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A New Approach to Polycyclic Azaarenes: Visible-Light Photolysis of Vinyl Azides in the Synthesis of Diazabenzopyrene and Diazaperylene
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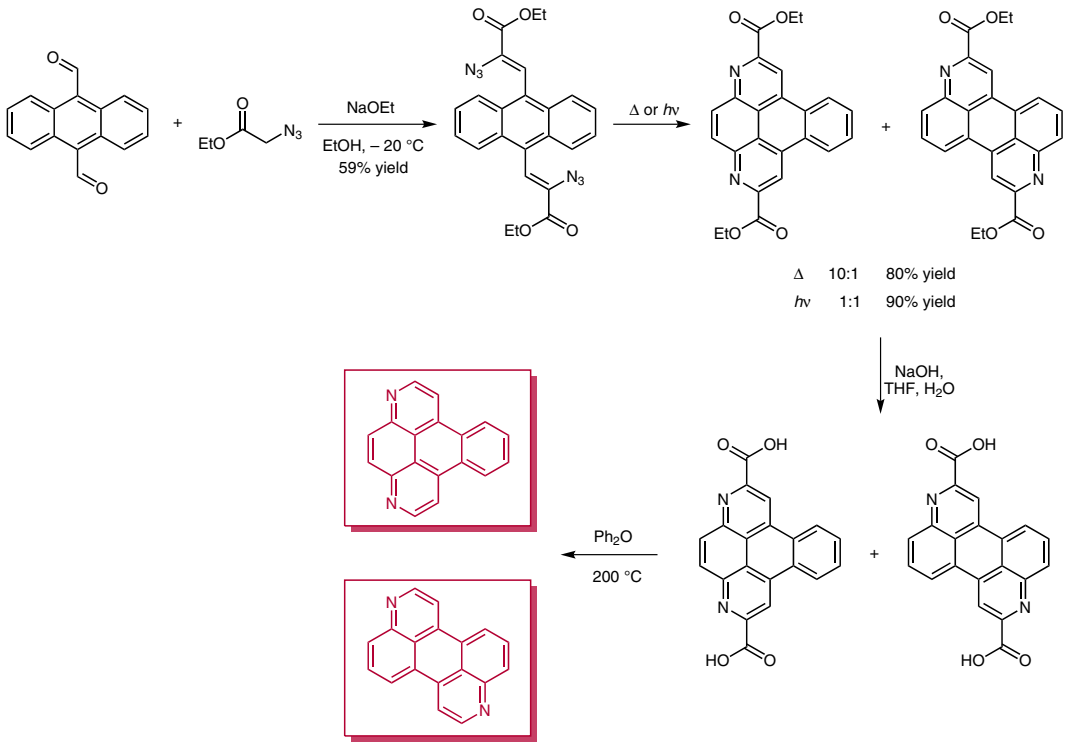
Nitrogen Analogues of Polycyclic Aromatic Hydrocarbons



Significance: Nitrogen-containing polyaromatic hydrocarbons are well-known for their stability and spectacular optoelectronic properties. The authors report a facile and efficient approach to access structurally demanding polycyclic azaarenes: diazabenzopyrene and diazaperylene. In general, synthetic approaches to azaarenes are limited to aromatic amines as starting materials. The visible-light photocyclization of vinyl azide derivatives is an important alternative to overcome the above-mentioned limitation.

Comment: The authors demonstrate the efficient synthesis of nitrogen-containing polyaromatic hydrocarbons starting from vinyl azide functionalized anthracene substrates. The photocatalyst-free, visible-light photocyclization of vinyl azide derivatives of anthracenes suggests possible applications for the syntheses of previously inaccessible nitrogen-containing polycyclic aromatics.

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Synthesis of Materials and Unnatural Products

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