Mater. Chem. C**, **3**, 820, 2015 (Impact Factor = **8.067**) (Citations = 50)
5. “*CdZnO coated film: A material for photovoltaic applications*” Rayees Ahmad Zargar, Muzzammil Ahmad Bhat, **Hilal Ahmad Reshi**, S. D. Khan, **Results Phys.**, **9**, 1673, 2018, (Impact Factor = **4.476**) (Citations = 09)
6. “*X-band frequency response and Electromagnetic Interference (EMI) shielding in multiferroic $BiFeO_3$ nanomaterials*” **Hilal Ahmad Reshi**, Avanish Pratap Singh, Shreeja Pillai, Touseef Ahmad Para, S. K. Dhawan, and Vilas Shelke. **Appl. Phys. Lett.**, **109**, 142904, 2016 (Impact Factor = **3.971**) (Citations = 19)
7. “*Enhanced magnetization in morphologically and magnetically distinct $BiFeO_3$ and $La_{0.7}Sr_{0.3}MnO_3$ composites*” Shreeja Pillai, **Hilal Ahmad Reshi**, Vilas Shelke. **J. Appl. Phys.**, **122**, 104101, 2017 (Impact Factor = **2.877**) (Citations = 13)
8. “*Enhanced magnetization in multiferroic $BiFeO_3$ through structural distortion and particle size reduction*”. Toshi Bhagwaiya, **Hilal Ahmad Reshi**, Poonam Khade, Shovit Bhattacharya, Vilas Shelke, **J. Magn. Magn. Mater.**, **483**, 59, 2019. (Impact Factor = **3.097**) (Citations = 09)
9. “*Kondo-like electric transport and ferromagnetic cluster-glass behavior in*

- La_{0.7}Sr_{0.3}MnO₃ nanostructures*” **Hilal Ahmad Reshi**, Shreeja Pillai, Rama Shanker Yadav, Touseef Ahmad Para, U. P. Deshpande, T. Shripathi, and Vilas Shelke., **RSC Adv.**, **5**, 85950, 2015 (Impact Factor = 4.036) (Citations = 13)
10. “*Ku-Band radiation shielding response of La_{0.7}Sr_{0.3}MnO₃ thin film*” **Hilal Ahmad Reshi**, Shreeja Pillai, Avanish Pratap Singh, Aijaz A. Wani, S. K. Dhawan, Vilas Shelke, **J. Nano_Electron Phys.**, 2021 (Impact Factor = 0.676) (Communicated)
 11. “*CdZnO Coated Thin Films: Application for Energy Conversion Devices*” R. A. Zargar, A. H. Shah, **Hilal Ahmad Reshi**, M. Arora, F. A. Mir, **J. Nano_Electron Phys.**, **11**, 01027, 2019. (Impact Factor = 0.676) (Citations = 01)
 12. “*Investigation on Gas Sensing Properties of Ag Doped BiFeO₃*” Toshi Bagwaiya, Poonam Khade, **Hilal Ahmad Reshi**, Shovit Bhattacharya, Vilas Shelke, Manmeet Kaur, A. K. Dednath, K. P. Muthe, S. C. Gadkari, **AIP Proc.**, **1942**, 080076, 2018. (Impact Factor = 0.4) (Citations = 03)
 13. “*Nanostructure induced metal-insulator transition and enhanced low field magnetoresistance in La_{0.7}Sr_{0.3}MnO₃ systems*”, **Hilal Ahmad Reshi**, Shreeja Pillai, Deepika Bhuwal, Vilas Shelke, **J. Nanosci. Nanotechnol.**, **13**, 4608, 2013 (Impact Factor = 1.354) (Citations = 14)
 14. “*Easy synthesis and electric, magneto-transport and magnetic properties of double perovskite La₂CoMnO₆ compound*” Rashmi Yadav, Touseef Ahmad Para, **Hilal Ahmad Reshi**, Shreeja Pillai, Vilas Shelke, **J. Mater. Sci. Mater. Electron.**, 28, 2970, (2016) (Impact Factor = 2.478) (Citations = 07)
 15. “*Grain size disposed structural, optical and polarization tuning in ZnO*” Touseef Ahmad Para, **Hilal Ahmad Reshi**, Shreeja Pillai, Vilas Shelke, **Appl. Phys. A**, **122**, 730, 2016 (Impact Factor = 2.983) (Citations = 13)
 16. “*Comparative study on multifunctional behavior of rare earth Manganites with micro and nano grain size*” **Hilal Ahmad Reshi**, Shreeja Pillai, Vilas Shelke, **J. Mater. Sci. Mater. Electron.**, **25**, 3795, (2014) (Impact Factor = 2.478) (Citations = 07)
 17. “*Synthesis of ZnSnO₃ nanostructure by sol gel method*” Touseef Ahmad Para, **Hilal Ahmad Reshi**, Vilas Shelke, **AIP Conf. Proc.**, **1731**, 050002, (2016) (Impact Factor = 0.4) (Citations = 13)
 18. “*Grain size induced metal-Insulator transition in La_{0.7}Sr_{0.3}MnO₃ compounds*”. **Hilal Ahmad Reshi**, Vilas Shelke, **J. Nano- Electron. Phys.**, **5**, 04053, (2013) (Impact Factor = 0.676) (Citations = 02)

Books/Book Chapters

1. *“Perovskite solar cells: The challenging issues for stable power conversion efficiency”*
Hilal Ahmad Reshi, Rayees Ahmad Zargar, Recent Development in optoelectronic devices, (2018) Intech Open, ISBN: 978-953-51-6203-2

Faculty Development Programs:

- a) Participated in one week faculty development program at IUST Awantipora, Kashmir from 14-21 Feb., 2019.
- b) Participated in Two day faculty development program at Govt. MAM College Jammu, on digital Literacy, from 12-13 May, 2022.

