Biography

第277回 OPERA研究交流セミナー
第268回 ISIT有機光エレクトロニクス研究特別室セミナー
第335回 未来化学創造センターセミナー

日時：2026年6月9日（火）16：00～17:00
場所：ISI棟2階　206号室（OPHILIA Room）

Robust syntheis sof semiconducting polymers toward clear structure-property relationships for optical gain

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Organic semiconductors have enabled major advances in optoelectronic devices such as organic light-emitting diodes (OLEDs) and organic solar cells (OSCs). More recently, significant efforts have been devoted to the development of electrically pumped organic semiconductor lasers, which remain challenging due to intrinsic losses and material instability. Among candidate materials, F8BT-based polymers have attracted considerable attention due to their high photoluminescence quantum yields and potential for optical gain. However, their practical use is often limited by poor reproducibility and uncertain structural characterization arising from conventional high-temperature synthetic routes. In this work, we report the synthesis of a new generation of F8BT derivatives using a robust, room temperature and scalable synthetic strategy. This approach enables improved control over the polymer structure, allowing for reliable characterization and systematic investigation of structure–property relationships. The resulting materials are designed to exhibit enhanced optical gain properties while minimizing losses associated with polaron absorption. These results provide a promising pathway toward the rational design of organic gain media for laser diode applications.

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　　：財団法人九州先端科学技術研究所（ISIT）
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