Sudipta Bandyopadhyay **Associate Professor**

Personal Information:

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Date of Birth: 18th August, 1971 **Gender:** Male

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Academic and Professional Information:

Education: 1. Ph.D., Indian Association for the Cultivation of Science (IACS), Kolkata, INDIA, March 1997- August 2002; Degree awarded by Jadavpur University, Kolkata, India.

2. M.Sc. (Physics), University of Calcutta, Kolkata, INDIA, October 1994-December 1996.

3. B.Sc. (Physics), Moulana Azad College (under University of Calcutta) Kolkata, INDIA, September 1990-August 1994.

Appointments: 1. Lecturer, Vidyasagar College, INDIA [August 2002-January 2006];

2. Assistant Professor, University of Calcutta, INDIA [January 2006 – August 2014];

3. Associate Professor, University of Calcutta, INDIA [August 2014- till date]

Teaching (Masters Level in Physics)**:**

General Paper: At Present: i. Quantum Mechanics, ii. Classical Mechanics,

In the Past: i. Atomic Physics, ii. Electrodynamics;

Advanced Paper: Quantum Electronics.

Information about Research:

Research area: Materials Science

Current Research Interest: Rare earth metal based Metamagnetic Cuprate Francisite Compounds, Magneto-electric Materials, Dilute Magnetic Semiconductor, Thermoelectric Materials

Research Expertise: Expertise has been achieved in synthesis and characterization of complex magnetic, magneto-electric and thermoelectric compounds. Synthesis made in the form of nanoparticle powders and nanostructured thin films by several sophisticated physical and chemical methods. Characterizations performed utilizing structural, electrical, thermoelectric, optical and magnetic properties measurement system from 2K-350K, particularly expertise generated in magnetic properties measurement via SQUID VSM (Quantum Design, US) in the form of measurement-analysis-interpretation for self and collaborators experiments and free consultancy service for experiments of many Chemists and Biologists.

Further several times measurements were performed in Synchrotron based X-ray Diffraction in ***Photon Factory, KEK, Japan*** and Indus-2, RRCAT, India and X-ray Absorption Fine Structure spectroscopy (XAFS) in ***Petra III, DESY, Germany***, ***Elettra Sincrotrone Trieste, Italy,*** Indus-2, RRCAT, India and many publications emerged from these measurements.

Recently (in November 2019) low temperature Neutron Diffraction measurement was carried at WISH beamline, ISIS, Rutherford Appleton Lab. (RAL), UK and same type experiments were performed several times in Dhruba reactor, BARC, India. A low temperature Neutron Diffraction proposal is successful (presently in awaiting status due to Pandemic situation globally, particularly in India & US) at Powder Beamline, HFIR, OakRidge National lab. (ORNL), US.

Research Collaborators

1. Prof. A.N. Vasiliev, Faculty of Physics, Moscow State University, Russia

2. Prof. Tanusri Saha Dasgupta, IACS, Kolkata, India,

3. Dr. S. M. Yusuf, Solid State Physics Division, BARC, Mumbai, India,

4. Dr. D. Bhattacharyya, Atomic and Molecular physics Division, BARC, India,

5. Dr. D. Kanjilal, IUAC, New Delhi, India,

6. Dr. Dipankar Das, UGC DAE CSR, Kolkata Centre, Kolkata, India

7. Dr. Souvik Chatterjee, UGC DAE CSR, Kolkata Centre, Kolkata, India,

8. Prof. Sugata Ray, IACS, Kolkata, India,

9. Dr. Aritra Banerjee, University of Calcutta, India.

PhD supervision: 5 **No. of Publication (Peer reviewed Journals): 85**

Association with Indian Institutes as Regular User of National Facilities:

1. IUAC, Delhi; 2. BARC, Mumbai; 3.RRCAT, Indore; 4.SINP, Kolkata; 5. SNBNCBS, Kolkata;

6. IACS, Kolkata; 7. UGC DAE CSR, Indore, Kolkata and Mumbai Centre

User of International Neutron and Synchrotron Facilities for proposals upon successful Peer Reviewing: 1. Elettra Sincrotrone Trieste, Italy, 2. Photon factory, KEK, Japan, 3. Petra III, Dessy, Germany ; 4. ISIS, Rutherford Appleton Laboratory, UK, OakRidge National Laboratory, US (awaiting).

Successful completion of National Project as PI: 1. DST, Delhi; 2. IUAC, New Delhi; 3. UGC DAE CSR, Kolkata Centre and 4. UGC DAE CSR, Mumbai Centre.

