Faculy Profile

Dr. AJITH S KUMAR

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Personal Details

Nationality	:	Indian
Date of Birth	:	10/11/1988
Gender	:	Male
Marrital Status	:	Married
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Educational qualifications

- **PhD (Physics**) from the Central University of Kerala, Kasargod (2013-2020).

- **CSIR-UGC NET/JRF (Physics)** (Dec 2012)

- **M.Sc (Physics)** from the St. Thomas' College, Pala (Affiliated to Mahatma Gandhi University, Kottayam) with **first class** (72.9%) (2010-12)

- **B.Sc (Physics)** from the St. Dominic's College, Kanjirappally (Affiliated to Mahatma Gandhi University, Kottayam) with **first class with distinction** (87.4%) (2007-10)

- **Higher Secondary (Science)** from the St. Dominice HSS, Kanjirappally (Board of Higher Secondary Examination, Kerala) with **first class with distinction** (87%) (2005-2007)

- **Secondary** from the CMS HS Mundakayam (SSLC, Kerala) with **first class with distinction** (87%) (2005)

Experience

- Assistant Professor, D B Pampa College, Parumala (2nd December 2022- till now)

- Assistant Professor, Kristu Jayanti College, Bengaluru (2nd August 2021- 30th September 2022)
- Assistant Professor (Ad-hoc), College of Engineering, Kidangoor, Kottayam, Kerala (28th Dec 2020 –27th July 2021)
- Research Associate, IISER Thiruvanthapuram (3rd June 2019- 2nd June 2020)

Other Important Responsibilities/Positions Held

- Assistant Coordinator, IGNOU study centre, D.B. Pampa College unit.
- Member, College Management System

Research interests

- Multiferroics and magnetoelectrics
- Magnetic materials
- Ferroelectric/piezoelectric materials for energy harvesting

Research projects

- Ph.D. : "Tailoring material parameters and connectivity for enhanced magnetoelectric coupling in $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ (BCZT) based engineered heterostructures" under the guidance of Dr. Swapna S. Nair, Associate Professor, School of Physics, Central University of Kerala, Kasargod
- M.Sc : "Propagation Characteristics of TM Waves in Nonlinear Thin Film Waveguides"

Awards and Honors

- Best oral presenter (Third prize) in ICNM 2017, MG University, Kottayam.

Seminars/Conferences/Poster presentations attended

- ICMAGMA (2-4 December 2015) held at Vellore Institute of Technology (VIT) (Poster)
- ICNM 2017, (Jan 2017) held at MG University, Kottayam (Oral presentation)
- IW2DM (22-23 July 2019) held at IISER Thiruvananthapuram (Participation)
- DST Sponsored Industry Academia conclave on Hydrogen and Fuel Cells (27-28 Feb 2020) held at IISER Thiruvananthapuram (Participation)

