

## CURRICULUM VITAE

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Dr. Hilal Ahmad Reshi  
Ph. D. Physics (EMI Shielding), Barkatullah University- Bhopal, INDIA  
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*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 16<sup>th</sup> Feb,2016.**)
- 2 **B.Ed.** From Kashmir University with 75% marks (2010).
- 3 **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 with 62% marks. (**2007-08**)
- 4 **M.Sc. Physic** from Barkatullah University, Bhopal-India with 60% marks (2005-07)
- 5 **B.Sc.** from University of Kashmir-India with 53% Marks (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 ABO<sub>3</sub> 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 BiFeO<sub>3</sub> 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=LOMYFcQAAAAJ&hl=en>

### **Research papers in international journals**

1. ***“Kondo-Like Electronic transport and effective Electromagnetic interference shielding (EMI) in nanostructured La<sub>0.7</sub>Ca<sub>0.3</sub>MnO<sub>3</sub> compounds”***. **J. Mater. Chem. C** (prepared for

submission) (Impact Factor =7.393)

2. “Enhanced electromagnetic interference (EMI) shielding in BiFeO<sub>3</sub>-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 = 2.546)
3. “Stability of rhombohedral structure and improved dielectric and ferroelectric properties of the (1-x) BiFeO<sub>3</sub> – (x) Ba<sub>1/2</sub>Na<sub>1/2</sub>TiO<sub>3</sub> system”. Subhash Sharma, Hilal Ahmad Reshi, J. M. Siqueiros; Oscar Raymond Herrera, **Ceram Int.**, **48**, 1805, 2022 (Impact Factor = 4.527) (Citations = 4)
4. “Nanostructured La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> 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 = 7.393) (Citations = 44)
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<sub>3</sub> 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 = 3.791) (Citations = 19)
7. “Enhanced magnetization in morphologically and magnetically distinct BiFeO<sub>3</sub> and La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> composites” Shreeja Pillai, Hilal Ahmad Reshi, Vilas Shelke. **J. Appl. Phys**, **122**, 104101, 2017 (Impact Factor = 2.546) (Citations = 13)
8. “Enhanced magnetization in multiferroic BiFeO<sub>3</sub> 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 = 2.993) (Citations = 09)
9. “Kondo-like electric transport and ferromagnetic cluster-glass behavior in La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> 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 = 3.361) (Citations = 13)
10. “Ku-Band radiation shielding response of La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> 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<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> 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 La<sub>2</sub>CoMnO<sub>6</sub> 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 = **2.584**) (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 ZnSnO<sub>3</sub> 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<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> 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 15<sup>th</sup> -17<sup>th</sup>, 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*” 102<sup>nd</sup> 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  $La_{0.7}Sr_{0.3}MnO_3$  compounds*”. **ISSMD-2**, Department of Physics and Electronics, **University of Jammu, Jammu and Kashmir, INDIA**, Jan. 31<sup>st</sup> to Feb. 02<sup>nd</sup> 2013.
7. **Hilal Ahmad Reshi**, Shreeja Pillai, Deepika Bhuwal, Rashmi Yadav, Vilas Shelke “*Broad metal-insulator transition and low field magnetoresistance in  $La_{0.7}Sr_{0.3}MnO_3$  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”** 27<sup>th</sup> 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*” 4<sup>th</sup> **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 15<sup>th</sup> Dec., 2017.
11. Participated on author workshop entitled “**Scholarly writing & Intellectual ethics**” jointly organized by IUST and Elsevier at IUST, Awantipora Kashmir-192122 on 26<sup>th</sup> 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- 10June, 2012.
13. Participated in “**4<sup>th</sup> 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**

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### **Personal Details:**

Name: Hilal Ahmad Reshi

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DOB: 09<sup>th</sup> Feb, 1983

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Nationality: Indian

Languages Known: English, Urdu, Kashmiri, Hindi