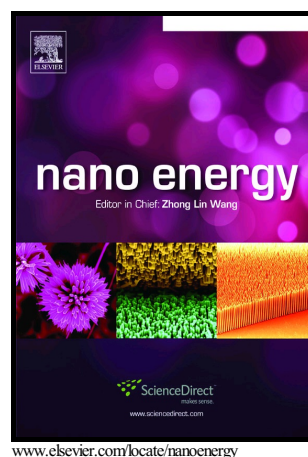


Author's Accepted Manuscript

16% Efficient Silicon/Organic Heterojunction Solar Cells using Narrow Band-Gap Conjugated Polyelectrolytes Based Low Resistance Electron-Selective Contacts

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PII: S2211-2855(17)30704-8
DOI: <https://doi.org/10.1016/j.nanoen.2017.11.025>
Reference: NANOEN2326

To appear in: *Nano Energy*

Received date: 30 August 2017
Revised date: 6 November 2017
Accepted date: 9 November 2017

Cite this article as: Jian He, Wenjun Zhang, Jichun Ye and Pingqi Gao, 16% Efficient Silicon/Organic Heterojunction Solar Cells using Narrow Band-Gap Conjugated Polyelectrolytes Based Low Resistance Electron-Selective Contacts, *Nano Energy*, <https://doi.org/10.1016/j.nanoen.2017.11.025>

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16% Efficient Silicon/Organic Heterojunction Solar Cells using Narrow Band-Gap Conjugated Polyelectrolytes Based Low Resistance Electron-Selective Contacts

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ABSTRACT

Dopant-free silicon (Si)/organic heterojunction solar cells (HSCs) have drawn much attention due to their immense potential in achieving high power conversion efficiencies (PCEs) with simple device architectures and fabrication procedures. However, unsatisfied rear-contacts severely hinder further improvement in PCEs for these promising HSCs. Exploring effective cathodic interfacial materials with low temperature fabrication to replace conventional diffusion layer shows the extremely importance of technical innovation. Here, poly[4,8-bis(2-ethylhexyloxy)benzo[1,2-b:4,5-b']dithiophene-2,6-diyl-alt-ethylhexyl-3-fluorothieno[3,4-b]thiophene-2-carboxylate-4,6-diyl] (PTB7)-based narrow

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