



# St. Xavier's College

Dr. Camil Bulcke Path, Ranchi

## Controller of Examination's Profile

Name of Faculty Member	:	Dr. Sumit Kumar Roy
Gender	:	Male
Email ID	:	sumit.sxc13@gmail.com
Name of Department	:	Department of Physics
Level of Teaching	:	Undergraduate
Academic Qualification	:	M.Sc. (Gold Medalist), Ph.D.
Total Teaching Experience	:	14 Years and 06 Months
UGC NET/SET Qualified	:	Yes

### Research Papers Published:

- 1) Mrityunjay Kumar, **Sumit K. Roy**, Rahul K. Singh, Kamal Prasad, "**Double perovskite  $\text{Nd}_2\text{FeTiO}_6$  ceramics: Structural and electrical properties**", Processing and Application of Ceramics 17 [4] (2023) 428–435, 2024.
- 2) Shyamanand Pandey, Swarat Chaudhuri, Rahul K. Singh, **Sumit K. Roy**, "**Effect of Milling on Dielectric Properties of PZT**", Materials Science Forum, Trans Tech Publications Ltd, Switzerland, ISSN: 1662-9752, Vol. 1097, pp 99-105, 2023.
- 3) Santosh Rajwar, Sushil K. Pandey, **Sumit K. Roy**, "**Impedance Spectroscopy Analysis of  $(1-x)\text{Ba}_{0.06}(\text{Na}_{1/2}\text{Bi}_{1/2})_{0.94}\text{TiO}_3-x\text{NaTaO}_3$  Ceramics**", Materials Science Forum, Trans Tech Publications Ltd, Switzerland, ISSN: 1662-9752, Vol. 1097, pp 77-84, 2023.
- 4) Rahul K. Singh, Mrityunjay Kumar, **Sumit K. Roy**, "**Structure, Microstructure, and Dielectric Properties of  $\text{Bi}_{0.5}(\text{Na}_{0.78}\text{K}_{0.22})_{0.5}\text{TiO}_3$  Lead-Free Ceramic**", Materials Science Forum, Trans Tech Publications Ltd, Switzerland Online, Vol. 1097, pp 91-97, 2023
- 5) Sangeeta Lakra, S.K. Mukherjee, **Sumit K. Roy**, "**Dielectric and Mechanical Properties of PZT Incorporated PVDF Nanocomposites Prepared by Solution**

**Casting Method**", Materials Science Forum, Trans Tech Publications Ltd, Switzerland, ISSN: 1662-9752, Vol. 1097, pp 107-113 ,2023.

- 6) Praveen Kumar, **Sumit K. Roy**, Swarat Chaudhuri, **"Evaluation of Crystal size present in Graphene Oxide quantum dots using optical and Raman spectroscopy"**, Recent Advances in Sustainable Material, Materials Today Proceedings, 2020.
- 7) S. Chaudhuri, and **Sumit K. Roy**, **"Impedance Spectroscopy Analysis of  $(1-x)\text{Ba}_{0.06}(\text{Na}_{1/2}\text{Bi}_{1/2})_{0.94}\text{TiO}_3\text{-xNaNbO}_3$  Ceramics"**, AIP Conference Proceedings 2220, 020133 (2020), 2020.
- 8) S. Chaudhuri, and **Sumit K. Roy**, **"Milling maps of nanocrystalline lead titanate ceramics synthesised by high energy ball milling"**, AIP Conference Proceedings 2220, 020133 (2020), 2020.
- 9) **Sumit K. Roy** and Kamal Prasad, **"Evaluation of Structural and Electrical Properties of Ball-milled  $\text{NaNbO}_3$  Ceramic"**, Nano Prog., (2020) 2(4), 58-63, 2020.
- 10) **Sumit K. Roy**, Satyendra N. Singh, Sanat K. Mukherjee, Kamal Prasad, **"Structure and dielectric studies of  $(1-x)\text{Ba}_{0.06}(\text{Na}_{0.5}\text{Bi}_{0.5})_{0.94}\text{TiO}_3\text{-xBa}(\text{Fe}_{0.5}\text{Nb}_{0.5})\text{O}_3$  lead-free ceramics"**, Processing and Application of Ceramics 10 (3), 143–152. (2016), 2016.
- 11) Uttam K. Mahto, **Sumit K. Roy** and K.Prasad, **"High Energy Milled  $\text{Ba}_{0.06}\text{Na}_{0.47}\text{Bi}_{0.47}\text{TiO}_3$  Ceramic: Structural and Electrical properties"**, IEEE Transactions on Dielectric and Insulation, 2016.
- 12) Uttam K. Mahto, **Sumit K. Roy** and K.Prasad, **"Effect of milling on the electrical properties of  $\text{Ba}(\text{Fe}_{1/2}\text{Ta}_{1/2})\text{O}_3$  ceramics"**, Advances in Materials Research, Vol. 5, No. 3, 181-192, (2016), DOI:org/10.12989/amr.2016.5.3.181, 2016.
- 13) **Sumit K. Roy**, S.N. Singh, and K. Prasad, S. K. Mukherjee, **" $\text{Ba}_{0.06}(\text{Na}_{1/2}\text{Bi}_{1/2})_{0.94}\text{TiO}_3\text{-Ba}(\text{Fe}_{1/2}\text{Ta}_{1/2})\text{O}_3$ : Giant permittivity lead-free ceramics"**, Journal of Material Science: Materials in Electronics, DOI 10.1007/s10854-016-6121-x, 2016.
- 14) Uttam K. Mahto, **Sumit K. Roy**, Kumar AmarNath, Kamal Prasad, **"Effect of high-energy ball milling on the electrical properties of  $\text{NaTaO}_3$  ceramic"**, Processing and Application of Ceramics 10 (3), 143–152, DOI: 10.2298/PAC1603143M, 2106.
- 15) **Sumit K. Roy**, S. Chaudhuri, R.K. Kotnala, D.K. Singh, B.P. Singh, S.N. Singh, K.P. Chandra, K. Prasad, **"Dielectric and Raman studies of**

