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Synthesis and Physicochemical Properties of Strong Electron Acceptor 14,14,15,15-Tetracyano-6,13-pentacenequinodimethane (TCPQ) Diimide
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Category

Synthesis of Materials and Unnatural Products

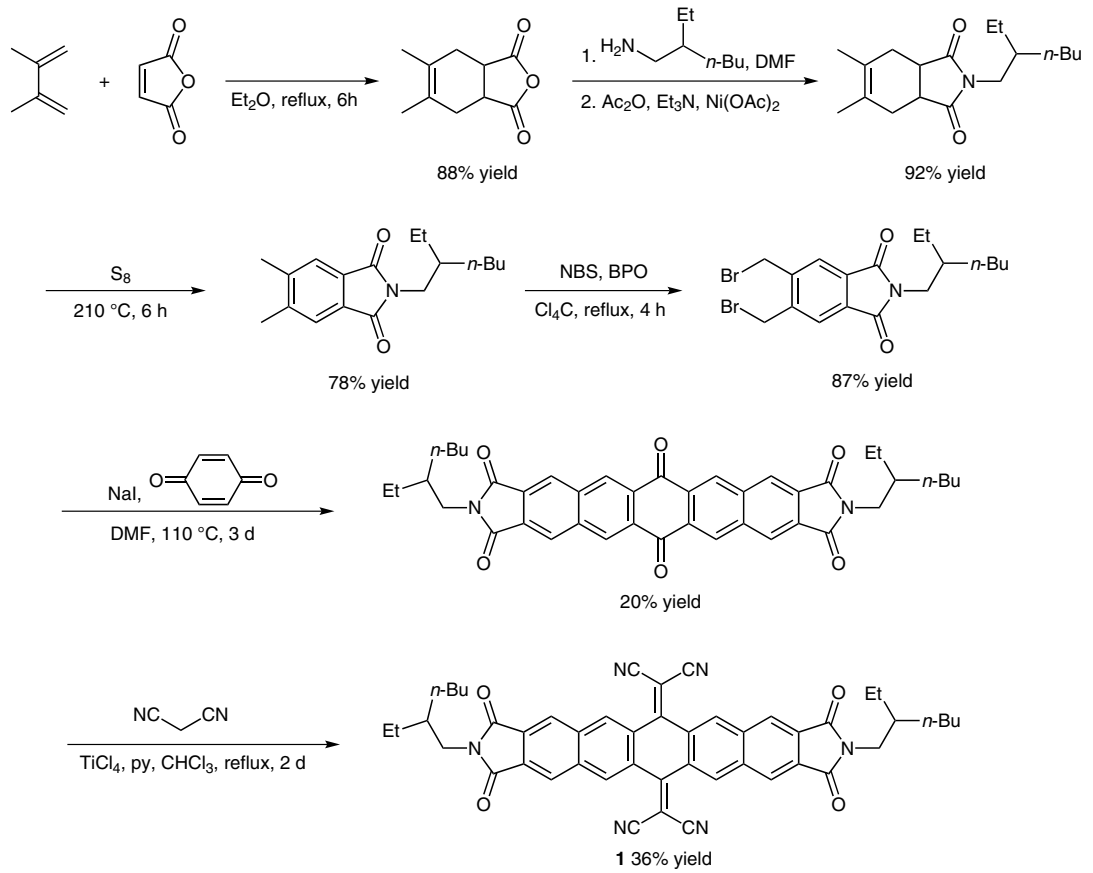
Key words

pentacenes

cycloaddition

tetracyanoquino-dimethanes

Electron-Acceptor Pentacene Derivative



Significance: This paper reports the synthesis of an extended tetracyanoquinodimethane (TCNQ) analogue, **1**. Although this is not the first report of a TCNQ-like acene, the method reported by the authors consists of only six steps, including a double Diels–Alder reaction and a Knoevenagel condensation as key steps. The presence of the diimide substituents not only increases the solubility of the final molecule, but also has implications on its electronic properties.

Comment: Electron-acceptor molecules are essential in organic electronic materials, and an important property of such molecules is the LUMO energy level. The authors report a LUMO level of –4.03 eV for **1**, which makes this molecule and derivatives of it, good candidates for a variety of applications.

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