



## Centre for Research & Development

### Research Supervisor (Guide) Profiles

#### Discipline of Supervision: **Physics**



#### **Dr. Ambrose Rajkumar M**

Assistant Professor  
Department of Physical Sciences  
School of Computational & Physical Sciences

#### **Areas of Specialisation:**

Crystal Growth and Characterization, Nanomaterials and Energy Applications, Thin Film Materials and Applications

Dr. Ambrose Rajkumar M is an Assistant Professor of Physics at Kristu Jayanti (Deemed-to-be) University, Bengaluru, with a strong research focus on nonlinear optical (NLO) single crystals, crystal growth, irradiation effects, and materials characterization. He has published over 37 research articles in Scopus and Web of Science-indexed journals, making significant contributions to crystal engineering and materials science. His work on 2-amino-5-nitropyridinium derivatives, and their structural, optical, and dielectric properties, has been widely cited. Dr. Ambrose Rajkumar has successfully completed three internally funded research projects at the Centre for Research, Kristu Jayanti University, and is currently working on photocatalytic nanomaterials for solar hydrogen generation. His expertise has been recognized through invited lectures, resource person roles, and active participation in national and international seminars, including presentations on swift heavy ion irradiation effects. He has also served as convener for five international conferences on Recent Trends in Materials Science (ICRTMS) and national science outreach programs, receiving grants from DST-SERB, KSCST, and IAPT. His professional experience includes research fellowships under BRNS-DAE projects.

#### **Selected Publications:**

1. Maidur, S. R., Ekbote, A. N., Sharon, V. V., **Rajkumar, M. A.**, Patil, P. S., Soma, V. R., ... Shankar, M. K. (2025). An extensive investigation of structural, linear, and ultrafast third-order nonlinear optical properties of a novel trimethoxy anthracene chalcone: Experimental and DFT studies. *Optical Materials*, 159, 116531. <https://doi.org/10.1016/j.optmat.2024.116531>
2. Muthu, M. S., **Raj Kumar, M. A.**, Ajith, P., Ravi, S. A., and Patrick, F. (2025). Preparation and characterization studies of nano graphene oxide/manganese oxide (GO/Mn<sub>3</sub>O<sub>4</sub>) nano composite suitable for supercapacitor application. *Journal of Materials Science: Materials in Electronics*, 36(13). <https://doi.org/10.1007/s10854-025-14644-y>
3. Vadhana Sharon, V., Maidur, S. R., **Ambrose Rajkumar, M.**, Barthwal, S., and Jahagirdar, J. R. (2025). Femtosecond nonlinear optical and antibacterial studies of *P. stenopetala* mediated ZnO nanoparticles. *Journal of Optics*. <https://doi.org/10.1007/s12596-025-02717-4>