



## Prof. Qian Miao

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### Toward Negatively Curved Carbons

May 16 | Bldg. 101  
Wed 10:00 | Seminar Room on the 1<sup>st</sup> floor

**Abstract:** Carbon exists as a variety of nanometer-sized allotropes, where  $sp^2$  hybridized carbon atoms are covalently bonded in different geometries. Unlike graphene of zero curvature and fullerenes of positive curvature, theoretical carbon allotropes of negative curvature, which are known as Mackay crystals or carbon Schwarzites, have been proposed by embedding heptagons or octagons in the graphitic lattice. These negatively curved carbon allotropes are predicted to have intriguing properties on the basis of computational studies, but are yet to be synthesized. Negatively curved polycyclic arenes containing seven- and eight-membered rings are not only segments containing structural information of these negatively curved nanocarbons but also can be used as templates or monomer units for synthesis of them. This presentation will cover our recent studies on design, synthesis and structural analysis of negatively curved polycyclic arenes.

#### Reference:

- [1] K. Y. Cheung, X. Xu, Q. Miao, *J. Am. Chem. Soc.* **2015**, *137*, 3910–3914
- [2] X. Gu, H. Li, B. Shan, Z. Liu, Q. Miao, *Org. Lett.* **2017**, *19*, 2246–2249
- [3] K. Y. Cheung, C. K. Chan, Z. Liu, Q. Miao, *Angew. Chem. Int. Ed.*, **2017**, *56*, 9003–9007
- [4] K. Y. Cheung, S. Yang, Q. Miao, *Org. Chem. Front.* **2017**, *4*, 699–703
- [5] S. H. Pun, Z. Liu, Q. Miao, *Angew. Chem. Int. Ed.*, **2018**, *57*, 1851–1856.

Prof. Qian Miao was born in 1977 in Chengdu, China, and graduated from University of Science and Technology of China with B.Sc. degree in 2000. He received his Ph.D. degree from Columbia University in 2005 under the direction of Prof. Colin Nuckolls, and then did postdoctoral research with Prof. Fred Wudl in University of California, Los Angeles. He joined the Chinese University of Hong Kong as an assistant professor in 2006, and was promoted to Associate Professor in 2012 as well as Professor in 2016. His research interests include design and synthesis of novel polycyclic aromatic molecules with interesting structures and useful applications, and development of high-performance organic semiconductor materials and devices using tools from organic synthesis, supramolecular chemistry and surface chemistry.

**You are cordially invited to attend!**

Special Guest Seminar