- Ba<sub>0.06</sub>(Na<sub>1/2</sub>Bi<sub>1/2</sub>)<sub>0.94</sub>TiO<sub>3</sub>-NaNbO<sub>3</sub> ceramics**", Materials Science-Poland, 34(2), 437-445, DOI: 10.1515/msp-2016-0041, 2016.
- 16) **Sumit K. Roy**, S. N. Singh, and K. Prasad, "**Structure, Microstructure and Infrared Studies of Ba<sub>0.06</sub>(Na<sub>1/2</sub>Bi<sub>1/2</sub>)<sub>0.94</sub>TiO<sub>3</sub>-NaNbO<sub>3</sub> Ceramics**", AIP Conference Proceedings, doi.org/10.1063/1.4946268, 2015.
  - 17) **Sumit Kr. Roy**, S. Chaudhuri, S.N.Singh and K. Prasad, "**Structure, Microstructure and Dielectric Properties of (1-x) Ba<sub>0.06</sub>(Na<sub>1/2</sub>Bi<sub>1/2</sub>)<sub>0.94</sub> TiO<sub>3</sub>-xNaTaO<sub>3</sub> Lead-Free Ceramics**", Recent Trends in Computations and Mathematical Analysis in Engineering and Sciences, 2015.
  - 18) **Sumit K. Roy**, S.N. Singh, K. Kumar and K. Prasad, "**Structural, FTIR and ac conductivity studies of NaMeO<sub>3</sub> (Me  $\equiv$  Nb, Ta)**", Advances in Material Research, Vol.2, No.3, 173-180, DOI:10.12989/amr.2013.2.3.173, 2013.

#### **Participation in UGC-HRDC Course/FDP/OC/RC:**

- 1) Participated in the Refresher Course in **Research Methodology and Statistical Analysis** from 05/08/2021 to 18/08/2021 organized by UGC-ASC Ranchi University, Ranchi.
- 2) Participated in the Refresher Course in **Women Studies & Gender Sensitization** from 06/07/2018 to 26/07/2018 organized by UGC-ASC Ranchi University, Ranchi.
- 3) Participated in the Refresher Course in **Basic Science (Phy/Chem/Math/Stat)** from 03/03/2014 to 23/03/2014 organized by UGC-ASC Ranchi University, Ranchi.
- 4) Participated in the **59th Orientation Programme** from 05/07/2010 to 01/08/2010 organized by UGC-ASC Ranchi University, Ranchi.

#### **Seminar/Conference attended/Paper Presented (National/International):**

- 1) Attended INUP - i2i Familiarization Workshop on **Nanofabrication Technologies**, Sponsored by Ministry of Electronics and Information Technology, Govt. of India, at CeNSE, IISc, Bangalore, 12-14 Sep 2022.
- 2) Attended 16<sup>th</sup> Conference of the Asian Crystallographic Association, organized by UTown, National University of Singapore, 17-20 Dec 2019.
- 3) Attended International Conference on **Condensed Matter and Applied Physics (ICC-2015)**, Sponsored by ISRO, Department of Science and

Technology, Gov. of India, DRDO, at Department of Physics, Govt. Engineering College Bikaner, Rajasthan, India, 30-31st October 2015.

- 4) Attended National Seminar on **Emerging Trends in Condensed Matter Physics (ETCMP-2013)**, Organized at T.M Bhagalpur University Bhagalpur, India, 17th - 18th January 2013.
- 5) Attended 17<sup>th</sup> National seminar on **Ferroelectrics and Dielectrics (XVII NSFD-2012)**, Organized at Institute of Technical Education and Research (ITER), Bhubaneswar, Odisha, 17<sup>th</sup> to 19<sup>th</sup> December 2012

#### **Chapter Contribution in Book:**

- 1) “Exploring the Realms of Nature for Nanosynthesis”, Chapter: **Hydrothermal Nanotechnology: Putting the Last First**, Springer.

#### **Experience of Ph. D. Guidance:**

- 1) Three Research Scholars are registered under my Supervision for Ph.D. degree.

#### **Guest Lecture/Special Lecture Delivered:**

- 1) Guest Lecture on the topic “**Familiarization with Graphing and Visio alternative tools in Research**”, HRDC Ranchi on 29.08.2023.

[Dr. Sumit Kumar Roy]