



**Shaheed Rajguru College of Applied Sciences for Women**  
**University of Delhi**  
**Faculty Profile**

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| <b>Name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Dr. Amit Kumar</b>                 |  |
| <b>Designation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Assistant Professor (Physics)         |                                                                                     |
| <b>Email</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | amit.morewal@rajguru.du.ac.in         |                                                                                     |
| <b>Degree</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Institution</b>                    | <b>Year</b>                                                                         |
| B.Sc. (H) Physics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hans Raj College, University of Delhi | 2010-13                                                                             |
| M.Sc. Physics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hans Raj College, University of Delhi | 2013-15                                                                             |
| PhD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Jawaharlal Nehru University           | 2015-20                                                                             |
| <b>Areas of Interest / Specialization</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       |                                                                                     |
| <ul style="list-style-type: none"> <li>- Nanocrystalline Perovskite Oxides</li> <li>-Hexagonal Polytypes</li> <li>-Magnetic Cooling Technology</li> <li>-Magnetocaloric Materials</li> <li>-Magnetodielectric Materials</li> <li>-Magnetoresistive Materials</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                                                                                     |
| <b>Publications Profile</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                       |                                                                                     |
| <p><b>1)</b> Synthesis, Structural and Physical Properties of <math>ABO_3</math> based Hexagonal Polytypes: A Review and Discussion, <b>Amit Kumar</b>, Meenakshi and Rabindra Nath Mahato, Physica B: Physics of Condensed Matter 642 (2022) 414125. <b>Impact factor: 2.988</b></p> <p><b>2)</b> Impact of crystal stacking sequence on electrical transport and dielectric properties of the nanocrystalline <math>BaCo_{0.90}Mn_{0.10}O_{3-\delta}</math>, <b>Amit Kumar</b>, S. Chaudhary, E. Meher Abhinav and Rabindra Nath Mahato, Journal of Alloys and Compounds <b>786</b>, 356-367 (2019). <b>Impact factor: 6.371</b></p> <p><b>3)</b> Impact of the Sr doping on structural and magnetic properties of nanocrystalline <math>Ba_{1-x}Sr_xCo_{0.9}Mn_{0.1}O_{3-\delta}</math> (<math>0.0 \leq x \leq 0.5</math>), <b>Amit Kumar</b> and Rabindra Nath Mahato, Journal of Magnetism and Magnetic Materials <b>476</b>, 59-68 (2019). <b>Impact factor: 3.097</b></p> <p><b>4)</b> Effect of annealing temperature on structural and magnetocaloric properties of nanocrystalline <math>BaCo_{0.90}Mn_{0.10}O_{3-\delta}</math>, <b>Amit Kumar</b>, Meenakshi and Rabindra Nath Mahato, Journal of Alloys and Compound <b>723</b>, 675 (2017). <b>Impact factor: 6.371</b></p> <p><b>5)</b> Effect of structural stacking on magnetocaloric and magnetodielectric properties of nanocrystalline <math>Ba_{1-x}Sr_xCo_{0.9}Mn_{0.1}O_{3-\delta}</math> (<math>0.0 \leq x \leq 0.5</math>), <b>Amit Kumar</b>, S. Chaudhary and Rabindra Nath Mahato, Physica B:</p> |                                       |                                                                                     |

Condensed Matter **56**, 79-86 **(2019)**. **Impact factor: 2.988**

**6)** *Ferromagnetism in Nanocrystalline  $\text{SrCo}_{0.9}\text{Mn}_{0.1}\text{O}_{3-\delta}$ : A Structural, Magnetic and Electrical Transport Study*, **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, Journal of Superconductivity and Novel Magnetism, 32, 3947-3955 **(2019)**. **Impact factor: 1.675**

**7)** Evolution of Structure, Magnetism and Critical Behaviour of Nanocrystalline  $\text{BaCo}_{1-y}\text{Mn}_y\text{O}_{3-\delta}$  ( $0.1 \leq y \leq 0.3$ ), **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, Journal of Superconductivity and Novel Magnetism, 33, 2883-3891 **(2020)**. **Impact factor: 1.675**

**8)** *Structural, magnetic and electrical transport properties of nanocrystalline  $\text{SrCo}_{0.5}\text{Mn}_{0.5}\text{O}_{3-\delta}$* , **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, IEEE Transactions on Magnetics **54**, 2900306 **(2018)**. **Impact factor: 1.848**

**9)** *Exotic Magnetic Phenomena in Nanocrystalline Mn-Doped  $\text{SrCoO}_{3-\delta}$* , **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, Advanced Science Letters **24**, 786 **(2018)**

