Murshidabad University

FACULTY ACADEMIC PROFILE/ CV

Full name of the faculty member: **DR. ANIRBAN ROYCHOWDHURY**

Designation: **ASSISTANT PROFESSOR IN PHYSICS**

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Academic qualifications:

Sl. No.	College/University from which the degree was obtained	Abbreviation of the degree
1.	**Sripat Singh College, University of Kalyani**	**B.Sc. (Hons)**
2.	**Jadavpur University**	**M.Sc.**
3.	**Jadavpur University & UGC-DAE-CSR, Kolkata Centre**	**Ph.D.**

Positions held/ holding: Assistant Professor/ Guest Teacher

- Research interests:

Synthesis and Characterization of multifunctional magnetic-fluorescent nanocomposite materials and also, very much interested to investigate the multifunctional properties (e.g. magnetic, optical, structural, electrical, etc) of these nanomaterials by using the sophisticated tools (XRD, SQUID, Mössbauer, Positron annihilation, Raman, UV-PL, FTIR, SEM, HRTEM, etc).

Research guidance: NA

Projects: NA

Select list of publications (Only number):

a) Journals: International peer reviewed journal: 40
b) Books/ book chapters: 01
c) Conference/ seminar volumes: 10

Membership of Learned Societies: 01

Invited lectures delivered: 01

Awards:

- Stood 1st rank in B.Sc. (Hons.) in Sripat Singh College, K.U.
- CSIR-UGC NET JRF qualified in Physical Science.
- GATE qualified in Physics.
- Best presentation award in National Conference (***DAESSPS-2013***) held at Punjab, India.
- Best presentation award in International Conference (***PPC11-2014***) held at Goa, India.
- Awarded (2nd position) in Short Film competition as NSS Programme Officer, Krishnath College, University of Kalyani-2020.
- Siksha Ratna Awardee-2021, Govt. of W.B.
- Outstanding paper presentation award in 6th Regional Science Congress-2023-2024 held at Govt. College of Engineering & Textile Engineering, on 18th & 19th January'2024.

Other notable activities:

List of Journal Publication/ Conference Papers: (Last ten years)

[1] Magnetically addressable fluorescent Fe_3O_4/ZnO nanocomposites: Structural, optical and magnetization studies, **A. Roychowdhury**, S. P. Pati, A. K. Mishra, S. Kumar and D. Das, ***Journal of Physics and Chemistry of Solids*** 74 (2013) 811–818.

[2] Effects of magnetite nanoparticles on optical properties of zinc sulfide in fluorescent-magnetic Fe_3O_4//ZnS nanocomposites, **A. Roychowdhury**, S. P. Pati, S. Kumar and D. Das, ***Powder Technology*** 254 (2014) 583-590.

[3] Tunable properties of magneto-optical Fe_3O_4/CdS nanocomposites on size variation of the magnetic component, **A. Roychowdhury**, S. P. Pati, S. Kumar and D. Das, ***Material Chemistry and Physics***, 151 (2015) 105-111.

[4] Signature of exchange bias and spin-glass like phenomena in Fe/CoO nanocomposite, S. P. Pati, **A. Roychowdhury**, S. Kumar and D. Das, ***J. Appl. Phys.*** 113, (2013) 17D708.

[5] Structural and magnetic characterizations of undoped and K-doped $NdMnO_3$ single crystals synthesized by sol–gel route: A comparative study, A. Nandy, **A. Roychowdhury**, D. Das, S. K. Pradhan, ***Powder Technology*** 254 (2014)538-547.

[6] Overcoming inherent magnetic instability, preventing spin canting and magnetic coding in an assembly of ferrimagnetic nanoparticles, S. Dey, S. K. Dey, K. Bagani, S. Majumder, **A. Roychowdhury**, S. Banerjee, V. R. Reddy, D. Das, S. Kumar, ***Applied Physics Letters*** 105 (6) (2014) 063110.

[7] Structural, Optical, Hyperfine and Magnetization studies of ZnO encapsulated α-Fe Nanoparticles, A. K. Rathore, S. P. Pati, **A. Roychowdhury,** M. Ghosh, D. Das, ***Materials Research Bulletin***, 60 (2014) 566-571.

[8] Positron annihilation measurements in as-grown and alpha irradiated undoped Indium Phosphide, S. Pan, A. Mandal, **A. Roychowdhury**, A. Sengupta, ***Int. J. Eng. Sci. and Inn. Tech. (IJESIT)*** 3(4) (2014) 774-782.

[9] Positron annihilation measurements in high energy alpha irradiated undoped indium antimonide, S. Pan, A. Mandal, S. Mukherjee, A. K. Saha, **A. Roychowdhury**, D. Das, A. SenGupta, ***International Journal of Modern Physics B*** 28 (2014) 1450210.

[10] $\{[Mn_2(L\text{-tartrate})_2(H_2O)].3H_2O\}_n$ –A chiral MOF : Adsorption and guest dependent magnetism, R. Saha, **A. Roychowdhury**, I. M. Steele, S. Biswasa, S. Kumar, ***J. Indian Chem. Soc.,*** 90 (2013) 1043-1052.

[11] Structural, magnetic and hyperfine properties of single-phase $SrFe_{12}O_{19}$ nanoparticles prepared by a sol-gel route, A. Das, **A. Roychowdhury**, S. P. Pati, S. Bandyopadhyay, D. Das, ***Physica Scripta,*** 90 (2014) 025802.

