

Well-defined Nanographenes through Aryne Chemistry

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Structurally, nanosized graphenes are nothing but large polycyclic aromatic hydrocarbons (PAHs). During the last century, organic synthesis has provided numerous methods to prepare large PAHs. These synthetic methodologies could enable the preparation of graphene fragments with well-defined edges, a crucial feature of these carbon-based material.¹

In this contribution we described our efforts to obtain well-defined graphene nanoribbons through organic synthesis, in particular using aryne cycloaddition reactions. Figure 1 shows some examples of graphene fragments that have been synthesized in our labs by these bottom-up methodologies.

References

[1] Peña, D. (2010) Bottom-up Approaches to Nanographenes through Organic Synthesis, in Ideas in Chemistry and Molecular Sciences: Advances in Synthetic Chemistry (ed B. Pignataro), Wiley-VCH Verlag GmbH & Co., Weinheim, Germany. DOI: 10.1002/9783527630554. Ch11.

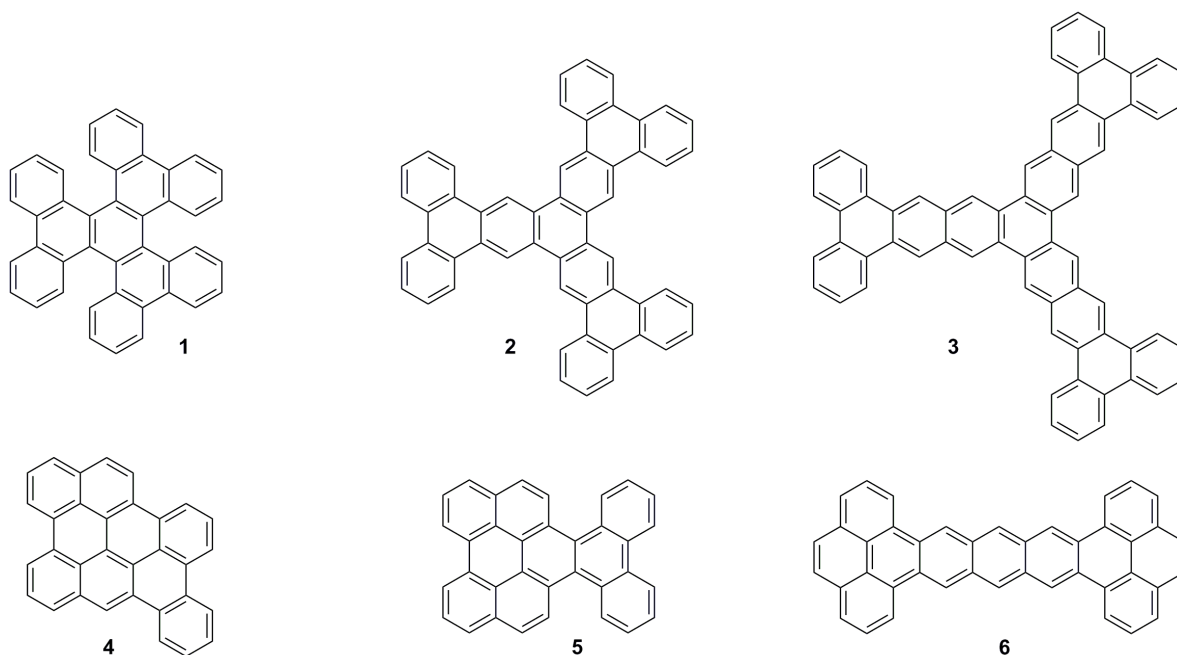


Figure 1