

<b>Dr. RAJIM ALI MONDAL</b>	Department of Physics Hindustan University Chennai 603103, India. Phone: +91 9094947644 Email id: <a href="mailto:rajimam@hindustanuniv.ac.in">rajimam@hindustanuniv.ac.in</a> <a href="mailto:rajimmondal.phys@gmail.com">rajimmondal.phys@gmail.com</a>	
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### Personal details

<b>Date of Birth</b>	: 07-01-1984
<b>Gender</b>	: Male
<b>Marital status</b>	: Married
<b>Citizenship</b>	: Indian
<b>Language known</b>	: English, Hindi, Bengali

### Education

PhD	Indian Institute of Technology Madras	2015	Experimental Condensed Matter Physics
M.Sc	Indian School of Mines University (IIT Dhanbad)	2006-2008	Applied Physics
B.Sc.	University of Calcutta	2003-06	Physics (Hons.)

### Publications

1. S.V. Vijayasundaram, G. Suresh, **R.A. Mondal**, R. Kanagadurai, Composition-driven enhanced magnetic properties and magnetoelectric coupling in Gd substituted BiFeO<sub>3</sub> nanoparticles, *J. Magn. Magn. Mater.* (Accepted for publication)
2. S.V. Vijayasundaram, G. Suresh, **R.A. Mondal**, R. Kanagadurai, Substitution-driven enhanced magnetic and ferroelectric properties of BiFeO<sub>3</sub> nanoparticles, *J. Alloys Comp.*, 658:726 (2016).
3. Abhishek Majumder, Kodam Ugendar, Anoop Baby K. B., Venkatarao Chunchu, **R. A. Mondal** and G. Markandeyulu, Anisotropy, Magnetostriction and Converse Magnetoelectric effect in Dy substituted Ni Ferrite, *Physics Procedia* 75:238 (2015).
4. **R.A. Mondal**, B.S. Murty, V.R.K. Murthy, Dielectric, magnetic and enhanced magnetoelectric response in high energy ball milling assisted BST-NZF particulate composite, *Mater. Chem. Phys.* **167**, 338 (2015).

5. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Origin of magnetocapacitance in chemically homogeneous and inhomogeneous ferrites, *Phys. Chem. Chem. Phys.* 17, 2432 (2015).
6. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Grain size dependent phase transition and superparaelectric behavior of ferroelectric BST, *Phys. B: Condensed Matter* 461, 10 (2015).
7. R. Ramchandra Kiran, **R.A. Mondal**, Venkatarao Chunchu, Magnetolectric and inverse magnetolectric effect in  $\text{Co}_{1.2}\text{Fe}_{1.7}\text{Nb}_{0.1}\text{O}_4$ , *International Journal of Engineering Technology, Management and Applied Sciences* 5, 547 (2015).
8. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Temperature and frequency dependent electrical properties of NiCuZn ferrite with CuO-rich grain boundary segregation, *J. Alloys Comp.* 595, 206 (2014).
9. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Maxwell-Wagner polarization in grain boundary segregated NiCuZn ferrite, *Curr. Appl. Phys.* 14, 1727 (2014).
10. R. Ramchandra Kiran, **R.A. Mondal**, Sandhya Dwevedi, G. Markandeyulu, Structural, magnetic and magnetolectric properties of Nb substituted Cobalt Ferrite, *J. Alloys Comp.* 610, 517 (2014).

### **Conferences and Workshop**

1. **R.A. Mondal**, V.R.K. Murthy and B.S. Murty, Effect of Cu substitution on dielectric and magnetic properties of NiZn ferrite, *International conference on recent trends in advance materials (ICRAM), 2012, Vellore.*
2. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Impedance spectra of NiCuZn ferrite with grain boundary segregation, *International Symposium for Research Scholars (ISRS), IIT Madras 2012, Chennai.*
3. **R.A. Mondal**, B.S. Murty and V.R.K. Murthy, Superparaelectric behavior in ferroelectric  $\text{Ba}_{0.9}\text{Sr}_{0.1}\text{TiO}_3$ , *International Symposium for Research Scholars (ISRS), IIT Madras 2014, Chennai.*
4. S. V. Vijayasundaram, Govindarajan, Suresh, **Rajim Ali Mondal**, R. Kanagadurai, Rare-earth Gd Substituent Driven Tuned Ferromagnetism and Enhanced Magnetolectric coupling in BiFeO<sub>3</sub> Nanoparticles, *International Conference on Magnetic Materials and Applications (ICMAGMA 2015) VIT Vellore, India.*
5. Atom Probe Tomography (IIT Madras).

## **Achievements and Awards under National/International level**

- Gate qualification, 2009, Percentile 93.17, All India Rank 365.
- NET qualification (UGC), June, 2011, All India Rank 299.
- Best paper Award, International Symposium for Research Scholars on Metallurgy, Materials Science & Engg. (ISRS), 2012, IIT Madras, Chennai.
- IIT Madras Research Award, 2015.

## **Research Work**

**Name of Research Supervisors:** Prof. V.R.K. Murthy (Department of Physics, IIT Madras) and Prof. B.S. Murty (Department of MME, IIT Madras).

**Title of Thesis:** Enhanced magnetoelectric and multifunctional properties of ferroelectric–soft ferrite multiferroic nanocomposites.

## **Major Skills**

### **Synthesis skills:**

- Solid-state reaction
- Single mode and multimode microwave sintering
- Spark plasma Sintering
- High energy ball milling
- Simoloyer Milling

### **Characterization skills:**

- X-ray diffractometer (XRD)
- Magnetostriction and piezoelectric coefficient
- LCR impedance analysis
- Transmission Electron Microscopy
- Polarization (P) and Electric field (E) response
- Magnetoelectric (ME) coefficient measurement
- Resistivity measurement
- Electrical and magnetic poling
- X-ray diffraction (Rietveld Refinement – GSAS with EXPGUI)
- Raman Spectroscopy
- Scanning Electron Microscopy
- Atomic force Microscopy

## **Instruments handled**

- Microwave test benches
- Microwave furnaces (Single-mode and Multi-mode)

- High temperature electrical furnaces (Nabertherm, Eurotherm, Indfur)
- PANalytical X'Pert Pro. X ray Diffractometer
- Fritsch P-5 High Energy Planetary Ball Mills
- AB135-S density meters
- P-E Loop tracer
- ME (Magnetolectric) set up
- $d_{33}$  meter
- Poling unit
- N4L and Hioki LCR meter
- Spark Plasma Sintering unit
- Particle size analyzer

#### **Areas of interest**

- Dielectrics and ferroelectrics
- Magnetic materials
- Multiferroics and functional properties.
- Materials for Energy applications.

### **Work Experience**

**Lab Teaching Assistant (July, 2009-July, 2014):** Engineering Physics Lab, Department of Physics, Indian Institute of Technology, Madras. (Taught and supervised lab sections at BTech and MSc level).

**Project Associate (Sept, 2014-March, 2015):** Development of nanocrystalline PZT (ARDE sponsored), Department of Metallurgical and Materials Engineering, IIT Madras.

**Faculty (March, 2015-May, 2015):** Department of Applied Physics at Indian Maritime University (Central University, Govt. of India), Mumbai Campus.

**Assistant Professor, Selection Grade (June, 2015-Present):** Department of Physics, Hindustan University, Chennai, India.