Faculty Profile

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Research Interests

- Light-Matter Interaction, Novel Optical Materials
- Photonics
- Physics Teaching

Publications

- List of Publications
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Research and Results Page

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Books and Chapters

(*Book*) **Essentials of Nonlinear Optics,** YVGS Murti and C Vijayan, Wiley (International); Indian Students Edition by Ane Books; ISBN: 978-1-118-90106-9 (2014)

(*Book*) **Modified Photonic Processes in Dielectric-Plasmonic Random Media**, Bingi J and C. Vijayan, LAP Lambert Academic Publishing; ISBN-13: 978-3659788529 (2015)

(*Chapter*) Photoacoustic Based Surface Plasmon Resonance Spectroscopy: An Investigation, K. Sathiyamoorthy, C. Vijayan and V.M. Murukeshan, *in book* **Plasmonics - Principles and Applications**, Ed. Ki Young Kim, ISBN 978-953-51-0797-2, InTech, DOI: 10.5772/52545

(*Chapters*) in Book **A Textbook of Nanoscience and Nanotechnology**, Ed. T. Pradeep, ISBN-10: 1259007324, Tata McGraw-Hill Education (2003)

Selected Recent Publications

Highly efficient surface enhanced Raman scattering with ZnS@Fe3O4@Ag composite structures as probes
RV Nair, VS Gummaluri, P K Gayathri, C Vijayan
Materials Research Express **4** 015025 (2017)

Optimization of macropore evolution towards high photocatalytic activity enhancement in meso/macro porous Anatase TiO2
RV Nair, PK Gayathri, VS Gummaluri, C Vijayan
Materials Research Express **4** (1), 016201 (2017)

Design and Optimization of Novel ZnS-Metal Core-Shell Random Structures for Light Harvesting-a Computational Study
RV Nair, K Dileep, VS Gummaluri, C Vijayan
Plasmonics, 1-8 (online 2017)

Time dependent Bloch mode transmittance in self-assembled random photonic crystal for photonic time delay switching

J Bingi, RV Nair, C Vijayan
Optical Materials 64, 95-99 (2017)

Plasmon-Assisted Enhancement and Tuning of Optical Properties in β indium sulphide quantum dots
AR Warrier, J Bingi, C Vijayan
Plasmonics 11 (4), 953-961 (2016)

FRET controlled photoluminescence in β-In2S3 microflower-Au nanoparticle ensemble
AR Warrier, C Parameswaran, J Bingi, C Vijayan
Materials Research Express 3 (6), 065016 (2016)

A novel and efficient surfactant-free synthesis of Rutile TiO 2 microflowers with enhanced photocatalytic activity
RV Nair, M Jijith, VS Gummaluri, C Vijayan
Optical Materials 55, 38-43 (2016)

Asymmetric transmission and optical low-pass filtering in a stack of random media with graded transport mean free path
J Bingi, M Hemalatha, RW Anita, C Vijayan, VM Murukeshan
Optical Materials 49, 15-20 (2015)

Slow Down of Charge Transfer Owing to Auger Recombination and Two-Photon Action Cross-section of CdS-CdSe-CdS Segmented Nanorods, R Subha, V Nalla, EJQ Lim, C Vijayan, BBS Huang, WS Chin, W Ji

ACS Photonics 2(1) 43 (2015)

Plasmonically Tunable Blue-Shifted Emission from Coumarin 153 in Ag Nanostructure Random Media:
J Bingi, S Vidhya, AR Warrier, C Vijayan

Plasmonics 9 (2), 349-355 (2014)

Visible-light driven photocatalytic activity of β-indium sulfide (In2S3) quantum dots embedded in Nafion matrix , R Sumi, AR Warrier, C Vijayan

Journal of Physics D: Applied Physics 47 (10), 105103 (2014)

Enhancement of photoluminescence from defect states in ZnS random photonic crystal: An effect of electronic and photonic mode coupling, J Bingi, AR Warrier, C Vijayan

Journal of Applied Physics 115 (4), 043105 (2014)

Efficient photoluminescence of Mn2+-doped ZnS quantum dots excited by two-photon absorption in near-IR window II , R Subha, V Nalla, JH Yu, SW Jun, K Shin, T Hyeon, C Vijayan, W Ji

The Journal of Physical Chemistry C 117 (40), 20905-20911 (2013)

Sequential electrochemical unzipping of single-walled carbon Nanotubes to graphene ribbons revealed by in situ Raman spectroscopy and imaging ,R John, DB Shinde, L Liu, F Ding, Z Xu, C Vijayan, VK Pillai, T Pradeep

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Raman mode random lasing in ZnS-β-carotene random gain media Bingi, J., Warrier, A.R., Vijayan,
***Applied Physics Letters*, 102(22)**, 221105(2013)

Taking light for a walk
Anita R. Warrier, C. Vijayan
Resonance, ***(Science Magazince of Indian Acad. of Sci.),*** **18(11),** 1015 (2013)
Enhanced optical nonlinearity in β-AgVO3 nanobelts on decoration with Ag nanoparticles, Manas R. Parida, C. Vijayan, C. S. Rout, C. S. S. Sandeep, R Philip
***Applied Physics Letters*, 100(12)**, 121119 (2012)

Ultrafast nonlinear optical response of carbon nanotubes functionalized with water soluble porphyrin Gupta, J., Vijayan, C., Maurya, S.K., Goswami, D.
Optics Communications, 285(7), 1920-1924 (2012)
Efficient ultrafast optical limiting using single walled carbon nanotubes functionalized noncovalently with free base and metalloporphyrins, Gupta, J., Vijayan, C., Maurya, S.K., Goswami, D**.**
Journal of Applied Physics, 109 (11), 113101, (2011).
Single-and few-layer graphene growth on stainless steel substrates by direct thermal chemical vapor deposition John, R., Ashokreddy, A., Vijayan, C., Pradeep, T
Nanotechnology, 22 (16), 165701, (2011).
Effect of ellipticity on Hanle electromagnetically induced absorption and transparency resonances with

longitudinal and transverse magnetic fields Nibedita Ram, M. Pattabiraman, and C. Vijayan
Phys. Rev. A **82,** 033417 (2010)

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