

Dr. Chandrasekharan K

Assistant Professor

Laser and Nonlinear Optics Lab
Department of Science and Humanities
National Institute of Technology Calicut
Kerala, India- 673 601



ACADEMIC QUALIFICATIONS

M.Sc (Physics), CUSAT (1987)

Ph.D (Physics) IIT Madras (1995)

CURRENT RESEARCH ACTIVITIES

Nonlinear Optical Properties of Photonics Materials, Electron Spin Resonance (ESR) study of transition metal ions and Free radicals

RESEARCH GUIDANCE

Dr John Kiran has completed Ph.D in the field of nonlinear optics at NITK Surathkal.

Three persons working for their Ph.D under my guidance in the field of nonlinear optics.



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TEACHING AND RESEARCH EXPERIENCE

2005 - Assistant Professor in Physics- Department of Science. and Humanities, National Institute of Technology Calicut

2002 - 2005 Assistant Professor in Physics- National Institute of Technology , Surathkal, Karnataka - India.

2000 (May-June) Visiting Scientist at RSIC, IIT Madras.

1995 - 2002 - Lecturer in Physics, National Institute of Technology, Surathkal, Karnataka

1990-1995 - Research Fellow, Department of Physics, IIT-Madras (Under Govt. India's Fellowship)

1987-1988 - Lecturer in Physics, Mahathma Gandhi Govt. College, Mahe.Pondichery State

SPONSORED PROJECTS

ONGOING

Linear and nonlinear optical properties of metal nano-colloids in polymers,
DST- Govt of India - 20.40 lakhs –NIT Calicut

*Development of Laser and Non-linear Optics laboratory in the Department of
Science and Humanities*
- NITC Project Coordinator -TEQIP (30 Lakhs)

COMPLETED

Optical Sensors With High-Speed Optical Limiting Materials - MHRD (Govt. of India)
under R & D scheme, NITK (6 lakhs)

Identification of New materials for Photonics applications - DST (Govt.of India)
under Young Scientist Scheme, NITK (4.05 Lakhs)

Teaching and Research in the area of Material Science DST
under FIST- Co-investigator, NITK (30 Lakhs)



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RECENT PUBLICATIONS

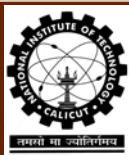
Book

John Kiran A. K Chandrasekharan , Balakrishna Kalluraya and H.D. Shashikala Chemical Physics Research Trends (Horizons in World Physics, Volume 252) Nova Publishers, USA, 2007 (ISBN: 1-60021-554-8).

[One article: Chalcones Possible New Materials for Third-Order Nonlinear Optics , is contributed]

Journals

1. Seetharam Shettigar Chandrasekharan K, and G.Umesh “Studies on nonlinear optical parameters of bis-chalcone derivatives doped polymers” *Polymer* (2006) 47, 3565-3567
2. A. John Kiran , Chandrasekharan K , Satheesh Rai Nooji , H.D. Shashikala , G. Umesh & Balakrishna Kalluraya “ $\chi^{(3)}$ measurements and optical limiting in dibenzylideneacetone and its derivatives.” *Chemical Physics* (2006) 324, 699-704
3. Udayakumar D, John Kiran A, A.Vasudeva Adhikari, Chandrasekharan K, G. Umesh & H.D Shashikala . “Third Order Nonlinear Optical Studies of Newly Synthesized Polyoxadiazoles Containing 3,4-dialkoxythiophenes using Z-scan and Degenerate Four Wave Mixing Methods” *Chemical Physics*. (2006) 331 125-130
4. John Kiran A, Udayakumar D, Chandrasekharan K, A.V. Adhikari, H.D. Shashikala “Z-scan and Degenerate Four Wave Mixing studies on newly synthesized copolymers containing alternating substituted thiophene and 1,3,4-oxadiazole units” *J of Physics B At.Mol.Opt.Physics* (2006) 39 3747-3756
5. H J Ravindra. A. John Kiran, Chandrasekharan K, H.D Shashikala & S.M Dharmaprakash “Third order nonlinear optical properties and optical limiting in donor/acceptor substituted 4'-methoxy chalcone derivatives” *Applied Physics B Laser and Optics* (2007), 88, 105-110
6. Seetharam Shettigar; G. Umesh; K.Chandrasekharan; Balakrishna Kalluraya “Third order nonlinear optical properties and two photon absorption in newly synthesized phenyl sydnone doped polymer” *Synthetic Metals* 157 (2007) 142-146
7. John Kiran A , Udayakumar D., Chandrasekharan K., A.V. Adhikari, H.D. Shashikala & Reji Philip “Nonlinear Optical Studies of a Newly Synthesized Copolymer Containing Oxadiazole and Substituted Thiophenes” *Optics Communications* (2007) 271 236-240
8. John Kiran A., Mithun Ashok , Chandrasekharan.K , B.Shivarama Holla H.D.Shashikala, G.Umesh. “Nonlinear Optical Studies of 1-3-diaryl-propenones containing 4-methylthiophenyl moieties” *Optics Communications* (2007) 269 235-240



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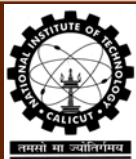
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RECENT PUBLICATIONS...

9. Udayakumar D, John Kiran A, A.V. Adhikari, Chandrasekharan K, & H.D Shashikala “Synthesis and nonlinear optical characterization of copolymers containing alternating 3,4-dialkoxythiophene and (1,3,4-oxadiazolyl)benzene units”. *J of Applied Polymer Science* 106 (2007) 3033
- 10.H.J.Ravindra, A.John Kiran, Satheesha Raj Nooji, S.M.Dharmaprakash, Chandrasekharan.K, Balakrishna Kalluraya, Fabian Rotermund “Synthesis, crystal growth and characterization of phase matchable nonlinear optical single crystal; p-chloro dibenzylideneacetone” *J of Crystal Growth* 310 (2008) 2543-2549
11. Seetaharam Shettigar, G.Umesh, K.Chandrasekharan B.Sarojani, and B.Naryanan “Studies on Third Order Optical properties of Chalcone derivatives in Polymer” *J of Optical materials* 30 (2008) 1297 -1303
- 12.A.John Kiran, Satheesh Rai Nooji, D.Udayakumar. Chandrasekharan K., B.Kalluraya, Reji Philip , H.D. Shashikala & A.V. Ahdikari “Nonlinear optical properties p-(N,N-dimethylamino) dibenzylideneacetone doped polymer” *Material Research Bullatin* (2008) 43, 707-713
- 13.Anthony John Kiran, Nooji Satheesh Rai, Keloth Chandrasekharan, Balakrishna Kalluraya and Fabian Rotermund “Substituent dependence of third-order optical nonlinearity in chalcone derivatives” *Jpn Journal of Applied Physics* (accepted for publications).



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