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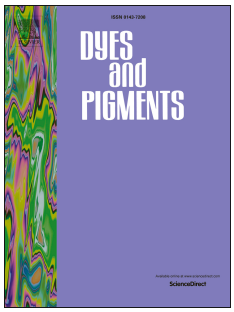

Over 7% photovoltaic efficiency of a semicrystalline donor-acceptor polymer synthesized via direct arylation polymerization

Kai Wang, Hui Chen, Xin Wei, Hassan Bohra, Feng He, Mingfeng Wang

PII: S0143-7208(18)30602-8

DOI: 10.1016/j.dyepig.2018.05.036

Reference: DYPI 6765

To appear in: *Dyes and Pigments*

Received Date: 17 March 2018

Revised Date: 11 May 2018

Accepted Date: 16 May 2018

Please cite this article as: Wang K, Chen H, Wei X, Bohra H, He F, Wang M, Over 7% photovoltaic efficiency of a semicrystalline donor-acceptor polymer synthesized via direct arylation polymerization, *Dyes and Pigments* (2018), doi: 10.1016/j.dyepig.2018.05.036.

Over 7% photovoltaic efficiency of a semicrystalline donor-acceptor polymer synthesized via direct arylation polymerization

Kai Wang, [a] *Hui Chen,* [b] *Xin Wei,* [a] *Hassan Bohra,* [a] *Feng He,** [b] *Mingfeng Wang** [a]

[a] School of Chemical and Biomedical Engineering, Nanyang Technological University, 62 Nanyang Drive, Singapore 637459. E-mail: mfwang@ntu.edu.sg

[b] Department of Chemistry, Southern University of Science and Technology, Shenzhen, 518055 (P. R. China). E-mail: hef@sustc.edu.cn

KEYWORDS: Direct arylation, polymerization, polymers, organic electronics

ABSTRACT**:** Direct arylation polymerization enables "greener" synthesis of a high-performance semicrystalline π-conjugated polymer, poly[(2,5-bis(2-hexyldecyloxy)phenylene)-*alt*-(5,6-difluoro-4,7-di(thiophene-2-yl)benzo[c][1,2,5]thiadiazole) (**PPDT2FBT**). The resulting polymers show a hole mobility of 4.7×10^{-3} cm^2 V^{-1} s^{-1} in bottom-gate/top-contact field effect transistors, and a power conversion efficiency over 7% in organic bulk-heterojunction solar cells.