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Research Interests

- ✚ Development of new type photochromic and photoswitchable organic materials and their applications
- ✚ Design and synthesis of photoacidgenerators (PAGs) and photoresponsive polymers
- ✚ Fabrication of photoresponsive fluorescent materials
- ✚ Synthesis of functionalized AuNPs and their applications
- ✚ Design and synthesis of photoresponisve nanocarrier for control release of active molecules

PUBLICATIONS:

1. **Mohammed Ikbal**, Avijit Jana, N.D. Pradeep Singh, Rakesh Banerjee, Dibakar Dhara, “Photoacid generators (PAGs) based on N-acyl-N-phenylhydroxylamines for carboxylic and sulfonic acids”, *Tetrahedron*, **2011**, *67*, 3733-3742.
2. **Mohammed Ikbal**, Rakesh Banerjee, Sanghamitra Atta, Avijit Jana, Dibakar Dhara, Anakuthil Anoop, N. D. Pradeep Singh, “Development of 1-Hydroxy-2(1H)-quinolone based photoacid generators and photoresponsive polymer surfaces”, *Chem. Eur. J.* **2012**, *18*, 11968–11975.
3. Avijit Jana, **Mohammed Ikbal**, N. D. Pradeep Singh, “Perylen-3-ylmethyl Fluorescent Photoremovable Protecting Group (FPRPG) for carboxylic acids and alcohols”, *Tetrahedron*, **2012**, *68*, 1128-1136.
4. Avijit Jana, Biswajit Saha, **Mohammed Ikbal**, Sudip Kumar Ghosh. N. D. Pradeep Singh, “1-(Hydroxyacetyl)pyrene a new fluorescent phototrigger for cell imaging and caging of alcohols, phenol and adenosine”, *Photochem. Photobiol. Sc.*, **2012**, *11*, 1558-1566.
5. Sanghamitra Atta, **Mohamed Ikbal**, Ashutosh Kumar, N. D. Pradeep Singh, “Application of photoremovable protecting group for controlled release of plant growth regulators by sunlight”, *J. Photochem. Photobiol B. Biology*, **2012**, *111*, 39-49.
6. **Mohammed Ikbal**, Rakesh Banerjee, Sanghamitra Atta, Dibakar Dhara, Anakuthil Anoop, and N. D. Pradeep Singh, “Synthesis, Photophysical and Photochemical

Properties of Photoacid Generators Based on N-Hydroxyanthracene-1,9-dicarboxyimide and Their Application toward Modification of Silicon Surfaces”, *J. Org. Chem.*, **2012**, 77, 10557–10567.

7. Sanghamitra Atta, **Mohammed Ikbal**, Nishitha Boda, Samiran S. Gauri and N. D. Pradeep Singh, “Photoremoveable protecting groups as controlled-release device for sex pheromone”, *Photochem. Photobiol. Sci.*, **2013**, 12, 393-403.
8. Pradeep N. D. Singh, Avijit Jana, Biswajit Saha, Karthik S, Sharabani Barman, **Mohammed Ikbal** and Sudip Kumar Ghosh, “Fluorescent Photoremoveable precursors (acridin-9-ylmethyl)ester: Synthesis Photophysical, Photochemical and Biological applications”, *Photochem. Photobiol. Sci.*, **2013**, 12, 1041-1052.
9. Susanta Kumar Manna, Suresh Kumar Mondal, Atiur Ahmed, Arabinda Mandal, Atanu Jana, **Mohammed Ikbal**, Shubhankar Samanta and Jayanta K. Ray, “One-pot synthesis of highly fluorescent polycyclic benzimidazole derivatives”, *RSC Adv.*, **2014**, 4, 2474-2481.
10. **Mohammed Ikbal**, Biswajit Saha, Shrabani Barman, Sanghamitra Atta, Debranjan Banerjee, Sudip Kumar Ghosh, and N. D. Pradeep Singh, “Benzo[a]acridinyl methyl esters as pH Sensitive Fluorescent Photoactive precursors: Synthesis, Photophysical, Photochemical and Biological Applications”, *Org. Biomol. Chem.*, **2014**, 12, 3459-3469.
11. **Mohammed Ikbal**, Rakesh Banerjee, Shrabani Barman, Sanghamitra Atta, Dibakar Dhara and N. D. Pradeep Singh, “1-Acetylferroceneoxime based Photoacid Generators: Application towards sol-gel transformation and development of photoresponsive polymer for controlled wettability and patterned surfaces”, *J. Mater. Chem. C*, **2014**, 2, 4622-4630.
12. R. Sfez, E. Natan, Y. Bardavid, **M. Ikbal**, E. Arbeli, S. Arkin, I. Popov and Shlomo Yitzchaik, “Enzyme Mediated Encapsulation of Gold Nanoparticles by Polyaniline Nanoshell”, *Journal of Self-Assembly and Molecular Electronics*, **2015**, 3, 1-16.
13. Sanghamitra Atta, Amrita Paul, Rakesh Banerjee, Manoranjan Bera, **Mohammed Ikbal**, Dibakar Dhara and N. D. Pradeep Singh, “Photoresponsive polymers based on coumarin moiety for the controlled release of pesticide 2,4-D” *RSC Adv.*, **2015**, 5, 99968-99975.
14. Sanghamitra Atta, Manoranjan Bera, Tirthartha Chattopadhyay, Amrita Paul, **Mohammed Ikbal**, Mrinal K. Maiti and N. D. Pradeep Singh, “Nano-peptide formulation based on fluorescent organic photoresponsive nanoparticles: for controlled

release of 2,4-D and real time monitoring of morphological changes induced by 2,4-D in plant systems" *RSC Adv.*, **2015**, 5, 86990-86996.

15. Nina Gizzie, Richard Mayne, Shlomo Yitzchaik, **Mohammed Ikbal**, Andrew Adamatzky, "Living Wires—Effects of Size and Coating of Gold Nanoparticles in Altering the Electrical Properties of *Physarum polycephalum* and Lettuce Seedlings" *Nano LIFE*, **2016**, 6, 1650001.

Patent:

1. Sanghamitra Atta, Tirthartha Chattopadhyay, **Mohammed Ikbal**, Mrinal. K. Maiti and N. D. Pradeep Singh, "Nano-pesticide formulation based on fluorescent organic photoresponsive nanoparticles: for controlled release of 2,4-D and real time monitoring of morphological changes induced by 2,4-D in plant system", **No. 555/Kol/2013**.
2. Sanghamitra Atta, Rakesh Banerjee, **Mohammed Ikbal**, Dibakar Dhara, N. D. Pradeep Singh, "Photoresponsive polymers based on coumarin moiety for the controlled release of pesticide 2,4-D", **No. 867/Kol/2013**.

EDUCATION:

- ❖ Ph.D. in Organic Photochemistry, Indian Institute of Technology Kharagpur, Kharagpur, India, 2013.
- ❖ M.Sc. in Chemistry, Vidyasagar University, Midnapur, India, 2007.
- ❖ B.Sc. in Chemistry, Vidyasagar University, Midnapur, India, 2005.