

「分子の形」と「元素の性質」が織りなす多彩な電荷移動状態に基づく発光有機分子の創製

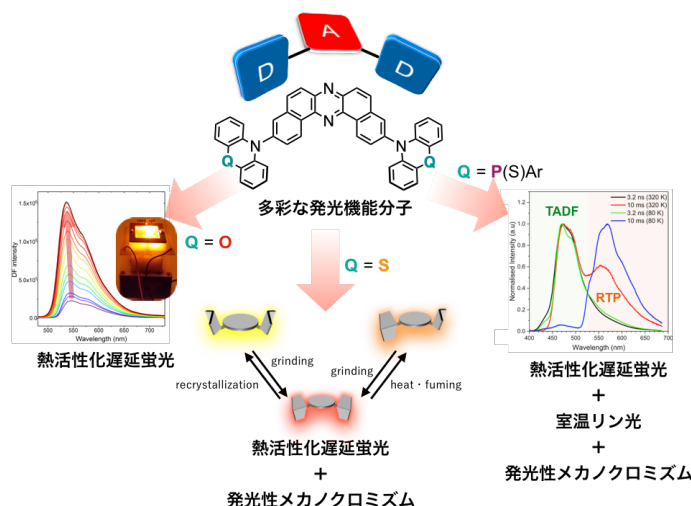
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Development of Luminescent Organic Molecules Based on Diverse Charge Transfer States Synergistically Generated from Molecular Shape and Elemental Property (*Graduate School of Engineering, Osaka University*) ○Youhei Takeda

The exploration of new photo-functions through controlling charge-transfer excited states generating from electron donor-acceptor systems is an important research topic for the progress of photonics and materials chemistry fields. By synergistically utilizing "molecular shape (conformation)" and "elemental property" to design photofunctional molecules within our original twisted donor-acceptor-donor scaffold, we have succeeded in developing a variety of luminescent molecules such as stimuli-responsive thermally activated delayed fluorescence via charge-transfer states and so on.

Keywords : Charge-Transfer State; Donor-Acceptor; Thermally Activated Delayed Fluorescence; Stimulus Responsiveness; Conformation

電子ドナー・アクセプター系から生じる電荷移動励起状態を制御し、新たな光機能を開拓することは、光・材料化学分野の発展に欠かせない重要課題である。我々は独自に開発した捻れ型ドナー・アクセプター・ドナー系において、「分子の形（配座）」と「元素の性質」を協奏的に分子設計に取り入れることで、電荷移動状態を経由する熱活性化遅延蛍光^{1,2)}に加えて刺激応答性を兼ね備えた熱活性化遅延蛍光³⁾および室温リン光分子⁴⁾をはじめとする多彩な発光分子の創出に成功した⁵⁻⁷⁾。



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