



第283回 OPERA研究交流セミナー
第274回 ISITマテリアルズ・オープン・ラボセミナー
第341回 未来化学創造センターセミナー



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場所: ISI棟2階 206号室 (OPHELIA Room)

Radical chromophores for OLEDs and beyond

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Luminescent open-shell organic materials have attractive properties for optoelectronic and spintronic devices due to their doublet-quartet spin manifold. We showed how intermolecular triplet harvesting can improve stability and efficiency of radical NIR OLEDs.

[1] We also found that luminescence can be recycled after populating quartet states in radicals with suitably tuned excited state energies, allowing optical spin read-out at room temperature.

[2,3] Light emission is additionally possible in systems that contain intrinsically dark radicals, enabled by TADF units.

[4]. Taken together these results show the rich opportunities for radical chromophores.

[1] *Nat. Photon.* 18, 905-912 (2024)

[2] *Nature* 620, 538-544 (2023)

[3] *Nat. Commun.* 17, 7203 (2026)

[4] *Adv. Mater.* 37, 2501164 (2025)

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