

Ph.D. Open Seminar

Department of Chemistry, IISER Bhopal

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Topic : “Captivating Photophysics of 2,3-Naphthalimide Dyes Prompting Applications”

Date: June 14, 2017

Time: 4 pm

Venue: ABII-401

Abstract: The fascinating photophysical properties, ease of synthesis, and superior thermal and chemical stability of naphthalimide (NI) dyes have attracted immense attention for various applications in the fields of sensors, biomolecular imaging, organic electronics *etc.*¹ In literature, numerous reports are documented on the photophysical properties and applications of NI and 1,8-NI dyes.^{1,2} Besides, a few reports on 2,3-NI dyes are documented, thus yet to be explored.^{3,4} In this context, my doctoral research work starts with the aim to explore the photophysics of 2,3-NI dyes and their synthetic precursors towards applications.

In chapter-1, I will briefly introduce different kind of NI dyes and their various applications. Chapter-2 will describe the photophysics of a solvatochromic 2,3-naphthalene diester dye and its use for detection of CMC value for surfactants along with revealing the number of hydrophobic protein pockets present in BSA.⁶ In chapter-3a, I will discuss sensing of biogenic and primary amines by using an anhydride based 2,3-naphthalene anhydride dye (DMN-Anh).⁷ Later in chapter-3b, I will talk about the ability of DMN-Anh to probe the solvolysis reactions like alcoholysis and hydrolysis efficiently.⁸ In the following chapter, I will describe aggregation-induced emission properties of a new 2,3-naphthalimide dye (DMN-Bu) in presence of surfactants and tuning of the aggregation behavior by a supramolecular approach.⁹⁻¹⁰ In the final chapter, I will summarize all the findings and possible future prospects.

References:

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