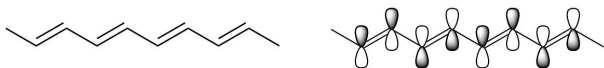


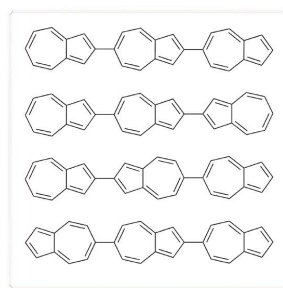
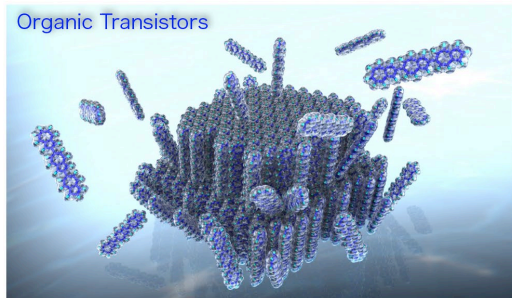
# Design and Synthesis of $\pi$ -Conjugated Organic Small Molecules

Professor Hiroshi Katagiri

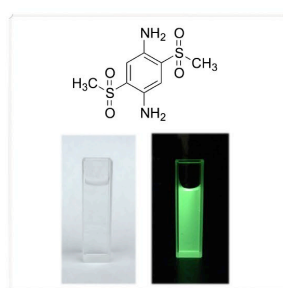
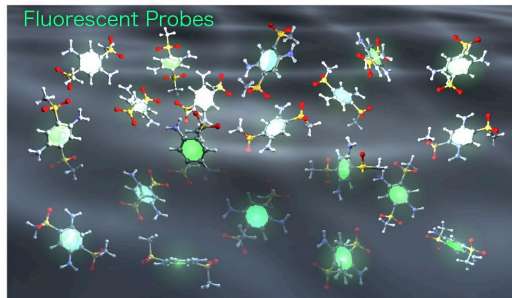
## $\pi$ -Conjugated Organic Molecules



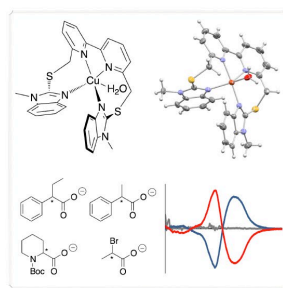
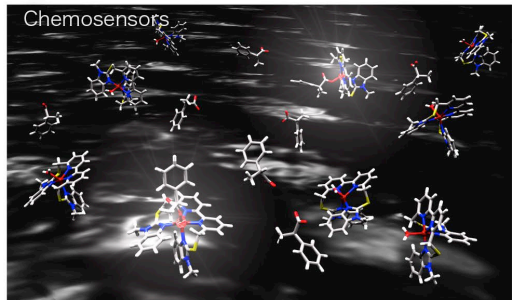
### Organic Transistors



### Fluorescent Probes



### Chemosensors



### Content:

$\pi$ -Conjugated molecules are a focus of growing interest in a wide range of fields, including as components in organic electronics and fluorescent probes. Molecular structures and how they are assembled are crucial to application performance. Higher-order self-assembly is needed to achieve optimal performance in organic semiconductors; non-assembly unimolecular behavior is desired for high emission efficiency in fluorescent dyes. Longer-wavelength spectra obtained from extended  $\pi$ -conjugated or push-pull systems are vastly advantageous for various applications.

### Appealing point:

Using synthetic and physical organic chemistry techniques, we design and synthesize novel  $\pi$ -conjugated molecules comprising aromatic units as a fundamental framework. Further, by employing supramolecular chemistry to control molecular structures and fine-tune the unique characteristics of molecular assemblies, we are developing novel high-performance functional materials with the potential for application in the fields of organic electronics, fluorescent probes, and chemical sensors.

Yamagata University Graduate School of Organic Materials Science

Research Interest : Synthetic Organic Chemistry

Physical Organic Chemistry

Supramolecular Chemistry

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