

CURRICULAM VITAE



Name : Dr. Ankita Indra
Designation: Assistant Professor
Department: Physics
Institute : Srikrishna College, Bagula, Dist-
Nadia, West Bengal, 741502
Email : ankita@srikrishnacollegebagula.ac.in

Academic Qualification:

Degree	Year	Institute/University	% of Marks
Ph. D.	2021	Indian Association for the Cultivation of Science (Degree awarded by Jadavpur University)	.
M. Sc.	2013	Jadavpur University	82.4
B. Sc.	2011	Jadavpur University	80.7

- **Ph. D. Thesis Title:** Studies of multiferroic orders in materials
- **Supervisor:** Prof. Saurav Giri, School of Physical Sciences, Indian Association for the Cultivation of Science, Jadavpur, Kolkata

Awards and Fellowships:

- *Senior Research Fellow* (DST INSPIRE) from 2015 to 2017 (Indian Association for the Cultivation of Science)
- *Junior Research Fellow* (DST INSPIRE) from 2013 to 2015 (Indian Association for the Cultivation of Science)
- *CSIR-UGC NET* 2013 (All India Rank 177)
- *GATE* 2013 (All India Rank 33)
- *University Gold Medal* for standing 1st at M. Sc. Examination in Physics (Jadavpur University) 2013
- *Sushila Bala Memorial Silver Medal* for standing 1st at M. Sc. Examination in Physics (Jadavpur University) 2013
- *Prof. Surendra Nath Bose Memorial Bronze Medal* for securing highest marks in theoretical papers in Physics at M. Sc. Examination (Jadavpur University) 2013
- *DST INSPIRE Scholarship* from 2008 to 2013

Teaching Experience:

- Working as an *Assistant Professor in Physics* at Srikrishna College from 30.03.2017 to till date

Course Taught: Under Graduate Level (Honors and General)

- General Properties of Matter
- Classical Mechanics
- Thermodynamics
- Electricity and Magnetism
- Electromagnetic Theory
- Solid State Physics
- Modern Physics

Participation in Faculty Development Programs:

- UGC sponsored *Refresher Course* on Natural Sciences organized by HRDC Goa University
- UGC sponsored *Orientation Program* organized by HRDC University of Hyderabad

Research Interests:

- Multiferroic & Magnetoelectric Materials
- Magnetic and electronic orderings, magneto-transport properties
- Magnetism (low-dimensional, frustrated system, exchange bias effect)
- Ferroelectricity (Proper and improper ferroelectricity)
- Magnetocaloric & Electrocaloric Effects
- Structural analysis using X-ray, synchrotron diffraction, muon-spin relaxation

Research Skills:

Sample Preparation:

- Solid state reaction and chemical route
- Crystal Growth (Solvothermal method)

Characterization and Measurement:

- Microstructure Analysis
- Magnetic Properties
- Transport Measurement
- Electric Polarization
- Dielectric and Impedance Analysis
- Thermal Expansion
- Heat Capacity
- XRD, FESEM, TEM, XPS

Microstructural Analysis: Fullprof, Maud, Vesta, Amplimodes, Isodistort

Instrument Interfacing Packages: Microsoft Visual Basic, Lab View

List of Publications:

