

# SandeepKumar Maurya

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## Brief Profile

Name	:	Dr. Sandeep Kumar Maurya
Date of Birth	:	14/02/1983
Educational Qualification	:	
• Ph.D.	:	awarded
• M.Tech	:	
• B.Tech	:	
Work Experience	:	
• Teaching	:	1 years and 8 months
• Research	:	3 years and 10 months
E-mail ID	:	<a href="mailto:sandeep.maurya@miet.ac.in">sandeep.maurya@miet.ac.in</a>
Contact No.	:	9451620134
Area of Interest	:	Nonlinear Optics, Ultrafast dynamics and Nanophotonics
Teaching	:	
• Subjects Taught at UG Level	:	Engineering. Chemistry
• Subjects Taught at PG Level	:	
Research Publications	:	
• Journals	:	28
• Conferences	:	03
• Book Chapters	:	nil
No. of National/International Conferences attended/ Paper Presented	:	08
STC/FDP/Summer/Winter Schools/Workshops /Seminars attended	:	00
Awards/Honors	:	UGC – CSIR NET

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## PUBLICATIONS

1. S. K. Maurya, R. A. Ganeev, A. Rout, C. Guo\*, Influence of PVP Polymer Concentration on Nonlinear Absorption in Silver Nanoparticles at Resonant Excitation, Applied Physics A (Accepted), DOI: 10.1007/s00339-019-3208-2
2. S. K. Maurya, M. Venkatesh, R. A. Ganeev, C. Guo\*, *Study of various material particles by third harmonic generation method based on laser pulse induced plasma*, Optical Materials, 2019, (Accepted, in press, DOI: 10.1016/j.optmat.2019.109423)
3. S. K. Maurya, D. Yadav, and D. Goswami\*, *Effect of femtosecond laser pulse repetition rate on nonlinear optical properties of organic liquids*, Peer J Physical Chemistry, 2019 1:e1 <https://doi.org/10.7717/peerj-chem.1>
4. M. Venkatesh, R. A. Ganeev, K. S. Rao, G. S. Boltaev, K. Zhang, A. Srivastava, J. K. Bindra, S. Singh, Vyacheslav V. Kim, S. K. Maurya, G. F. Strouse, N.S. Dalal, C. Guo\*, *Influence of gadolinium doping on low- and high-order nonlinear optical properties and transient absorption dynamics of ZnO nanomaterials*, Optical Materials, 2019, **95**, 109241.
5. S. K. Maurya, A. Rout, R. A. Ganeev, and C. Guo\*, *Effect of Size on the Saturable Absorption and Reverse Saturable Absorption in Silver Nanoparticle and Ultrafast, Dynamics at 400 nm*, Journal of Nanomaterials, 2019. **2019**, 9686913
6. K. S. Rao, R. A. Ganeev, K. Zhang, Y. Fu, G. S. Boltaev, S. K. Maurya, and C. Guo\*, *Comparative analyses of optical limiting effects in metal nanoparticles and perovskite nanocrystals*, Optical Materials, 2019, **92**, 366–372.
7. Y. Fu, R. A. Ganeev\*, G. S. Boltaev, S. K. Maurya, V. V. Kim, C. Zhao, A. Rout, and C. Guo\*, *Low- and high-order nonlinear optical properties of Ag<sub>2</sub>S quantum dot thin films*, Nanophotonics, 2019, **8**, 849–858.
8. R. A. Ganeev\*, G. S. Boltaev, K. Zhang, S. K. Maurya, M. Venkatesh, Z. Yu, V. V. Kim, P. V. Redkin, and C. Guo\*, *Role of carbon clusters in high-order harmonic generation in graphite plasmas*, OSA continuum. 2019, **2**, 1510–1523.
9. A. Rout, G. S. Boltaev, R. A. Ganeev\*, Y. Fu, S. K. Maurya, V.V. Kim, K. S. Rao, and C. Guo\*, *Nonlinear optical studies of gold nanoparticle films*, Nanomaterials, 2019, **291**, 1-10.IF= **3.504**
10. K. Zhang, R. A. Ganeev\*, K. S. Rao, S. K. Maurya, G. S. Boltaev, P. S. Krishnendu, Z. Yu, W. Yu, Y. Fu and C. Guo\*, *Interaction of pulses of different duration with chemically prepared silver nanoparticles: analysis of optical nonlinearities*, Journal of Nanomaterials, **2019**, 2019, **6056528**.
11. Y. Fu, R. A. Ganeev\*, C. Zhao, K. S. Rao, S. K. Maurya, W. Yu, K. Zhang, C. Guo\*, *Ag<sub>2</sub>S quantum dots in the fields of picosecond and femtosecond UV and IR pulses: optical limiting, nonlinear absorption, and refraction properties*, Applied Physics B **2019**, **125**, 1(doi.org/10.1007/s00340-018-7110-y).
12. K. Zhang, S. K. Maurya, R. A. Ganeev\*, K. S. Rao and C. Guo\*, *Ablated nickel nanoparticles: third-harmonic generation and optical nonlinearities*, Journal of Optics, **2018**, **20**, 125502 (1-11).
13. G. S. Boltaev, R. A. Ganeev\*, P. S. Krishnendu, S. K. Maurya, V. Redkin, K. S. Rao, K. Zhang, Chunlei Guo, *Strong third-order optical nonlinearities of Ag nanoparticles synthesized by laser ablation of bulk silver in water and air*, Applied PhysicsA **2018**, **124**, 766.
14. S. K. Maurya, T. Nakajima\*, K. Mizobata, H. Zen, T. Kii, H. Ohgaki, *Real-time observation of structural change in semi-crystalline polymer films through mid-IR transmission spectroscopy: determination of instantaneous film temperature during recrystallization*, Optics Express **2018**, **26**, 21615–21625.
15. S. K. Maurya, Y.Uto, K.Kashihara, N.Yonekura,T. Nakajima\*, *Rapid formation of nanostructures in Au films using a CO<sub>2</sub> laser*, Applied Surface Science **2018**, **427**, 961–965.