[12] The influence of cross linking and clustering upon the nanohole free volume of the SHI and γ- radiation induced polymeric material, P. Singh, R. Kumar , R. Singh, **A. Roychowdhury**, D. Das, ***Applied Surface Science,*** 328 (2014) 882.

[13] Effect of Biomimetic Templates on the Magneto-Structural Properties of Fe_3O_4 Nanoparticles, S. Bhattacharya, **A. Roychowdhury**, V. Tiwari, A. I. Prasad, R. S. Ningthoujam, A. B. Patel, D. Das, S. Nayar, ***RSC Advances***, 5 (2015) 13777-13785.

[14] Facile green synthesis of iron oxide nanoparticles via solid-state thermolysis of a chiral, 3D anhydrous potassium tris(oxalato)ferrate(III) precursor, A. Saritha, B. Raju, D. Narayana Rao, **A. Roychowdhury**, D. Das, K.A. Hussain, ***Advanced Powder Technology*** 26 (2015) 349-354.

[15] Magnetic Property, Mössbauer Spectroscopy and Microwave absorption of maghemite nanoparticles (γ-Fe_2O_3), encapsulated in Carbon nanotubes, S. Sutradhar, S. Das, **A. Roychowdhury**, D. Das, P. Chakrabarti, ***Materials Science and Eng. B*** 196 (2015) 44-52..

[16] $NiFe_2O_4$ nanorod: porosity effect on spin canting, quadrupole splitting and hyperfine magnetic properties, T. Mondal, S. Bhattacharjee, **A. Roychowdhury**, S. Majumder, D. Das, M. Mitra, C. K. Ghosh, ***Materials Research Express*** 2 (2015) 046102.

[17] PALS and DSC measurements in 8MeV electron irradiated natural rubber filled with different fillers, A. Mandal, S. Pan, **A. Roychowdhury**, A. Sengupta, ***International Journal of Modern Physics B*** 29 (2015) 1550196.

[18] Investigation of charge transport properties in less defective nanostructured ZnO based Schottky, diode, A. Dey, A. Layek, **A. Roychowdhury**, M. Das, J. Datta, S. Middya, D. Das, P. P. Ray, ***RSC Advances*** 5 (2015) 36560.

[19] Synthesis of α-Fe_2O_3- functionalised graphene oxide nano composite by a facile low temperature method and study of its hyperfine parameters, S. Nag, **A. Roychowdhury**, D. Das, S. Mukherjee, ***Material Research Bulletin*** 74 (2015) 109-116.

[20] Adiabatic polaron hopping conduction and Griffiths phase in electron-doped $Ca_{0.85}Dy_{0.15}MnO_3$, M. H. Khan, **A. Roychowdhury**, D. Das, S. Pal, ***Journal of Alloys and Compounds*** 650 (2015) 328-335.

[21] Multi-functional biomimetic graphene induced transformation of Fe_3O_4 to ε-Fe_2O_3 at room temperature, S. Bhattacharya, **A. Roychowdhury**, D. Das, S. Nayar, ***RSC Advances*** 5 (2015) 89488-89497.

[22] Synthesis, X-ray Rietveld analysis, Mössbauer and Infrared spectroscopy of R_2FeSbO_7 (R^{3+} = Y, Dy, Gd, Bi) pyrochlore solid solution, Y. Jana, P. Halder, A. Ali Biswas, **A. Roychowdhury**, S. De, S. Kumar, D. Das, ***Journal of Alloys and Compounds*** 656 (2016) 226-236.

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[25] Effect of doping of chromium ions on the structural and magnetic properties of nickel ferrite, Aakash, **Anirban Roychowdhury**, Dipankar Das, Samrat Mukherjee, ***Ceramic International*** 42 (2016) 7742-7747.

[26] Grain size reduction effect on optical, magnetic and hyperfine properties of α-Fe_2O_3@ZnO nanocomposites prepared by the high energy ball-milling, Chandana Roy Chaudhury, **Anirban Roychowdhury**, Anusree Das, Dipankar Das, ***J. Phys. Chem. Solids*** 92 (2016) 38-44.

[27] Effect of ZnO coating on two different sized α-Fe nanoparticles: Synthesis and detailed investigation of their structural, optical, hyperfine and magnetic characteristics, A. K.

Rathore, S. P. Pati, M. Ghosh, **A. Roychowdhury,** D. Das, ***J. Materials Science: Materials in electronics***, 28 (2017) 6950-6958.

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[35] Non-inversion anisotropy energy in NiO coral structure: Asymmetric hysteresis loop at room temperature; S. Bhattacharjee, G. C. Das, **A. Roychowdhury**, D. Das, C. K. Ghosh, D.Bhattacharya, P. Sen, ***Applied Surface Science*** 449 (2018) 389-398.

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[38] Trapped Exciton-Enhanced Response of n-TiO_2 (110)/p-Si (111) Nanostructures as Photodetectors, ***ACS Appl. Nano Mater***, 5(2) (2022) 2316-2325.

[39] Effect of rGO incorporation on structural and magnetic properties of Ni-Zn ferrite nanostructures, ***Journal of Magnetism and Magnetic Materials***,559 (2022) 169507.

[40] Room-temperature surface multiferroicity in Y_2NiMnO_6 nanorods. *Phys. Rev. B,* 92 (2016) 38-44.

[41] A Systematic study of oxygen vacancy Mediated Short range and long range magnetic ordering in $BaTi_{1-x}Fe_xO_3$ (x=0.02). *Journal of Magnetism and Magnetic Materials,* 595 (2024) 171927.