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第35回　ISIT有機光エレクトロニクス研究特別室セミナー
第97回　未来化学創造センターセミナー

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“High efficient organic photodetector devices”

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Organic ultraviolet-visible and near infrared photodetectors (PDs) have recently attracted much attention for their advantages over inorganic devices including large-area detection, low-cost fabrication, and potential flexibility. However, the performance of organic devices does not exceed that achieved in conventional semiconductor technologies (e.g., Si, GaN, InGaAs). In this talk, approaches for high efficient organic PDs are presented by fabricating a series of devices with high sensitivity responding for different wavelengths in light of the photophysics analysis of organic PD. By choosing donor and acceptor materials, which have good absorption for detected signal, matched energy level alignment and high carrier mobility, good device structures like bulk heterojuction increasing dissociation of photogenerated excitons into free carriers, and electrodes for high charge collection efficiency, high PD performance can be achieved. Organic PDs have a bright future.

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