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16. M. A. Wani, M. D. Pandey\*, R. Pandey, S. K. Maurya, D. Goswami, *A Dual-Signaling Ferrocene-Pyrene Dyad: Triple-Mode Recognition of the Cu(II) Ions in Aqueous Medium*, Journal of Fluorescence, **2017**, 27, 2279–2286.
17. S. K. Maurya, C. Dutta, D. Goswami\*, *Concentration Dependent Approach for Accurate Determination of Two-Photon Absorption Cross-Section of Fluorescent Dye Molecule*, Journal of Fluorescence, **2017**, 27, 1399–1403.
18. Y. Uto, K. Mizobata, S. K. Maurya, T. Akiyama, T. Nakajima\*, *Morphological change of crystalline polymer films by annealing: substrate- and heating/cooling-rate-dependent surface roughness*, Surface and Interface Analysis, **2017**, 49, 577-583.
19. S. K. Maurya, D. Das, D. Goswami\*, *Probing Intermolecular Interactions in Binary Liquid Mixtures Using Femtosecond Laser-Induced Self-Defocusing*, Applied Spectroscopy, **2016**, 70, 1655-1661.
20. S. K. Maurya, D. Yadav, D. Goswami\*, *Investigating two-photon induced fluorescence in Rhodamine-6G in presence of Cetyl- trimethyl-Ammonium- Bromide*, Journal of Fluorescence, **2016**, 26, 1573-1577.
21. S. K. Maurya, D. Goswami\*, *Probing the very weak interactions in binary liquids with femtosecond two-photon induced fluorescence*, Science Letter Journal. **2015**, 4, 136(1-4).
22. M. Roy, T. S. Kusurkar, S. K. Maurya, S. K. Meena, S. K. Singh, N. Sethy, K. Bhargava, R. K. Sharma, D. Goswami\*, S. Sarkar, M. Das\*, *Graphene oxide from silk cocoon: a novel magnetic fluorophore for multi-photon imaging*, 3 Biotech. **2014**, 4, 67-75.
23. J. Gupta, C. Vijayan\*, S. K. Maurya, D. Goswami, *Ultrafast nonlinear optical response of carbon nanotubes functionalized with water-solubleporphyrin*, Optics Communications, **2012**, 285, 1920-1924.
24. V. Chandrasekhar\*, M. D. Pandey, S. K. Maurya, Pratik Sen, and D. Goswami\*, *Two-Photon-Absorption Technique for Selective Detection of Copper (II) Ions in Aqueous Solution Using a Dansyl-Pyrene Conjugate*, Chemistry-An Asian Journal, **2011**, 6, 2246-2250.
25. J. Gupta, C. Vijayan\*, S. K. Maurya, D. Goswami, *Efficient ultrafast optical limiting using single-walled carbon nanotubes functionalized noncovalently with free base and metalloporphyrins*, Journal of Applied Physics, **2011**, 109, 113101 (1-6) and has been selected for the July 2011 issue of Virtual Journal of Ultrafast Science.
26. J. Gupta, C. Vijayan\*, S. K. Maurya, D. Goswami, *An efficient nanocomposite based on carbon nanotubes functionalized with a fluorescent ink for ultrafast optical limiting*, Materials Letters, **2011**, 65, 915–917.
27. I. Bhattacharyya, A. Dutta, S. Ashtekar, S. K. Maurya, D. Goswami\*, *Decoding coherent information in femtosecond shaped laser pulses*, Current Science. **2010**, 99, 476-484.
28. V. Chandrasekhar\*, R. Azhakar, B. Murugesapandian, T. Senapati, P. Bag, M. D. Pandey, S. K. Maurya, D. Goswami\*, *Synthesis, structure, and two-photon absorption studies of a phosphorus-based trishydrazone ligand (*S*) $P[N(Me)N=CH-C_6H_3-2-OH-4-N(CH_2CH_3)_2]_3$  and its metal complexes*, Inorganic Chemistry, **2010**, 49, 4008-4016.

