



第280回 OPERA研究交流セミナー

第271回 ISITマテリアルズ・オープン・ラボセミナー

第338回 未来化学創造センターセミナー



日時: 2026年8月3日(月) 16:00～17:00

場所: ISI棟2階 206号室(OPHELIA Room)



Nanolithographic Organic Semiconductors

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The extension of Moore's law to organic semiconductor devices will open many new technological opportunities such as ultrahigh-resolution displays, integrated photonics, and lasers. However, traditional vacuum evaporation and inkjet printing methods are incompatible with the lithographic scaling processes that underpin silicon electronics, hindering true monolithic integration with complementary metal-oxide-semiconductor (CMOS) circuits. In this talk, I will present our recent research effort in the development of nanolithographic organic semiconductor devices. Three topics will be covered: (i) the microscopic tool characterizing nanoscale OLED device arrays: Momentum-Resolved Excited-State Lifetime Microscopy; (ii) the development of top-down nanofabrication methods: nanostencil and molecular-beam holographic lithography; (iii) the development of bottom-up macromolecular synthesis of electroluminescent photoresists (ELPRs) that can be directly patterned by ultraviolet (UV) and electron beam lithography (EBL). The capability of nanopatterning of organic semiconductor to the deep subwavelength region ($< \lambda/4$) will unlock their potential for monolithic integration with resonant and polaritonic nanostructures.

主催: 九州大学 最先端有機光エレクトロニクス研究センター

: 財団法人九州先端科学技術研究所 (ISIT)

共催: 九州大学 未来化学創造センター