

Y. ENDO, M. HASEGAWA,* T. MATSUI, H. YAGI, S. HINO, Y. MAZAKI* (KITASATO UNIVERSITY, SAGAMIHARA, AND EHIME UNIVERSITY, MATSUYAMA, JAPAN)
Synthesis and Electronic Structure of Dicyanofulvene-Fused Electron Accepting Molecule Based on a 1,5-Dihydro-*s*-Indacene Framework
Org. Lett. **2014**, *16*, 5608–5611.

A High Cyano Content Indacene as a Stable Organic Electron Acceptor

Category

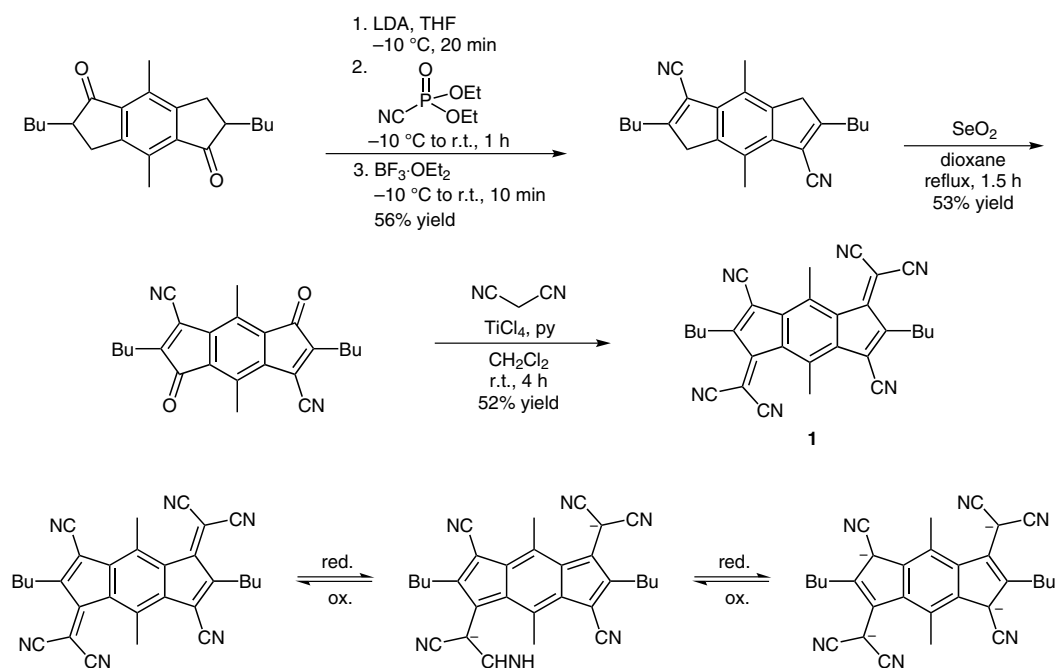
Synthesis of
Materials and
Unnatural Products

Key words

electron acceptor

indacenes

nitriles



Significance: The authors used rational design to target the reported structure, compound **1**. The indacene framework was stabilized by the high degree of cyano functionalization without compromising ease of reduction, which has been an issue with indacenes stabilized by benzannulation. The high cyano content also lowered the LUMO to -5.8 eV. Cyclic voltammetry shows four reversible single electron transfers, and UV/Vis shows a band gap of ~ 1.9 eV.

Comment: The synthesis began from a previously reported compound (C. Adams et al. *Inorg. Chim. Acta* **2011**, *366*, 44), produced 330 mg of pure **3a**, and should be scalable. Compound **3a** was found to be generally stable both as a solid and in solution, possibly due to the low-lying LUMO.

SYNFACTS Contributors: Timothy M. Swager, Elizabeth S. Sterner
Synfacts 2015, 11(1), 0039 Published online: 15.12.2014
DOI: 10.1055/s-0034-1379671; Reg-No.: S13014SF

2015 © THIEME STUTTGART • NEW YORK