

Synthesis of Polycyclic Aromatic Hydrocarbon Nanobelts and Cages

Ph.D. Position (salary E13 TVL 1/2; 3 years)

in the group of Prof. Dr. Michael Mastalerz

Starting not later than September 2021

The project: In recent years' tremendous progress has been made towards synthesizing non-planar polycyclic aromatic hydrocarbons (PAHs), such as negatively curved PAHs or even conjugated hoops or nanobelts (see e. g. *Nat. Chem.* **2021**, *13*, 402–419). Within this field, our work on curved hexabenzoovalenes (*Anaew. Chem. Int. Ed.* **2016**, *55*, 15594-15598), a chiral monkey-saddle PAH (*Anaew. Chem. Int. Ed.* **2020**, *59*, 270-274) or one of the first soluble and chiral azulene-based PAHs (*Anaew. Chem. Int. Ed.* **2019**, *58*, 17577-17582) was well-recognized by the community.

The objective of the ongoing project is to synthesize fully conjugated and fused PAHs with the structure of a nanobelt or cage that are cut-outs of larger frameworks such as Schwarzite. The target structures will be synthesized mainly by applying methods developed in our laboratory.

What we are looking for: A passionate person, which is skilled in organic syntheses (including common and modern lab techniques), able to plan and run multi-step syntheses independently. Furthermore, the person needs to be a team-player, open-minded and willing to participate in education of students (practical courses). Knowledge of computational chemistry (DFT etc.) is advantageous, but not a necessity.

Who we are: We are a diverse and international group of enthusiastic synthetic organic chemists, that do not fear to tackle synthetic problems of larger and complex non-natural products, such as giant porous organic cages and catenanes or large fused and soluble PAHs. We are also interested in the development of new crystal engineering synthons, as well as the construction of materials for applications in organic electronics (OTFTs, organic solar cells, batteries, etc.) or gas sorption/separation and more.

What we offer: Our group is part of the Institute of Organic Chemistry at the world-wide reputed Ruprecht-Karls University Heidelberg, the oldest University in Germany, with excellence status. The institute as well as the group is exceptionally well-equipped to succeed in the project. We for example have 8 NMR spectrometers (up to 700 MHz), diverse mass spectrometer, an X-ray service for single crystal structure analysis, several recycling-GPC and -HPLC machines for separation, UV/vis- and fluorescence spectrometer, cyclovoltammetry, etc.

The position is limited for **3 years (salary E13 TVL 1/2)** and will be filled as soon as possible. Please send your application (motivation letter, CV, resume of research experience (one or two pages max.), copies of certificates) as **one** pdf-file to Michael.mastalerz@oci.uni-heidelberg.de not later than June 30th 2021.

Please note: The Heidelberg University seeks to increase the number of female researchers and teaching staff in areas where they are not adequately represented. Therefore, qualified women with the requisite are expressly encouraged to apply. According to German law, disabled applicants with an equivalent high qualification will be given preference.