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A bithiophene imide-based polymer donor for alloy-like ternary organic solar cells with over 20.5% efficiency and enhanced stability

Authors synthesized a new polymer donor, PBTI-FR, based on bithiophene imide. Benefiting from its strong dipole moment and excellent solubility, PBTI-FR was incorporated as the third component into the PM6:L8-BO system, effectively reducing energy loss and finely tuning film morphologies. As a result, high-efficiency and stable ternary organic solar cells with an alloy-type donor structure were successfully constructed. This work demonstrates a powerful strategy for advancing the next-generation organic photovoltaics.

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## As featured in:



See Bumjoon J. Kim, Xugang Guo,  
Bin Liu *et al.*,  
*Energy Environ. Sci.*, 2025, **18**, 5913.