

高分子学会九州支部 外国人学者講演会

“Aggregation-Induced Emission (AIE): A Wonderland Full of Exoticism and Excitement”

The Hong Kong University of Science and Technology | HKUST

Department of Chemistry

Prof. Ben Zhong Tang

主催：高分子学会九州支部

日時：2018年4月12日（木）10:00-12:00

場所：九州大学伊都キャンパス

香港科技大学の Ben Zhong Tang 先生は、凝集することで強い発光を示す蛍光現象（Aggregation-Induced Emission, AIE）を発見された、世界的に著名な研究者です。本講演では AIE のメカニズムや、AIE を示す様々な化合物のご紹介、さらに光電デバイスやバイオイメージングへの展開についても御講演頂く予定です。皆様の多数のご参加をお待ちしております。

Abstract: Efficient luminescent materials hold great promise for high-tech applications in energy, environment, and healthcare, etc. The light emission of conventional luminophores is often weakened or quenched when the molecules are aggregated, which is notoriously known as aggregation-caused quenching (ACQ). Considering that luminophores are commonly used as solid or aggregate, strong solid-state emitters are highly desirable. In 2001, we discovered a kind of propeller-like molecules that showed opposite luminescence behavior to the ACQ effect: the aggregate formation turned on their light emission, changing them from weak fluorogens into strong emitters. We termed this novel phenomenon as aggregation-induced emission (AIE). Through detailed mechanistic study of the photophysical processes, restriction of intramolecular motion (RIM) was identified as the main cause of the AIE effect. Under the guidance of RIM mechanism, we have developed a great number of AIE luminogens (AIEgens) with emission colors covering the entire visible, even extending to UV and near-IR spectral region. We have also explored the intriguing applications of AIEgens in such areas as optoelectronic devices, chemo/biosensing, and biomedical imaging. In this lecture, I will share the excitement in studying this group of wonder molecular aggregates and in exploring their special applications.

Brief Resume: Prof. Ben Zhong Tang studied polymer science at and received his bachelor's degree from South China University of Technology, Guangzhou. He then continued his graduate study at Kyoto University, Japan, where he obtained his Master's and Ph.D. degrees. After postdoctoral research at University of Toronto, Canada, Professor Tang joined HKUST as an Assistant Professor in 1994, where he currently holds the Stephen K. C. Cheong Professorship of Science, as well as the Chair Professorship of Chemistry. He is spearheading the research on aggregation-induced emission (AIE), a topic ranked no. 2 in the areas of Chemistry and Materials Science by Thomson Reuters in its report on Research Fronts 2015.

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