Book Chapter: Ion beam Induced Modification of ZnO based Dilute Magnetic Semiconductor, S. K. Neogi, A. Banerjee and **S. Bandyopadhyay**, Chapter VI, Radiation Synthesis of Materials and Compounds, ***Taylor and Francis (CRC Press)*** 113- 146, (2013).

Selected Publications:

1.Enhanced ferromagnetism by ion irradiation for substitutionally cobalt doped ZnO films, S. K. Neogi, Md. A. Ahmed, A. Banerjee, **S. Bandyopadhyay**, **Applied Surface Science**, 481(2019) 443-453.

2. Evolution of phonon anharmonicity in Se-doped Sb2Te3 thermoelectrics, Diptasikha Das, Subarna Das, P. Singha, K. Malik, A. K. Deb, A. Bhattacharyya, V. A. Kulbachinskii, Raktima Basu, Sandip Dhara, **S. Bandyopadhyay** and Aritra Banerjee, **Phys. Rev. B**96, 064116 (2017).

3. Cationic order versus La-O covalency in LaA(Ca,Ba)$VMoO_6$ double perovskites, Abhisek Bandyopadhyay, Swarup Kumar Neogi, Atanu Paul, Carlo Meneghini, Indra Dasgupta, **Sudipta Bandyopadhyay**, and Sugata Ray, **Phys. Rev. B** 95024432 (2017).

4. Magnetic, resonance, and optical properties of Cu3Sm(SeO3)2O2Cl: A rare-earth francisite compound, K. V. Zakharov, E. A. Zvereva, M. M. Markina, M. I. Stratan, E. S. Kuznetsova, S. F. Dunaev ,P. S. Berdonosov, V. A. Dolgikh, A. V. Olenev, S. A. Klimin, L. S. Mazaev, M. A. Kashchenko, Md. A. Ahmed, A. Banerjee, **S. Bandyopadhyay**, A. Iqbal, B. Rahaman, T. Saha-Dasgupta and A. N. Vasiliev, **Phys. Rev. B94, 054401 (2016).**

5. Correlation between Magnetic and Micro-structural Properties of Low Energy Ion Irradiated and un-irradiated Zn0.95Mn0.05O Films**,** N. Midya, S. K. Neogi, Md. A. Ahmed, A. Banerjee, Pravin Kumar, D. Kanjilal, **S. Bandyopadhyay**, **RSC Advances 7 771 (2017).**

6. Temperature-dependent structural property and power factor of n type thermoelectric $Bi_{0.90}Sb_{0.10}$ and $Bi_{0.86}Sb_{0.14}$ alloys, K. Malik, Diptasikha Das, **S. Bandyopadhyay**, P. Mandal, A. K. Deb, Velaga Srihari andAritra Banerjee, **Appl. Phys. Lett.** 103 242108 (2013).

7. Modification of structural and magnetic properties of $Zn_{0.96}$ $Mn_{0.04}O$ samples by Li^{3+} ion irradiation, S. K. Neogi, S. Chattapadhyay, R. Karmakar, Aritra Banerjee, **S. Bandyopadhyay** and A Banerjee, ***Journal of Alloys Compounds***, 573 76-82 (**2013**).

8. Structural, Morphological, Optical and Magnetic Properties of Mn Doped Ferromagnetic ZnO Thin Film, R. Karmakar, S. K. Neogi, Aritra Banerjee and **S. Bandyopadhyay**, ***Appl. Surf. Sci.*** 263 671-677 (2012).

9. Effects of Co Doping on Structural, Morphological and Transport Properties of Sol-gel AZO Thin Films S. K. Neogi, R. Ghosh, G. K. Paul, S. K. Bera, **S. Bandyopadhyay**, ***Journal of Alloys and Compounds*** 487 269-273 (2009).

10. Study of structural and electrical properties of grain boundary modified ZnO films prepared by sol gel technique; **S Bandyopadhyay**, G K Paul, R Roy, S K Sen, S Sen, **Materials Chem. and Phys.** 74, 83 (2002).

11. Study of optical properties of some sol-gel derived films of ZnO; **S Bandyopadhyay**, G K Paul, S K Sen, ***Solar Energy Materials & Solar Cells*** 71, 103 (2001).

12. Measurement and modeling of the barrier heights and ideality factors in the metal/conducting polymer composite Schottky device, **S Bandyopadhyay**, A Bhattacharya and S K Sen, ***J. Appl. Physics*** 85, 3671 (1999).

Complete list of publication available in the Google scholar with following web Link:
https://scholar.google.co.in/citations?user=2FcC58EAAAAJ&hl=en