Title: \([n]\)Cyclophanes as Stepping Stones on the Way to Aromatic Belts and Warped Nanographenophanes

Bridging an aromatic system at its two most highly separated positions gives rise to an \([n]\)cyclophane in which the aromatic system can be bent to varying degrees over its full length through modification of the bridge. Starting with benzene, one arrives at the \([n]\)paracyclophanes, which have been thoroughly studied. \(^1\) Successive \(C_{10}\) annulations of benzene give rise to a series of PAHs (pyrene, peropyrene, teropyrene, \textit{etc.}) that ultimately grow into narrow graphene nanoribbons.

Bridging each member of this series give rise to a series of \([n]\)cyclophanes: the \([n](2,7)\)pyrenophanes,\(^2\) the \([n](2,9)\)peropyrenophanes, the \([n](2,11)\)teropyrenophanes,\(^3\) \textit{etc.} Each set of cyclophanes offers opportunities to learn about relationships between the chemical / physical properties of the aromatic system and the degree of deformation from planarity. Furthermore, as the aromatic system becomes larger it describes an increasingly large segment of a short armchair single-walled carbon nanotube (Vögtle belt).

This lecture will provide details of synthesis, chemistry and properties of the various \([n]\)cyclophanes and the results of work aimed at using them as starting points for the synthesis of \([n]\)cyclophanes with larger/broader PAHs.