




# Government Autonomous College, Rourkela

## Faculty Profile

<b>Name</b>	Dr. Ranjana Rani Das			
<b>Designation</b>	Assistant Professor (I)			
<b>Department</b>	Physics			
<b>Address (Office)</b>	Department of Physics, Government Autonomous College Rourkela, Sundargarh, 769004			
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<b>Qualifications</b>				
<b>Degree</b>	<b>Institution</b>	<b>Year</b>	<b>Subject Details</b>	
B.Sc	Fakir Mohan Autonomous College Balasore	2009	Physics	
M.Sc	Fakir Mohan University	2011	Applied Physics and Ballistics	
Ph.D	Indian Institute of Technology Madras	2019	Experimental Condensed Matter Physics	
Postdoc	Institute Neel Grenoble France	2019-2021	Experimental Condensed Matter Physics	
Postdoc	National Institute of Science Education and Research Bhubaneswar	2021-2022	Experimental Condensed Matter Physics	
<b>Areas of Interest/ Specialization</b>				
Condensed Matter Physics, Magnetism, Neutron diffraction, X-ray diffraction, Ruddlesden-Popper, Perovskites, Layered Perovskites, Rietveld refinement, Spin glass, Frustrated magnetism, Multiferroics, High pressure and low temperature physics, Spin-phonon coupling				
<b>Teaching/Research Experience</b>				
<b>Organization/Institution</b>	<b>Designation</b>	<b>Duration</b>	<b>Role</b>	
Government Autonomous College Rourkela	Assistant Professor	Feb 2023-Till date	Lecturer	
Institute Neel, France	Postdoc Researcher	Sep 2019 -Feb 2021	Scientist	
NISER Bhubaneswar	Institute Fellow	Oct 2021- Oct 2022	Scientist	
IIT Madras	Research Scholar	July 2013- June 2017	Teaching Assistant	
<b>Course Taught:</b>				
<b>UG Course:</b> Quantum Mechanics, Statistical Mechanics, Computational Physics Lab				
<b>PG Course:</b> Condensed Matter Physics, Nuclear and Particle Physics, Basic Electronics, Classical Mechanics				

<b>International Collaboration/Consultancy</b>
1) Prof. Claire V. Colin, Institute Neel, Grenoble France
2) Dr. Pierre Bouvier, Institute Neel, Grenoble France
3) Dr. Tapan Chatterji, Institut Laue Langevin, Grenoble, France
<b>(National /International ) Seminar/Symposium/Webinar/Workshop/FDP/Orientation/ Refresher/Conference etc organized in capacity of Convener/ Co-convener [In Detail]</b>
1) Organized one Day International Webinar on 5 <sup>th</sup> May 2023 as Co-convener at Government Autonomous College Rourkela
<b>Paper Presented in Seminar/Symposium/Webinar/Workshop/FDP/Orientation/ Refresher/Conference etc [In Detail]</b>
1)Poster Presentation on Structural and Magnetic memory effect in a layered perovskite SrLaMn <sub>0.5</sub> Co <sub>0.5</sub> O <sub>4</sub> in IUCR2017 held at Hyderabad International Convention Centre 2016.
2) Poster Presentation at International conference on Magnetism and Magnetic Materials Conference, Bhubaneswar held from 9 - 13 <sup>th</sup> December 2018
3) Poster Presentation on Exchange bias and spin-phonon coupling in complex glassy layered perovskite SrLaMn <sub>0.5</sub> Ni <sub>0.5</sub> O <sub>4</sub> ” at the ICM2018 in San Francisco, California held from 15- 20 <sup>th</sup> July 2018
4) Poster Presentation on Giant Exchange bias in Ruddlesden-Popper layered system and the importance of competing magnetic interactions at Solid State Chemistry GRC held from 22 - 27 <sup>th</sup> July 2018
5) Poster Presentation on Evidence of spin glass and exchange bias phenomena in a layered perovskite LaSrCo <sub>0.5</sub> Mn <sub>0.5</sub> O <sub>4</sub> in IUMRS-ICYRAM 2016 held on 11-15 <sup>th</sup> Dec 2016 at IISC.
<b>Seminar/Symposium/Webinar/Workshop/FDP/Orientation/ Refresher/Conference etc Attended.[In Detail]</b>
<b>1)</b> Invited Speaker: School on Fundamental Crystallography and Workshop on Rietveld Refinement Analysis 10-14 <sup>th</sup> July 2023 held at Department of Physics & Astronomy, National Institute of Technology Rourkela, Sundargarh, Odisha.
<b>Memberships of Professional Bodies/Societies</b>
1) International Crystallography
2) American Physical Society
3) Electron Microscope Society of India (EMSI)
<b>Honors and Awards</b>
1) Secured All India Rank 107 in the National Eligibility Test (CSIR NET-2012) for Lectureship conducted by UGC-CSIR, India.
2) Secured All India Rank 46 in the Joint Entrance Screening Test (JEST-2013) conducted by Saha Institute of Nuclear Physics, Kolkata, India.
3) Secured All India Rank 319 in the Graduate Aptitude Test for Engineering (GATE-2014) conducted by Indian Institute of Technology.
4) <i>Travel grant award</i> from United Kingdom Govt for International Advanced school in Muon spectroscopy, Oxfordshire, UK 2019
5) <i>Best poster presentation</i> award- International Conference on Magnetism San Francisco, USA, 2018
6) <i>Best student presentation</i> finalist- 23 <sup>rd</sup> International Colloquium on Magnetic Films and Surfaces SantaCruz USA 2018
7) <i>Travel Research grant</i> award from SERB INDIA for performing synchrotron diffraction at KEK JAPAN 2018
8) <i>Travel grant award, from Electron Microscope Society of India for 24<sup>th</sup> Congress and General Assembly of the International Union of Crystallography, Hyderabad 2017</i>

