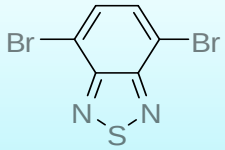
Luminescence Technology Corp.

Novel Building Block for Polymer Solar Cells (PSCs) Materials : Naphtho[1,2-c:5,6-c]bis[1,2,5]thiadiazole

K0092



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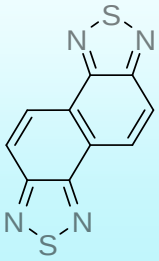

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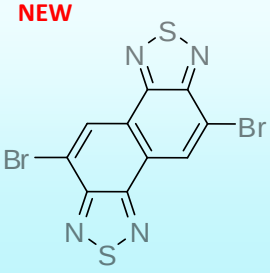

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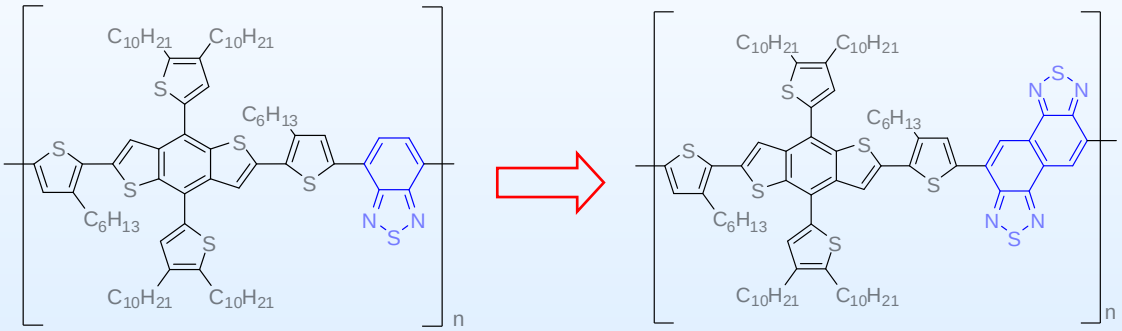

PBDT-DTBT PCE : 2.11 %

PBDT-DTNT PCE : 6.0%

Reference : ***J. Am. Chem. Soc. 2011, 133, 9638–9641***

Various donor-acceptor(D-A) conjugated polymers have been developed to achieve high PCEs. 2,1,3-benzothiadiazole(BT) has been proven one of the most promising units for high-performance polymer solar cells(PSCs) materials among the conjugated polymers, and it has used as an electron-deficient receptor widely.

Recently, naphtho[1,2-c:5,6-c]-bis[1,2,5]-thiadiazole(NT) was developed as new acceptor building block. Compared with BT, the NT-based polymer exhibited a red-shifted absorbance, enhanced hole mobility (~10^{-5} cm^2 V^{-1} s^{-1} for PBDT-DTNT and ~10^{-6} cm^2 V^{-1} s^{-1}) for PBDT-DTBT greatly, and improved PSCs performance with PCE 6.00%.

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