**10)** Magnetic and Magnetocaloric Properties of the nanocrystalline  $\text{Pr}_{0.7}\text{Ba}_{0.2}\text{Ca}_{0.1}\text{MnO}_3$  Sample, Meenakshi, Priyanka Bisht, **Amit Kumar**, Rabindra Nath Mahato, AIP Advances **11**, 015239 **(2021)**. **Impact factor: 1.697**

**11)** *Effect of Fe substitution on structural, magnetic and magnetocaloric properties of nanocrystalline  $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{1-x}\text{Fe}_x\text{O}_3$  ( $x=0.1, 0.3$ )*, Meenakshi, **Amit Kumar** and Rabindra Nath Mahato, Physica B: Condensed Matter **511**, 83 **(2017)**. **Impact factor: 2.988**

**12)** *Structural, magnetic and magnetocaloric properties of Co-doped nanocrystalline  $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{0.7}\text{Co}_{0.3}\text{O}_3$* , Meenakshi, **Amit Kumar** and Rabindra Nath Mahato, Journal of Magnetism and Magnetic Materials **448**, 60 **(2018)**. **Impact factor: 3.097**

**13)** *Structural and Electrical Transport Properties of Nanocrystalline  $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{1-x}\text{Fe}_x\text{O}_3$  ( $x = 0.1$ )*, Meenakshi, **Amit Kumar** and Rabindra Nath Mahato, Advanced Science Letters **24**, 859 **(2018)**

**14)** Effect of Structural Transition on Magnetic Properties of Fe-Doped Nanocrystalline  $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{1-x}\text{Fe}_x\text{O}_3$  ( $x=0.2, 0.4$  and  $0.5$ ), Meenakshi, Khemchand Rawat, **Amit Kumar** and Rabindra Nath Mahato, Journal of Nanoscience and Technology **19**, 4387–4395 **(2019)**

**15)** Large magnetocaloric effect and critical behavior in Cu-doped nanocrystalline  $\text{La}_{0.7}\text{Te}_{0.3}\text{Mn}_{1-y}\text{Cu}_y\text{O}_3$  ( $0.1 \leq y \leq 0.5$ ), Meenakshi, **Amit Kumar** and Rabindra Nath Mahato, Vacuum **169**, 108943 **(2019)**. **Impact factor: 4.00**

**16)** *Impact of Structural Symmetry on Magnetization Properties in  $\text{SrCo}_{0.95}\text{Mn}_{0.05}\text{O}_3$  Prepared by Sol-Gel Method*, **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, 62nd DAE Solid State Physics Symposium AIP Conf. Proc. **1942**, 130008-1–130008-4 (2018).

**17)** *Structural and electrical transport properties of Mn-doped nanocrystalline  $\text{SrCoO}_3$* , **Amit Kumar**, Meenakshi and Rabindra Nath Mahato, Recent advances in fundamental and applied sciences (RAFAS)

AIP Conf. Proc. **1860**, 020021-1 (2017).

#### Awards and Distinctions

- **International Travel Support (ITS–SERB):** Received financial assistance to participate in the 9th Joint European Magnetic Symposia (JEMS 2018), Germany, held from 03–07 September 2018.
- **Corpus Fund (SPS, JNU):** Received Student Travel Grant Support to attend the International Conference on Magnetic Materials and Applications (ICMAGMA 2017), Hyderabad, India.
- **CBSE Scholarship:** Awarded a CBSE Scholarship during graduation and post-graduation in recognition of meritorious academic performance at the higher secondary level.
- **Delivered a talk on** “Possible Career Opportunities in Physics” in a webinar organized by KRYPTUS, the Placement Cell, Kalindi College, University of Delhi, on February 15, 2022.
- **Delivered a talk on** “Career Prospects after Graduation in Physics” as part of a Career Counselling Programme organized by the IQAC, Ramjas College, University of Delhi, on May 26, 2023.
- **Chaired a session and participated** in the SHoDHशोधा 1.0 – A Two-Day National Workshop on “Research and Innovation,” organized by Students for Holistic Development of Humanity (SHoDH) and held on 18–19 July 2025 at IIIT Prayagraj.
- **Served as Co-Convenor** for Anveshan: 6-Week Summer Lab Internship Program, organized from 5 June to 17 July 2025 by the SHoDH Foundation, in collaboration with Ramjas College, Acharya Narendra Dev College, Shaheed Rajguru College of Applied Sciences for Women, and Swami Shraddhanand College, University of Delhi.
- **Delivered an online lecture on** “Interdisciplinary Perspectives on Digital Confidence, Safety, and Empowerment” at the National Conference organized by Gurukul Mahila Mahavidyalaya, Kalibadi, Raipur, Chhattisgarh, on 29 November 2025.
- **Served as a Trainer** for the Certificate Course in Lab Technology and Lab Management, conducted by the Centre for Innovative Skill-Based Courses, Open Learning Development Centre (OLDC), SOL/COL, University of Delhi, from August 2025 to January 2026.