

Dr. AMITAVA GHORAI



Designation: W. B. E. S. / Associated Professor of Physics

About Me:

Amitava Ghorai received scholarship from Midnapore District Primary Board in Class IV Board Examination, 1968 and it was continued for next two years of study. He passed Higher Secondary (HS) examination (1976) from Midnapore Collegiate School, B. Sc. Examination (1979) of University of Calcutta from Midnapur College and M. Sc. Examination (1981) at Rajabazar Science College, Calcutta University. He received National Scholarship after passing HS Examination conducted by West Bengal Board of Secondary Education with rank 107th from Department of Higher Education, Government of West Bengal and it was continued during two-year M. Sc. with rank 63rd. The result of M. Sc. was published in January, 1983.

Experience / Expertise:

Amitava Ghorai joined West Bengal Educational Service (W. B. E. S.) as Lecturer in Physics at Acharya B. N. Seal College, Cooch Behar-736101 on 29.02.1988. After about four and half years he was transferred to Maulana Azad College (Govt.), Kolkata-13 and promoted as Assistant Professor of Physics. He was transferred to Jhargram Raj College (Govt.) Jhargram-721507, Dist. West Midnapore, after about six and half years and subsequently elevated to the designation of Reader in Physics. He was again transferred to Chandernagore College, Chandernagore-712136 after about nearly eight years. After about six years he is posted as Associate Professor to Maulana Azad College, Kolkata-13 till date. During his service period he did one UGC sponsored Orientation Program in 1990 and two Refresher Courses in 2000 and 2001.

Qualifications:

Amitava Ghorai was admitted to Ph. D. (Science) degree from Jadavpur University on 09.08.1989 under supervision of Prof. S. K. Sen, Department of Materials Science, Indian Association for the Cultivation of Science (IACS), Jadavpur, Kolkata-700032. The title of the thesis was 'Study of point defects in solids and thin films'.

Specialisation & Area of Interests:

Amitava Ghorai started doctoral research work as Junior Research Fellow in the department of Materials Science, IACS, under supervision of Prof S. K. Sen. A vacuum Furnace with a temperature control of one degree was designed and set up. Measurements at liquid nitrogen temperature for lead based fast diffuser system was undertaken. Impurity diffusion by vacancy mechanism was tested experimentally using Resistometric Technique in bulk sample of Pb-Sn, which was chosen for its importance in microelectronic industry as solder. Also theoretical study of Point Defects like Vacancy and calculation of lattice relaxations around it was done by Lattice Statics Method and Atomistic Continual Model. After two years he was Senior Research Fellow (S.R.F.). Calculation of relaxation and vacancy formation energy using Lattice Statics Method and Atomistic Continual Model were continued by the extensive use of IRIS 80 computer at computer facility division, V. E. C. C., Kolkata. Thin film deposition of bimetallic couples, in situ conductivity measurements in the Vacuum Coating Unit and micro-structural changes by XRD, TEM, SEM were done in case of bimetallic Ag-Sn thin film sandwiches. A new formalism of computing defect energies

was undertaken using Pseudopotential Scheme and impurity diffusion by vacancy mechanism were theoretically investigated in metallic systems and their dilute alloys by extensive use of IRIS 80 computer, V. E. C. C., Kolkata.

Current Teaching:

Amitava Ghorai served different Government Colleges and taught all the Physics Honours and General syllabus under different University. Presently he is teaching Waves & Optics, Thermodynamics & Statistical Physics and Solid State Physics.

Research Interests:

Presently Amitava Ghorai is actively engaged in theoretical study of defect and diffusion properties of solids, especially dependence of formation energy of a vacancy in cubic metals using different model potentials, exchange and correlation functions and second order perturbation theory of quantum mechanics. Some pedagogic experimental project works with undergraduate students are also organized under DBT scheme. Also he is Ph. D. supervisor, Calcutta University.

Selected Publications:

<i>Books</i>	6 (Six)
<i>Papers</i>	32 (Thirty two)
<i>Posters</i>	26 (Twenty six)
<i>Other (Undergraduate Project/Thesis/Poster)</i>	19 (Nineteen).

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Professional Memberships and Activities:

A list of professional organisations of which you are a member and a note of particular roles and responsibilities that this might include

Other Information:

Amitava Ghorai is a Reviewer in Journals like Science domain International, Archives of current research international