

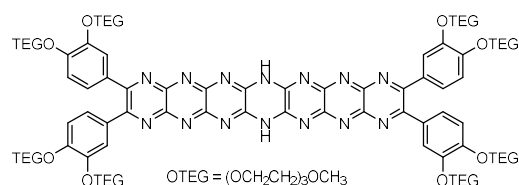
## Synthesis and Photophysical Properties of Extended Pyrazinacenes

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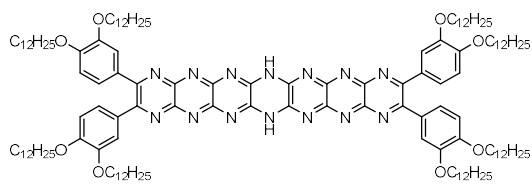
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Pyrazinacenes consist of rectilinearly fused 1,4-pyrazine units and can be considered as highly nitrogenated analogues of conventional acenes. Higher analogues tend to contain a single reduced dihydropyrazine unit which often improves their photoluminescence quantum yields when compared to their fully oxidized congeners.

In this presentation, we will discuss our investigations into higher pyrazinacenes containing 6 and 7 consecutively fused pyrazine rings. We have previously demonstrated that higher pyrazinacenes can exhibit highly efficient deep red and near infrared (NIR) photoluminescence.<sup>1</sup> Here we show how the solubility of these compounds can be tuned by addition of different alkoxy substituents to give derivatives that are soluble in solvents with a wide range of polarity from hexane to water. In addition, we describe the synthesis of a previously unreported dodecaazahexacene containing six consecutively fused pyrazine rings. We will discuss the photophysical properties of these compounds in different solvents as well as their amphotropic properties.



WATER SOLUBLE



HEXANE SOLUBLE

1) G. J. Richards *et al*, *J. Am. Chem. Soc.*, **2019**, 141, 50, 19570-15974.