Research Publications

1. Exchange bias studies of CoFe2O4 coated BiFeO3 nanoparticles, S Vivek, **AS Kumar,** CSC Lekha, N Kalarikkal, A Banerjee, SS Nair, Journal of Alloys and Compounds 968, 172066 (**2023**)
2. Improvement in the structural, dielectric, and magnetic properties of CFO-doped KNNS-BKT ceramics, P Thakur, K Gupta, P Thakur, **AS Kumar**, V Sudarsanan, P Sharma, M Lal, J Mater Sci: Mater Electron 34,311 (**2023**)
3. Defect induced magnetism in green synthesized Cadmium Sulfide nanoparticles for spintronics applications, N Susha, **AS Kumar**, S Vivek, SS Nair, Materials Science and Engineering: B 265, 114998 (**2021**)
4. Exchange bias in $BiFeO_3$ and $Bi_{0.9}La_{0.1}FeO_3$ nanoparticles, S, Vivek; **Kumar, Ajith**; C S, Chitra Lekha; Nair, Swapna, Journal of Physics D: Applied Physics, 54, 125301 (**2021**)
5. Interface assisted strain-induced magnetoelectric coupling in core-shell nanostructures of CoFe2O4@ ZnO, MG Praveena, **Ajith S Kumar**, MS Kala, RN Bhowmik, Swapna S Nair, Senoy Thomas, MR Anantharaman, Journal of Magnetism and Magnetic Materials, 513, 167252 (**2020**)
6. Giant voltage generating microcantilevers based on $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$ and $Co_{76}Fe_{14}Ni_4Si_5B$ for next-generation energy harvesters, **Ajith S Kumar**, Chitra Lekha C S, Vivek S, Anantharaman M R, Venkata Saravanan K and Swapna S. Nair, Scripta Materialia, 180, 11-15 (**2020**)
7. Magnetoelectric coupling in strained strontium titanate and Metglas based magnetoelectric trilayer, S.Vivek, P.Geetha, K.V.Saravanan, **Ajith S Kumar**, C.S.Chitralekha, K.Sudheendran, M.R.Anantharaman and Swapna S. Nair, Journal of Alloys and Compounds, 789, 1056-1061 (**2019**)

8. Effect of $CoFe_2O_4$ weight fraction on multiferroic and magnetoelectric properties of (1- x) $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$–x $CoFe_2O_4$ particulate composites, **Ajith S Kumar**, C S Chitra Lekha, S Vivek, K Nandakumar, M R Anantharaman and Swapna S Nair. J Mater Sci: Mater Electron, 30, 8239–8248 (**2019**)

9. Strong sub-resonance magnetoelectric coupling in PZT-$NiFe_2O_4$-PZT thin film composite, Li Jian, **Ajith S Kumar**, C.S. Chitra Lekha, S. Vivek, Isabel Salvado, Andrei L. Kholkin, and Swapna S. Nair, Nano-Structures & Nano-Objects, 18, 100272 (**2019**)

10. Room Temperature Magnetoelectric Properties of Lead-Free Alkaline Niobate Based Particulate Composites, CS Chitra Lekha, **Ajith S Kumar**, S Vivek, K Venkata Saravanan, MR Anantharaman, KP Surendran, K Nandakumar and Swapna S Nair, Ceramics International, 45, 8115-8122 (**2019**)

11. Study of structural and magnetoelectric properties of $1-x(Ba_{0.96}Ca_{0.04}TiO_3)-x(ZnFe_2O_4)$ ceramic composites, Madan Lal, Mamta Shandilya, **Ajith S Kumar**,

Radheshyam Rai, Swapna S Nair, Ratnakar Palai, J Mater Sci: Mater Electron, 29, 80–85 (**2018**)

12. Strain induced giant magnetoelectric coupling in KNN/Metglas/KNN sandwich multilayers, C S Chitra Lekha, **Ajith S Kumar**, S Vivek, M R Anantharaman, K Venkata Saravanan and Swapna S Nair, Applied Physics Letters, 110, 012901 (**2017**)

13. High voltage generation from lead-free magnetoelectric coaxial nanotube arrays and their applications in nano energy harvesters, C S Chitra Lekha, **Ajith S Kumar**, S Vivek, U P Mohammed Rasi, K Venkata Saravanan, K Nandakumar and Swapna S Nair, Nanotechnology, 28, 055402 (**2017**)

14. Multiferroic and magnetoelectric properties of $Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O_3$–$CoFe_2O_4$ core–shell nanocomposite, **A.S Kumar**, CS Chitra Lekha, S Vivek, Venkata Saravanan, K Nandakumar, Swapna S Nair, Journal of Magnetism and Magnetic Materials, 418, 294-299 (**2016**)

15. Magnetic and dielectric studies of Li-Cu co-doped ZnO nanoparticles, S Vivek, **SK Ajith**, CS Chitralekha, Swapna S Nair, AIP Conf. Proc. 1728, 020466 (**2016**)