

Fukazawa Group Seminar

Nonalternant Hydrocarbons

Ordered in Framework Materials

Ms. Josefine Sprachmann

Ph.D. student

Dumele Lab, Department of Chemistry
Humboldt University Berlin, Germany



Abstract | Nonalternant hydrocarbons are polycyclic conjugated compounds containing odd-membered rings. They possess intriguing optical and electronic properties but are still underdeveloped on account of synthetic challenges or instability. One example is dibenzopentalene, a stable version of the antiaromatic pentalene, showing amphoteric redox behavior and small HOMO-LUMO gap which is usually only observed in heteroatom-rich molecules but is rare in such all-carbon scaffolds. Incorporating those molecules in organic devices as discrete small molecules or ill-defined amorphous polymers can pose difficulties. Covalent organic frameworks (COFs) however, are highly ordered, porous and crystalline materials. They provide a platform to align molecules with interesting properties in a well-defined, ordered environment enabling electronic delocalization by face-to-face π -stacking. Constructing COFs from nonalternant hydrocarbons gives rise to organic materials with unique properties, applicable as battery electrodes, semiconductors, in photocatalysis and more.

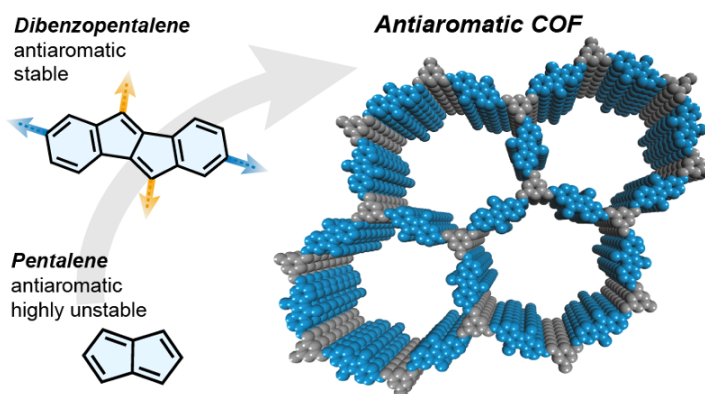
Date

December 7, 2023

10:30–11:30

Venue

KUIAS/iCeMS Main Building
2F Seminar Room



Contact

Aiko Fukazawa @KUIAS iCeMS
afukazawa@icems.kyoto-u.ac.jp