Paper presentations in International/National conferences

1. **Hilal Ahmad Reshi**, Aijaz A. Wani, AvWani, Avanish Pratap Singh, S. K. Dhawan, and V. Shelke, *EMI Shielding response of $La_{0.7}Sr_{0.3}MnO_3$ perovskite films over Ku-band region*. National Conference on Growth points in Physics (GPP-II), July 15th -17th, 2019., Department of Physics, University of Kashmir, Srinagar, J & K, India.
2. Rama Shanker Yadav, **Hilal Ahmad Reshi**, Shreeja Pillai, and Vilas Shelke *“Modulation of magnetic interaction in Bismuth ferrite through strain and spin cycloid engineering”* The International Conference on Micro-and Nano-Electronics 2016, October 3-7, 2016 "Ershovo" resort in Zvenigorod, Moscow Region, Russia.
3. **Hilal Ahmad Reshi** and Vilas Shelke *“LSMO nanostructures: Synthesis, structural, and EMI shielding studies”* 102nd Indian Science Congress (ISCA-2015), January 3-7, 2015. University of Mumbai, Mumbai, Maharashtra, India.
4. **Hilal Ahmad Reshi** Vilas Shelke, Ramashanker Yadav, Avanish Pratap Singh, and S. K. Dhawan *“Investigation of dielectric and microwave absorption properties of $La_{0.7}Sr_{0.3}MnO_3$ nanoparticles”*. International conference on nano science and engineering applications (**ICONSEA-2014**), June 26-28, 2014. Centre for nano science and technology, institute of science and technology, **JNTU campus, Kokatpally, Hyderabad (A. P.) INDIA.**
5. Vilas Shelke, **Hilal Ahmad Reshi**, Shreeja Pillai, Deepika Tripathi, Rashmi Yadav, and Rama Yadav *“The implications of finite size effect on magnetic behavior of rare earth manganite and bismuth ferrite compounds”*. Third International conference on multifunctional, hybrid and nanomaterials, 03-07 March, 2013, **Sorrento (Near Naples), Italy.**
6. **Hilal Ahmad Reshi** and Vilas Shelke *“Grain Size induced metal-Insulator transition in*

- La_{0.7}Sr_{0.3}MnO₃ compounds*". **ISSMD-2**, Department of Physics and Electronics, **University of Jammu, Jammu and Kashmir, INDIA**, Jan. 31st to Feb. 02nd 2013.
7. **Hilal Ahmad Reshi**, Shreeja Pillai, Deepika Bhuwal, Rashmi Yadav, Vilas Shelke "*Broad metal-insulator transition and low field magnetoresistance in La_{0.7}Sr_{0.3}MnO₃ nanomaterials*". **Proceedings of the DAE-BRNS fourth interdisciplinary symposium on materials chemistry**, Dec. 11-15, 2012.
 8. **Hilal Ahmad Reshi** "**Nanomaterials synthesis of Lanthanum Manganite Compound for memory device applications**" 27th M. P. Young Science Congress held in Madhya Pradesh Council of Science and Technology, (Bhopal Madhya Pradesh) from 28 – 29 Feb., 2012.
 9. **Hilal Ahmad Reshi**, Shreeja Pillai, Vilas Shelke "*Grain size induced metal-insulator transition and wide range magnetoresistance in LSMO compound*" **4th Bangalore Nano**, Bangalore INDIA, Dec. 8-9, (2011).

Participation in Workshop/Symposiums

10. Participated in the author workshop entitled "**How to write and publish scientific articles and manuscripts**" organized jointly by IUST and Springer Nature at IUST, Awantipora Kashmir-192122 on 15th Dec., 2017.
11. Participated on author workshop entitled "**Scholarly writing & Intellectual ethics**" jointly organized by IUST and Elsevier at IUST, Awantipora Kashmir-192122 on 26th Oct., 2017.
12. Participated in the workshop entitled "**Scientific/Research paper writing**" organized by National Academy of Sciences (NASI) held at Central Institute of Fisheries Education (CIFE), Mumbai, Maharashtra from 08- 10 June, 2012.
13. Participated in "**4th Science conclave: A congregation of Nobel Laureates**" held in IIT Allahabad from Nov. 26-Dec. 02, 2011.
14. Attended a workshop on "**Cell Tower/Cell Phone Radiation Hazards and Solutions**" held in VMCC, IIT Bombay in Nov. 20, 2011.
15. **Hilal Ahmad Reshi** "**Nano Sensor and its applications**" organized by MPCST held at Globus College of Engineering, Bhopal, Madhya Pradesh (INDIA) from March 15-16, 2012.

Ph.D. Supervisor

Dr. Vilas Shelke, *Novel Materials Research Laboratory, Department of Physics, Barkatullah University, Bhopal 462026 (INDIA) Email: drshelke@gmail.com*

Contact No's Mob: +91-9407547879 Landline: +91-755-2677722

<https://scholar.google.com/citations?hl=en&user=3iA8qecAAAAJ>

Personal Details:

Name: Hilal Ahmad Reshi

Father's Name: Gulam Nabi Reshi

Permanent Address: Lirow, Kulgam, Jammu and Kashmir-India-192231

DOB: 09th Feb, 1983

Status: Married

Nationality: Indian

Languages Known: English, Urdu, Kashmiri, Hindi