

特別講演会
(JSPS 二国間交流事業共同研究・セミナー)

Prof. Ayyappanpillai Ajayaghosh

Director



CSIR-National Institute for Interdisciplinary Science and Technology, INDIA

演題：Self-assembled Functional Dyes and Their Properties

日時：平成 31 年 3 月 11 日（月）講演時間 15 時 00 分～16 時 30 分

場所：理学部 B 棟 305 号室

Ajayaghosh 先生は、合成、超分子、高分子材料、生体材料、機能性色素分野で大変有名な先生です。この度、JSPS 二国間交流事業共同研究・セミナー (Department of Science and Technology (DST) in India-JSPS; ホスト 大阪府立大学 八木繁幸 先生) の関係で来日し、本学にお越しいただける機会がございましたので、特別講演会を開催いたします。また、Ajayaghosh 先生は、Associate Editor of PCCP (RSC Journal), Senior editor of the Bulletin of the Chemical Society of Japan, Editorial/Advisory Boards: Chemistry – An Asian Journal, RSC Advances, ChemPhotoChem, Accounts of Chemical Research and ACS Omega も務めています。最新の超分子、高分子材料、生体材料、機能性色素分野の興味深いお話をしてくれると思います。多くの学生さん、教員の皆様のご来聴をお待ちしております。

連絡先：大山 陽介（内線：7689）

Self-assembled Functional Dyes and Their Properties

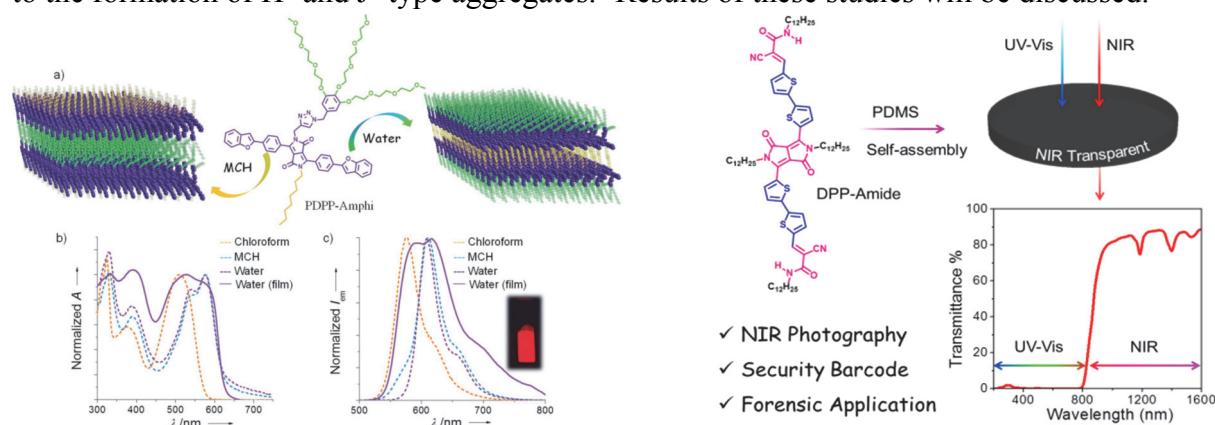
Ayyappanpillai Ajayaghosh

CSIR-National Institute of Interdisciplinary Science and Technology (CSIR-NIIST)

Trivandrum – 695 019, India

E-mail: ajayaghosh@niist.res.in

Self-assembly of functional molecules using noncovalent interactions results in supramolecular materials, through spontaneous and controlled pathways.¹⁻³ A variety of materials with diverse size, shape and properties can be prepared by self-assembly approach.^{1,2} Depending upon the nature of the molecular building blocks, the resultant soft materials can be fluorescent, stimuli responsive, optically active or electrically conducting and hence can be used for a variety of applications such as sensing, imaging, security etc. For example, earlier we described the use of fluorescent molecular assemblies as TNT sensors and as security labels.^{4,5} Recently, we have reported π -conjugated diketopyrrolopyrrole (**DPP**) based self-assembly with high fluorescence quantum yield and anisotropic charge carrier mobility.⁶ Subsequently, a **DPP-Amide** based supramolecular organogel have been prepared, which transmits NIR light beyond 850 nm due to the formation of H- and J- type aggregates.⁷ Results of these studies will be discussed.



Reference

1. A. Ajayaghosh, V. K. Praveen, *Acc. Chem. Res.* **2007**, *40*, 644.
2. S. S. Babu, V. K. Praveen, A. Ajayaghosh, *Chem. Rev.* **2014**, *114*, 1973.
3. R. D. Mukhopadhyay, A. Ajayaghosh, *Science* **2015**, *349*, 24.
4. K. K. Kartha, S. S. Babu, S. Srinivasan, A. Ajayaghosh, *J. Am. Chem. Soc.* **2012**, *134*, 4834.
5. R. Thirumalai, R. D. Mukhopadhyay, V. K. Praveen, A. Ajayaghosh, *Sci. Rep.* **2015**, *5*, 9842.
6. S. Ghosh, D. S. Philips, A. Saeki, A. Ajayaghosh, *Adv. Mater.* **2017**, *29*, 1605408.
7. S. Ghosh, S. Cherumukkil, C. H. Suresh, A. Ajayaghosh, *Adv. Mater.* **2017**, *29*, 1703783.