9) <i>Travel grant award</i> from United Kingdom Govt for Oxford Neutron School, Oxford, UK 2015
10) <i>Travel grant award from Helmholtz-Zentrum Berlin Germany</i> for Berlin Neutron School, Berlin 2015
11) Travel grant award from International Crystallography bodies for international year of Crystallography, Hong Kong 2014
<b>List of Ongoing/ Submitted/ Completed Project (Give Details)</b>
<b>Projects submitted:</b>
1) Seed Research Grant 2023 OURIP.
<b>Publications (Research Papers:)</b>
1) <b>Ranjana R. Das</b> , Priyadarshini Parida, A. K. Bera, Tapan Chatterji, B. R. K. Nanda, and P. N. Santhosh “Giant Exchange Bias in the Single-layered Ruddlesden-Popper Perovskite: $SrLaCo_{0.5}Mn_{0.5}O_4$ ” <i>Physical Review B</i> 98 184417 2018.
2) <b>Ranjana R. Das</b> , P. Neenu Lekshmi and P. N. Santhosh “Exchange bias and spin-phonon coupling in complex glassy layered perovskite $SrLaMn_{0.5}Ni_{0.5}O_4$ ”, <i>AIP Advances</i> 8101423 2018.
3) <b>Ranjana R. Das</b> , P. Neenu Lekshmi, S. C. Das and P. N. Santhosh “Competing short-range magnetic correlations, metamagnetic behavior and spin-phonon coupling in $Nd_2CoMnO_6$ double perovskite” <i>Journal of Alloys and compounds</i> 773-770 4 2019.
4) <b>Ranjana Rani Das</b> , PN Santhosh Structural and magnetic memory effect in a layered perovskite $SrLaMn_{0.5}Co_{0.5}O_4$ INT UNION CRYSTALLOGRAPHY 73 C1018 5 2017.
5) <b>Ranjana R. Das</b> , P. Neenu Lekshmi, and P. N. Santhosh “Strong spin-phonon coupling, and large dielectric constant observed in quasi-two-dimensional layered perovskite $SrLaCo_{0.5}Mn_{0.5}O_4$ ” <i>Journal of Alloys and compounds</i> , 874 159736 2021.
6) Anusree V. K., <b>Ranjana R. Das</b> , P. Neenu Lekshmi, Ramchandra Dhal, Claire V. Colin and P. N. Santhosh “Giant exchange bias effect in Ruddlesden-Popper oxides $SrLaFe_{0.25+x}Mn_{0.25}Co_{0.5-x}O_4$ (x=0, 0.25): Role of the cluster glass magnetic phase in a quasi-two-dimensional perovskite” <i>Physical Review B</i> , 102 (13) 134405 7 2020.
7) Bastien Leclercq, Angel Arevalo-Lopez, Houria Kabbour, Sylvie Daviero-Minaud, Alain Pautrat, Tathamay Basu, <b>Ranjana R. Das</b> , Claire Colin, Rénaud David and Olivier Mentre “Multiferroics $BaCoX_2O_7$ (X = P, As) compounds with incommensurate structural waves but collinear spins ingredients”, <i>Advanced Quantum Technologies</i> , 2000064, 2020.
8) <b>Ranjana R. Das</b> , P Neenu Lekshmi, PN Santhosh “Strong spin-phonon coupling, and large dielectric constant observed in quasi-two-dimensional layered perovskite $SrLaCo_{0.5}Mn_{0.5}O_4$ ” <i>Journal of Alloys and Compounds</i> 874 159736 9 2021.
9) P Pal, Shalini Badola, PK Biswas, <b>Ranjana R. Das</b> , Surajit Saha, SD Kaushik, Parasmani Rajput, PN Vishwakarma, AK Singh, “Investigation of spin-phonon coupling and local magnetic properties in magnetoelectric $Fe_2TeO_6$ ” <i>Journal of Magnetism and Magnetic Materials</i> 540 168512 2021.
10) <b>Ranjana R. Das</b> , Bastien Leclercq, Pierre Bouvier, Angel M Arévalo-López, Céline Goujon, J-P Itié, Alain Polian, Olivier Mentre, Claire V Colin “Compressibility of structural modulation waves in the chain compounds $BaCoX_2O_7$ (X=As, P): a powder study” <i>Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials</i> 78 2 2022.
11) <b>Ranjana R. Das</b> , P Neenu Lekshmi, AK Bera, SM Yusuf, Tapan Chatterji, PN Santhosh “Magnetic rare-earth ion mediated 4f-3d interlayer coupling and giant exchange bias in single layered Ruddlesden-Popper perovskites $SrLnCo_{0.5}Mn_{0.5}O_4$ (Ln= Pr, Nd)” <i>Journal of Alloys and Compounds</i> 910 164798 2022.
12) <b>Mahima M Kurian</b> , <b>Ranjana R. Das</b> , Chinnu V Devan, Manoj Raama Varma, Claire V Colin, PN Santhosh “Exchange bias effect and inhomogeneous magnetism in 6H $Ba_3CoFeRuO_9$ : Role of structural site disorder” <i>Journal of Magnetism and Magnetic Materials</i> 170372 2023.
<b>Reviewer:</b>
Institute of Physics Journal