

Second Laureate Fundamental Research

Project Title: Aggregation-Induced Emission

Researcher: Prof. Ben Zhong TANG

Country: China

Field: Chemistry

Scientific Affiliation: The Hong Kong University of Science and Technology



Abstract:

It has been generally recognized that chromophore aggregation usually weakens or quenches light emission. This notorious photophysical effect is practically harmful, as luminophores are commonly used for real-world applications in solid state or aqueous media, where chromophores tend to form aggregates. Prof. Ben Zhong Tang's team has discovered a diametrically opposite phenomenon, in which non-emissive molecules are induced to luminesce by aggregate formation. He coined the term of aggregation-induced emission (AIE) to describe this unusual process and identified the restriction of intramolecular motion (RIM) as the main cause for the AIE effect. Based on the RIM mechanism, his group has developed a wide variety of AIE luminogens with emission colours covering visible and near-IR region and luminescence quantum yields up to unity. His laboratories have demonstrated the great utility of the AIE systems and explored their high-tech applications in such areas as optoelectronic devices, chemical sensing and biological imaging.

Biography:

Prof. Ben Zhong Tang obtained his B.S. and Ph.D. degrees from South China University of Technology and Kyoto University, respectively. He conducted his postdoctoral research at University of Toronto. He joined the Department of Chemistry at the Hong Kong University of Science & Technology in 1994 and was promoted to Chair Professor in 2008. He was elected to fellowships of the Royal Society of Chemistry (2013) and the Chinese Academy of Sciences (2009). He was awarded a number of prizes, such as State Natural Science Award (Chinese Government), MACRO2012 Lecture Award (ACS PMSE Division), and Senior Research Fellowship (Croucher Foundation). He has published more than 500 papers. He has delivered more than 200 invited lectures, at international conferences.

