

9-2018-4568 | Furan-Based Compounds for Organic Electronic Materials
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Background

Organic semiconductors are of immense commercial interest. This class of materials can replace the more well-known inorganic semiconductors which are pervasive in modern life but nevertheless are poor choices for a broad set of applications including flexible displays, wearables, printable electronics, energy and general lighting. These materials can be processed using wet deposition methods.

Our Innovation

- The furan-based material is soluble, conjugated and exhibits robust fluorescence (~10x higher than thiophene analogs).
- Shows significantly higher stability to photooxidation relative to parent furans which is critical for performance and material lifetime.
- Emission across the whole visible spectrum

Technology

The research group has obtained a facile synthetic route to a stable building unit under ambient conditions.

Opportunity

There is massive interest in organic electronics for use in optoelectronic devices. The performance demands from such materials are daunting, and new materials such as these furan-based oligomers are strong candidates to meet these requirements. Organic electronic materials are critical for next-generation displays for wearables, flexible displays and printed electronics. The family of materials described here are promising building blocks for upcoming devices based on high performance organic-light emitting diodes.

Patent Status

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