Category

Synthesis of Materials and Unnatural Products

Key words

chromophores

heterocycles

near-IR dyes

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Selective NIR Chromophores: Bis(pyrrolopyrrole) Cyanines

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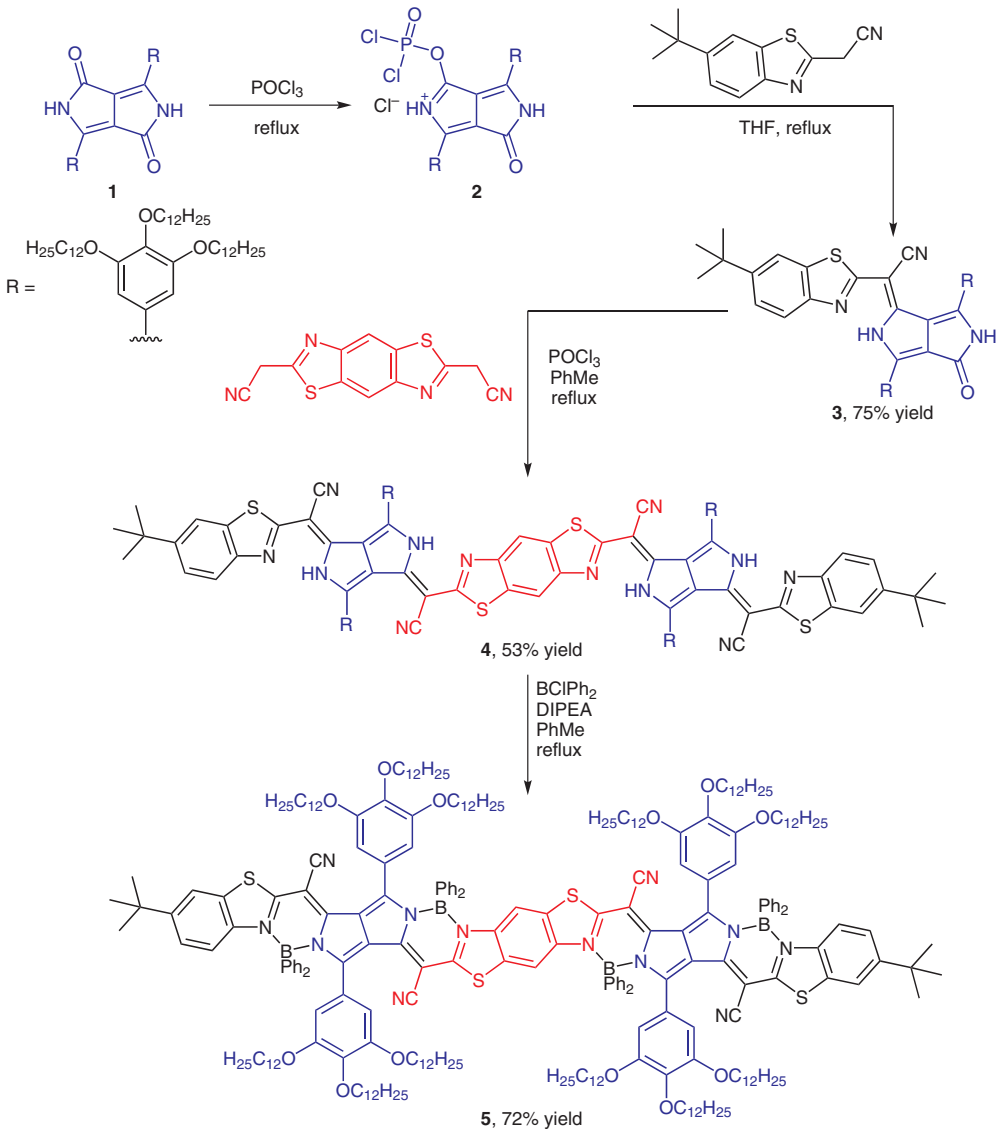
Selective NIR-Absorbing Dyes



Significance: Near-infrared (NIR) dyes that do not absorb in the visible range have potential as heat-blocking window coatings, laser-protecting glasses or as antiforgery markers. The authors present the synthesis of a series of NIR-absorbing bis(pyrrolopyrrole) cyanine dyes (**4** and **5** as well as derivatives with different side and end groups) that meet these criteria.

Comment: Rigidifying the conjugated system of **4** by introduction of BPh_2 groups (leading to **5**) results in a red shift of the absorption maximum by 65 nm as well as in narrowing the absorption bands and in an increase of the extinction coefficient (ε = 277'000 M^{-1} cm^{-1} for **4** to ε = 571'000 M^{-1} cm^{-1} for **5**).

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