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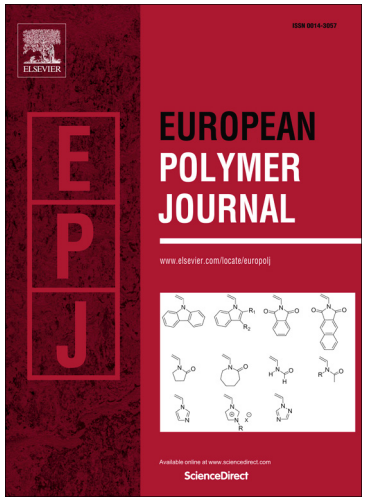

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Microporous conjugated polymers via homopolymerization of 2,5-diethynylthiopene

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Abstract

Homopolymerizations of 2,5-diethynylthiophene into conjugated microporous polymers by (i) chain-growth polymerization and (ii) polycyclotrimerization are described. Both methods provide nearly quantitative yields of thiophene-rich (7.6 mmol thiophene rings/g) networks with specific surface area up to 839 m^2/g. The thiophene units enhance the affinity of the networks to CO_2 and red-shift the UV/vis and fluorescence absorption and emission bands of the networks, respectively.

Keywords: thiophene, microporous, catalysis, polymerization, conjugated polymer, adsorption