Category

Synthesis of Materials and Unnatural Products

Key words

polycyclic aromatic hydrocarbons

Lewis acid catalysis

anthracenes

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Indium-Catalyzed Construction of Polycyclic Aromatic Hydrocarbon Skeletons via Dehydration
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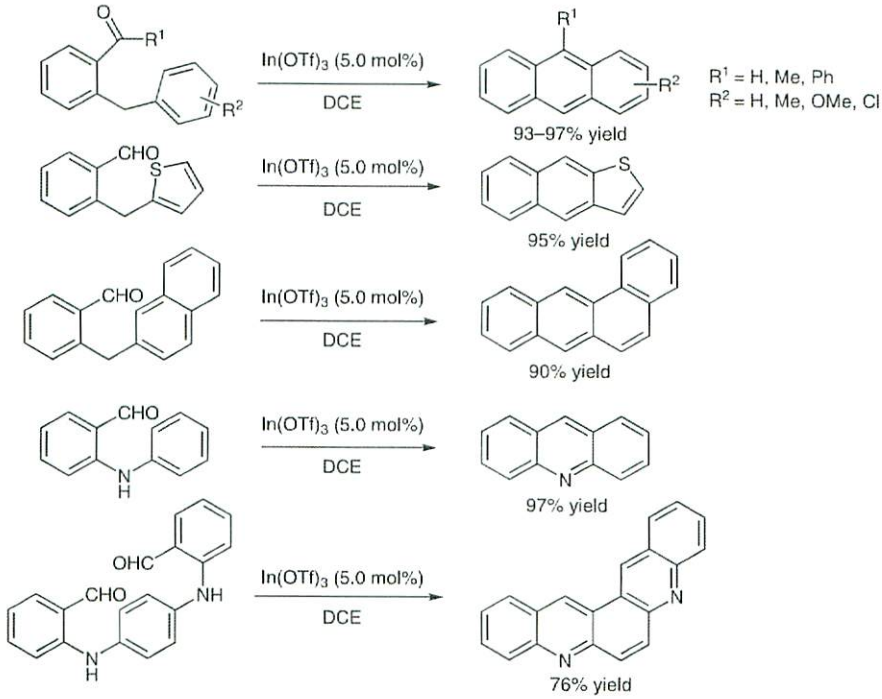
A Facile Route to Polycylic Aromatic Hydrocarbons



Significance: The authors performed an extensive screening of Lewis acid catalysts in their attempts to synthesize the polyaromatic hydrocarbons shown in this paper. While other catalysts, notably $Sc(OTf)_3$ and $[ReBr(CO)_3(thf)]_2$, showed similar activity, $In(OTf)_3$ displayed the greatest propensity for performing the desired transformations under the least harsh conditions. The catalyst was shown to be particularly robust: it operated well both in the presence of amines and in solvents which have not been dried or degassed.

Comment: The potential applications for substituted anthracenes are far-reaching: from organic electronics to conjugated polymers, to sensing – to name just a few. The work in this paper reveals a powerful method for constructing arene frameworks. The authors also demonstrated that the method is not limited to anthracenes; the catalyst can also be used to construct larger, more challenging frameworks, including those which incorporate heteroatoms within their skeleton.

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