DESHBANDHU COLLEGE

(UNIVERSITY OF DELHI)

KALKAJI, NEW DELHI - 110019

Faculty Details Proforma for DU College - Website

Title	Dr.	First Name	Raju	Last Name	Kumar	Photograph
Designation		Assistant Professor				
Address		Department of Physics, Deshbandhu College, University of Delhi, New Delhi, Delhi-110017				
Residence Address		Physics department, Deshbandhu College, Kalkaji, New Delhi-110019				
Mobile		+91-9472993539				
Email		rajur91@gmail.com rkumar39@db.du.ac.in				

Educational Qualifications

Degree	Institution	Subjects	Year	Division
Ph.D.	JNU, New Delhi	Experimental Nanoscience	2019	
M.sc	IIT Madras, Chennai	Physics	2016	1st
B.sc (Hons.)	St. Stephen's College, University of Delhi	Physics(Hons.)	2014	1st
Title of Thesis	*Investigation on Electrocaloric Response and Energy Storage Properties in $K_{0.5}Na_{0.5}NbO_3$ based Nanocrystalline Ceramics.*			

Career Profile

College Name	From	to
Deshbandhu College	09 Jan 2020(Ad-hoc)	26 Nov 2022(Ad-hoc)
	28 Nov 2022(Permanent)	Till date

Subject Taught

Theory: Elements of Modern Physics, Classical Mechanics, Solid State Physics, Waves and Oscillation, Mathematical Physics, Electricity & Magnetism

Practical: Elements of Modern Physics, Waves and Oscillation, Thermal Physics, Mechanics, Basic Instrumentation Skills, Electrical Circuits and Network Analysis, Quantum Mechanics, Advanced Mathematical Physics, Electricity and Magnetism, Mathematical Physics-1, Digital Empowerment(VAC), Basic IT Tools

Areas of Research

Experimental Nano-Science

List of publication: 11 Papers

Science Citation Indexed (SCI) listed/ Peer-Reviewed journals

Name of Journals	IF	Papers	Publishers	SCI
Scientific Reports	4.3	1	Nature	Yes
Scripta Materialia	5.3	1	Elsevier	Yes
Journal of Alloys and Compounds	5.8	2	Elsevier	Yes
Ceramics International	5.1	2	Elsevier	Yes
Journal of Applied Physics	2.7	1	AIP Publishing	Yes
Sustainable Energy and Fuels	5.0	1	Royal Society of Chemistry	Yes
ACS Applied Electronic Materials	4.4	1	American Chemical Society	Yes
Chemical Science	7.6	1	Royal Society of Chemistry	Yes
Physica Status Solidi (A) Applications and Materials Science	2.1	1	Wiley	Yes
Total		11		

Publications Profile

List of publication:

1. Science Citation Indexed (SCI) listed journals

1. **Kumar, R**. & Singh, S. Giant electrocaloric and energy storage performance of [(K0.5Na0.5)NbO3](1-x)-[LiSbO3]x nanocrystalline ceramics. **Scientific Reports**. 8, 3186 (2018).
2. **Kumar, R.**, Kumar, A. & Singh, S. Large electrocaloric response and energy storage study in environmentally friendly (1 - x)K0.5Na0.5NbO3 - xLaNbO3 nanocrystalline ceramics. **Sustainable Energy and Fuels** 2, 2698–2704 (2018).
3. **Kumar, R**., Kumar, A. & Singh, S. Coexistence of Large Negative and Positive Electrocaloric Effects and Energy Storage Performance in LiNbO3 Doped K0.5Na0.5NbO3 Nanocrystalline Ceramics. **ACS Applied Electronic Materials**. 1, 454–460 (2019).
4. **Kumar, R.**, Khurana, D., kumar, A. & Singh, S. Giant negative electrocaloric effect and energy storage response in 0.94(K0.5Na0.5)NbO3 -0.06SrMnO3 nanocrystalline ceramics. **Ceramics International. 44**, 20845–20850 (2018).
5. **Kumar, R.** & Singh, S. Enhanced electrocaloric response and high energy-storage properties in lead-free (1-x)(K0.5Na0.5)NbO3- xSrZrO3nanocrystalline ceramics. **Journal of Alloys and Compounds. 764**, 289–294 (2018).
6. Gupta, A., **Kumar, R .** & Singh, S. Coexistence of negative and positive electrocaloric effect in lead-free 0.9(K0.5Na0.5)NbO3 - 0.1SrTiO3 nanocrystalline ceramics. **Scripta Materialia 143**, 5–9 (2018).
7. **Kumar, R.** & Singh, S. Enhanced electrocaloric effect in lead-free 0.9(K0.5Na0.5)NbO3 - 0.1Sr(Sc0.5Nb0.5)O3 ferroelectric nanocrystalline ceramics. **Journal of Alloys and Compounds 723**, 589–594 (2017).
8. Kumar, A., **Kumar, R.**, Singh, K. & Singh, S. Enhanced Electrocaloric Effect and Energy Storage Density in Lead-Free 0.8Na0.5Bi0.5TiO3 -0.2SrTiO3 Ceramics. **Physica Status Solidi (A) Applications and Materials Science 216**, 1800786 (2019).
9. Jamwal, T.*; **Kumar, R.*** & Singh, S., Giant electrocaloric effect in 0.75PbZrO3 - 0.25Bi(Mg1/2Ti1/2)O3 ceramics, **Ceramics International**. 45, 14411–14414 (2019).
10. **Kumar, R**., Singh S. Structural, dielectric, impedance, and ferroelectric studies of LiNbO3-doped K0.5Na0.5NbO3 ceramics, **Journal of Applied Physics**, 136, 0-9 (2024).
11. **Kumar, R.**, et. al. Large electrocaloric effect in Bisco3 doped K0.5Na0.5NbO3 ceramics, **Journal of Materials Science: Materials in Electronics,** 36, 14, (2025).

PERSONAL DETAILS

Date of Birth : 22 December 1991
Nationality : Indian
Language known : English, Hindi

DECLARATION

I hereby declare that the above furnished information made in this curriculum-vitae are true and correct to the best of my knowledge.

Date: 03/01/2025
Place: Delhi

Dr. Raju Kumar

SCOPUS AUTHOR IDENTIFIER DETAILS

ORCID : https://orcid.org/0000-0002-3648-7637
Research gate : https://www.researchgate.net/profile/Raju-Kumar-23

Subject area : Experimental Nanoscience, Ferroelectrics, Electrocaloric effect

	Google Scholar	Research Gate
Citations	283	256
h-index	8, i10-index:8	9

Google Scholar : https://scholar.google.co.in/citations?user=IPKMjDsAAAAJ&hl=en

The above details are as per the website record on the date: 03-01-2025