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The Development of Materials and Architectures for Light-Emitting Diodes

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Innovation in materials and device architectures has played a crucial role in development of organic light-emitting diodes. Most research has concentrated either on small organic molecules or conjugated polymers. We have pursued an alternative approach to solution processable materials for LEDs based on dendritic macromolecular architectures. Simple light-emitting dendrimers consist of a core, conjugated dendrons (branches) and surface groups, and by suitable choice of these components, efficient solution-processed LEDs can be made. However, such dendrimers can also be combined into even larger macromolecular architectures including poly(dendrimers). In this presentation we will discuss our recent developments on light-emitting materials and device architectures with a particular focus on poly(dendrimers). A combination of synthesis, physical, photophysical measurements, and/or device fabrication and testing will be described.

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
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