1. *Significant magneto-elastic coupling at Griffiths-like phase boundaries in low dimensional oxides, ASb_2O_6 ($A= Ni \& Mn$);* A. Chatterjee, **A. Indra**, O. Gutowski, M. v. Zimmermann, S. Majumdar, S. Giri, ***Journal of Physics: Condensed Matter* (2021)** [Accepted: <https://doi.org/10.1088/1361-648X/abe350>]
2. *Multicaloric effect in multiferroic sulpho spinel MCr_2S_4 ($M= Fe \& Co$);* K. Dey, **A. Indra**, A. Karmakar, S. Giri, ***Journal of Magnetism and Magnetic Materials* 498, 166090 (2020)**
3. *High-temperature ferroelectric order and magnetoelectric coupling driven by the magnetic field cooling effect in R_2BaCuO_5 ($R= Er, Dy, Sm$);* **A. Indra**, S. Mukherjee, S. Majumdar, O. Gutowski, M. v. Zimmermann, S. Giri, ***Physical Review B* 100, 014413 (2019)**
4. *Natural ferroelectric order near ambient temperature in the orthoferrite $HoFeO_3$;* K. Dey, **A. Indra**, S. Mukherjee, S. Majumdar, J. Stremper, O. Fabelo, E. Mossou, T. Chatterji, S. Giri, ***Physical Review B* 100, 214432 (2019)**
5. *Multiferroic order and re-entrant spin-glass-like state in $DyCrO_4$;* **A. Indra**, S. Giri, ***Journal of Magnetism and Magnetic Materials* 489, 165467 (2019)**
6. *Unveiling spin-glass transition and antiferromagnetic order by μ SR studies in spin-chain Sm_2BaNiO_5 ;* **A. Indra**, K. Dey, A. Bhattacharyya, A. Berlie, S. Giri, ***Journal of Physics: Condensed Matter* 31, 165801 (2019)**
7. *CrO_4 distortion-driven ferroelectric order in $(R,Y)CrO_4$ ($R=Sm, Gd, \text{ and } Ho$) : A new family of multiferroics;* **A. Indra**, K. Dey, J. K. Dey, S. Majumdar, U. Rütt, O. Gutowski, M. v. Zimmermann, S. Giri, ***Physical Review B* 98, 014408 (2018)**
8. *Magnetoelectric memory in reentrant frozen state and considerable ferroelectricity in the multiferroic spin-chain compound Sm_2BaNiO_5 ;* **A. Indra**, K. Dey, S. Majumdar, I. Sarkar, S. Francoual, R. P. Giri, N. Khan, P. Mandal, S. Giri, ***Physical Review B* 95, 094402 (2017)**
9. *Cryogenic magnetocaloric effect in zircon-type RVO_4 ($R=Gd, Ho, Er, \text{ and } Yb$);* K. Dey, **A. Indra**, S. Majumdar, S. Giri, ***Journal of Material Chemistry C* 5, 1646-1650 (2017)**
10. *Critical behavior and reversible magnetocaloric effect in multiferroic $MnCr_2O_4$;* K. Dey, **A. Indra**, S. Majumdar, S. Giri, ***Journal of Magnetism and Magnetic Materials* 435, 15-20 (2017)**
11. *Critical behavior of multiferroic sulpho spinel compounds: MCr_2S_4 ($M= Co \& Fe$);* K. Dey, **A. Indra**, S. Giri, ***Journal of Alloys and Compounds* 726, 74-80 (2017)**
12. *Chemical-pressure-driven orthorhombic distortion and significant enhancement of ferroelectric polarization in $Ca_{1-x}La_xBaCo_4O_7$ ($x\leq 0.05$);* K. Dey, **A. Indra**, A. Chatterjee, S. Majumdar, U. Rütt, O. Gutowski, M. v. Zimmermann, S. Giri, ***Physical Review B* 96, 184428 (2017)**

13. *Magnetoelectric coupling and exchange bias effects in multiferroic NdCrO₃*; **A. Indra**, K. Dey, A. Midya, P. Mandal, O. Gutowski, U. Rütt, S. Majumdar, S. Giri, ***Journal of Physics: Condensed Matter* 28, 166005 (2016)**
 14. *Magnetoelectric Coupling, Ferroelectricity, and Magnetic Memory Effect in Double Perovskite La₃Ni₂NbO₉*; K. Dey, **A. Indra**, D. De, S. Majumdar, S. Giri, ***ACS applied materials & interfaces* 8, 12901-12907 (2016)**
 15. *Thermally assisted and magnetic field driven isostructural distortion of spinel structure and occurrence of polar order in CoCr₂S₄*, K. Dey, A. Karmakar, **A. Indra**, S. Majumdar, U. Rütt, O. Gutowski, M. v. Zimmermann, S. Giri, ***Physical Review B* 92, 024401(2015)**
 16. *Tuning of multiferroic orders correlated to oxygen stoichiometry in magnetite films*; K. Dey, A. Ghosh, P. Modak, **A. Indra**, S. Majumdar, S. Giri, ***Applied Physics Letters* 105, 142905 (2014)**
- **My Google Scholar Page-**
<https://scholar.google.co.in/citations?user=VtBzS6EAAAAJ&hl=en>

Research Visits:

- Synchrotron radiation at DESY (Petra III) Hamburg, Germany, June 2016.
- Synchrotron radiation at DESY (Petra III) Hamburg, Germany, October 2015.

Participation in Conferences:

- One day Webinar on *Use of ICT in Science Learning* on 05.07.2020 organized by Department of Physics, Srikrishna College, Bagula, West Bengal
- One day International Webinar on *Recent Trends in Nanomaterial and Devices* on 11.08.2020, organized by Department of Physics, SBSS Mahavidyalaya, Goaltore, West Bengal
- Two Day International Online Workshop cum Webinar on *Engaging Students in an Online Environment: Global Perspectives* on 28th-29th August 2020 organized by Department of English, Srikrishna College, Bagula, West Bengal
- One day Webinar on *Impact of Covid-19 Pandemic on Education and Employability of Rural Youths* on 05.07.2020 organized by IQAC, Srikrishna College, Bagula, West Bengal
- *64th DAE Solid State Physics Symposium (DAE-SSPS 2019)*; December 2019, Indian Institute of Technology Jodhpur, Rajasthan, India (Poster Presentation)
- *International Conference on Technologically Advanced Materials and Asian Meeting on Ferroelectricity*; November 2016, Delhi University, India (Poster Presentation)
- *Recent Trends in Condensed Matter Physics: Experiment and Theory*; March 2017, IACS, Kolkata (Oral Presentation).
- *Solid State Physics Symposium*; January 2016, IACS, Kolkata (Oral Presentation).