Systematic Development, Synthesis and Application of New π-Conjugated Compounds for Organic Solar Cell Devices

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Abstract: Organic Solar Cell (OSC) is a promising alternative for clean and renewable energy due to their potential to be fabricated onto large area, light-weight flexible substrates by solution processing at low cost. Development of new π-conjugated systems has become a key factor for the advancement of OSC research into a next level upto commercialization. Systematic development and synthesis of new n-type π-conjugated compounds containing different building blocks such as 2,1,3-benzobisthiadiazole **(BTz)**, naphtho[1,2-*c*:5,6-*c*']bis[1,2,5]thiadiazole **(NTz),** fluorinated naphtho[1,2-*c*:5,6-*c*']bis[1,2,5]thiadiazole **(FNTz)** etc. their structure-property relationships will be discussed. Furthermore, application of these newly synthesized compounds as nonfullerene acceptor into OSC device with poly(3-hexyl thiophene) (P3HT) as a wide band gap donor will be presented in details.

References:

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