Push–Pull Chromophores from Indian-1,3-dione

Modification of indan-1,3-dione:

1. ethyl acetoacetate
   Et₃N, Ac₂O, 25 °C

2. HCl-H₂O, 80 °C

T-Shaped chromophore synthesis:

Pd-catalyzed cross-coupling

Significance: The synthesis of T-shaped push–pull chromophores based on indan-1,3-dione as an electron acceptor is presented. The two donor moieties that comprise the T-shaped architecture are installed via the Knoevenagel condensation of 4,7-diiodoindan-1,3-dione with an aryl aldehyde, followed by palladium-catalyzed cross-coupling of the iodides with N,N-dimethylaniline or thiophene-containing substituents.

Comment: The optical and electronic properties of the synthesized T-shaped chromophores are extensively studied by UV/Vis absorption spectroscopy and calculations. Their non-linear optical properties are also examined through theoretical calculations.

SYNFACTS Contributors: Timothy M. Swager, Gregory D. Gutierrez

Synfacts 2014, 10(1), 0035  Published online: 13.12.2013
DOI: 10.1055/s-0033-1340390; Reg-No.: S14613SF