



Dr. Yoosaf Karuvath

Professor

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<http://scholar.google.com/citations?user=eWI9jBAAAAAJ>

<http://www.researcherid.com/rid/A-3561-2012>

<https://www.scopus.com/authid/detail.uri?authorId=12645650600>

Dr. Yoosaf Karuvath carried out his Ph.D. work at CSIR-NIIST, Thiruvananthapuram under the guidance of Dr. K. George Thomas and received the Ph. D. degree from Cochin University of Science and Technology in 2009. He also served as an Indo-Italian exchange Fellow at ISOF-CNR, Bologna, Italy during the period May 2007 – July 2007), CNR-ISOF, Bologna, Italy. Immediately after PhD, he moved to Italy with Marie-Curie post-doctoral fellowship to work in the Dr. Nicola Armaroli's group. Later he was appointed as a Researcher Level III in the same research group. In 2011 he moved to India and joined as a Scientist at CSIR-National Institute for Interdisciplinary Science and Technology Thiruvananthapuram. In 2022, he joined as Professor at the Department of Applied Chemistry, Cochin University of Science and Technology, Kochi. His current research interests include Raman spectroscopy, Surface Enhanced Raman spectroscopy, spectroscopic devices and methodologies for sensing and diagnosis, and organic solar cells.

Award and Fellowships

**2020: CSIR Technology Award for Best Innovation in 2020**

**2009: Marie-Curie Post doctoral fellowship**

**2008: Marie-Curie Post doctoral fellowship**

**2005: CSIR Senior Research Fellowship**

**2002: CSIR Junior Research Fellowship**

**2002: Secured a GATE score of 88.2 %**

Teaching

Photochemistry

Surface Chemistry

## Publications

1. S. Pulassery, B. Abraham, N. Ajikumar, A. Munnilath, K. Yoosaf  
Rapid Iodine Value Estimation Using a Handheld Raman Spectrometer for On-Site, Reagent-Free Authentication of Edible Oils  
*ACS Omega*, **2022**, 7, 9152–9163, DOI: [10.1021/acsomega.1c05123](https://doi.org/10.1021/acsomega.1c05123)
2. R. Haridas, J. Velore, S. C. Pradhan, A. Vindhysarumi, K. Yoosaf, S. Soman, K. N. N. Unni , A. Ajayaghosh  
“Indoor light-harvesting dye-sensitized solar cells surpassing 30% efficiency without co-sensitizers”  
*Mater. Adv.*, **2021**, 2, 7773–7787; DOI: [10.1039/d1ma00829c](https://doi.org/10.1039/d1ma00829c)
3. M. Sajitha, B. Abraham, R. B. Nelliyl, K. Yoosaf  
“Chemically Etched Nanoporous Copper and Galvanically Displaced Silver Nanoflowers for SERS Sensing”  
*ACS Appl. Nano Mater.*, **2021**, 4, 10038-10046; DOI: [10.1021/acsanm.1c01089](https://doi.org/10.1021/acsanm.1c01089)
4. N. Emmanuel, R. Nair, B. Abraham, K. Yoosaf  
“Fabricating a Low-Cost Raman Spectrometer to Introduce Students to Spectroscopy Basics and Applied Instrument Design”  
*J. Chem. Educ.*, **2021**, 98, 2109–2116; DOI: [10.1021/acs.jchemed.0c01028](https://doi.org/10.1021/acs.jchemed.0c01028)
5. S. Gao, B. Balan, K. Yoosaf, F. Monti, E. Bandini, A. Barbieri, N. Armaroli  
“Highly efficient luminescent solar concentrators based on benzoheterodiazole dyes with large Stokes’ shifts”  
*Chem. Eur. J.* **2020**, 26, 11013-11023; DOI: [10.1002/chem.202001210](https://doi.org/10.1002/chem.202001210)  
-Published with cover feature article (S Gao, B Balan, K Yoosaf, F Monti, E Bandini, A Barbieri, N Armaroli *Chem. Eur. J.*, **2020**, 26 (48), 10906-10906 (DOI: [10.1002/chem.202003050](https://doi.org/10.1002/chem.202003050)))



6. N. Emmanuel, R. Haridas, S. Chelakkara, R. B. Nair, A. Gopi, M. Sajitha, K. Yoosaf  
*"Smartphone Assisted Colourimetric Detection and Quantification of Pb<sup>2+</sup> and Hg<sup>2+</sup> Ions Using Ag Nanoparticles from Aqueous Medium"*  
*IEEE SENSORS JOURNAL*, **2020**, *20*, 8512 - 8519; [DOI: 10.1109/JSEN.2020.2984580](https://doi.org/10.1109/JSEN.2020.2984580)

### **2018**

7. A. Rana, C. Sharma, D. D. Prabhu, M. Kumar, K. Yoosaf, S. Das, S. Chand, R. K. Singh  
*"Revealing charge carrier dynamics in squaraine:[6, 6]-phenyl-C 71-butyrac acid methyl ester based organic solar cells"*  
*AIP Advances*, **2018**, *8*, 045302; [DOI: 10.1063/1.5018253](https://doi.org/10.1063/1.5018253)
8. A. Gopi, M. Sajitha, R. Haridas, L. Varghese, K. Yoosaf  
*"Cooperative and FRET-Assisted Brightness Enhancement in Oligo(phenylene ethynylene): Quantum Dot Organic–Inorganic Nanohybrids"*  
*Chem. Asian J.* **2018**, *13*, 1492 – 1499; [DOI : 10.1002/asia.201800328](https://doi.org/10.1002/asia.201800328)

### **2016**

9. A. Gopi, S. Lingamoorthy, S. Soman, K. Yoosaf, R. Haridas, S. Das  
*"Modulating FRET in Organic–Inorganic Nanohybrids for Light Harvesting Applications"*  
*J. Phys. Chem. C* **2016**, *120*, 26569-26578; [DOI: 10.1021/acs.jpcc.6b09867](https://doi.org/10.1021/acs.jpcc.6b09867)
10. M. Sajitha, A. Vindhysarumi, A. Gopi, K. Yoosaf  
*"Shape controlled synthesis of multi-branched gold nanocrystals through a facile one-pot bifunctional biomolecular approach"*  
*RSC Adv.* **2015**, *5*, 98318-98324; [DOI: 10.1039/C5RA19098C](https://doi.org/10.1039/C5RA19098C)
11. A. Gopi, A. Vindhysarumi, K. Yoosaf  
*"Electrostatically driven self-assembly of CdTe nanoparticles with organic chromophores probed via Ham effect"*  
*RSC Adv.* **2015**, *5*, 47813-47819; [DOI: 10.1039/c5ra08334f](https://doi.org/10.1039/c5ra08334f)