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## **CONFERENCE PROCEEDINGS:**

1. Two-Photon Absorption Study of Copper Ion Sensor Based on Conjugated Pyrene And Coumarin Schiff Base, S. K. Maurya, M. D. Pandey, V. Chandrasekhar, D. Goswami, PHOTONICS-2010: International Conference on Fiber Optics and Photonics, December 11-15, 2010, IIT Guwahati, India.
2. Study of Self Defocusing in Liquids using Single Beam Z-scan with High Repetition Rate Laser Pulses, S. K. Maurya, S. Singhal, and D. Goswami, PHOTONICS-2012: International Conference on Fiber Optics and Photonics, December 9-12, 2012, IIT Madras, Chennai, India.
3. Time-resolved detection of a structural change in dye-doped polymer films using mid-infrared free-electron laser pulses, S. K. Maurya, K. Mizobata, T. Nakajima, H. Zen, T. Kii, H. Ohgaki, PHOTONICS-2016: International Conference on Fiber Optics and Photonics, December 5-8, 2016, IIT Kanpur, Kanpur, India.

## **CONFERENCES, SYMPOSIA, WORKSHOPS& SCHOOLS ATTENDED:**

- ❖ Participated in the **Workshop on Coherent Control of Optical Phenomenon** organized by the Dept. of Physics, IIT Kanpur during 9-10 July 2007.
- ❖ Participated in the **International School and Conference on Quantum Information(ISCQI-2008)** held during March 03-12, 2008 at the Institute of physics, Bhubneshwar, Odisha.
- ❖ Participated in the **Spectroscopy and Dynamics of Molecules and Cluster (SDMC-2009)** held during February 20-22, 2009 at Mandarmoni, West Bengal.
- ❖ Participated in the **PHOTONICS-2010: International Conference on Fiber Optics and Photonics** held during December 11-15, 2010 at the IIT Guwahati, Assam.
- ❖ Participated in the **Third Asian Spectroscopy Conference 2011 (ASC 2011)** held from November 28 to December 1, 2011, at the Xiamen, China.
- ❖ Participated in the **PHOTONICS-2012: International Conference on Fiber Optics and Photonics** held during December 9-12, 2012 at the IIT Madras, Chennai.
- ❖ Participated in the **15th NSC and 7th CRSI-RSC: Chemical Research Society India** held from January 31 to February 03, 2013 at the BHU Varanasi. Also presented a poster there.
- ❖ Participated in the **PHOTONICS-2016: International Conference on Fiber Optics and Photonics** held during December 5-8, 2016 at the IIT Kanpur, Kanpur. Also presented a poster there.

## **PROJECTS:**

- ❖ M.Sc. project on **Charge Transfer Interactions in 4-(4-dimethylphenylazo)-benzenepyrrolidinofullerene** under Prof. Archita Patnaik (IIT Madras) from August 2005 to April 2006.

## **ORAL PRESENTATIONS:**

- ❖ Gave a talk on **Charge Transfer Complexes** in the Department of Chemistry, IIT Madras, Chennai in 2006.

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- ❖ Gave a talk on **Charge Transfer Interactions in 4-(4-dimethylphenylazo)-benzenepyrrolidinofullereneas** a part of the 2-year M. Sc. Project defense under the Department of Chemistry, IIT Madras in 2006.
- ❖ Gave a talk on **Coherent Control in Two-PhotonProcessas** a Graduate Seminar (State of the art Seminar) under Department of Chemistry, IIT Kanpur in 2007.
- ❖ Gave a talk on **Modulation of Nonlinear Optical Properties of Molecules in Condensed Phase with Femtosecond Laser Pulsesas** an Open Seminar under Department of Chemistry, IIT Kanpur in 2013.
- ❖ Gave an oral presentation on **Time-resolved detection of a structural change in dye-doped polymer films using mid-infrared free-electron laser pulsesas** a contributed paper in photonics 2016 conference at IIT Kanpur.

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