

Furukawa Group Seminar

Date

January 11th, 2023
10:30–11:30

Venue

Kyoto University, KUIAS
iCeMS Main Building
2F Seminar Room
(#A207)

Registration



Required from Google form
(<https://forms.gle/Pavx9L5DRJeyrgG96>)

Contact

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Mechanochemical Release by Ultrasound of Non- Covalently Bound Guests from a Supramolecular Cage

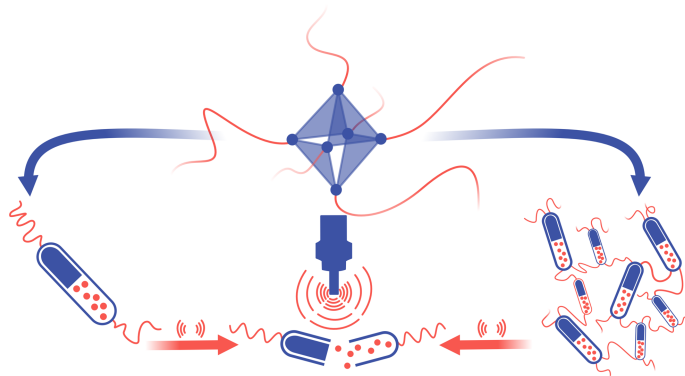


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Abstract

The mechanochemical release of cargo molecules from their respective latent carrier polymers is challenging. We present a versatile system based on a supramolecular coordination cage. By combining metal-mediated self-assembly of organic ligands into a discrete nanoscopic structure with polymer chains on each vertex, we realised the ultrasound-induced disassembly of a cargo-loaded, self-assembled supramolecular Pd^{II}₆(TPT)₄ cages, entailing the release of its nanoconfined guests. This is exemplarily demonstrated for several non-covalently bound, completely unmodified, but pharmaceutically active compounds. In addition, bifunctionalized bypridines can be used to generate metal-organic cage-based hydrogels.



References

- [1] R. Küng, R. Göstl, B. M. Schmidt, *Chem. Eur. J.* **2022**, 28, e202103860.
- [2] R. Küng, T. Pausch, D. Rasch, R. Göstl, B. M. Schmidt, *Angew. Chem. Int. Ed.* **2021**, 60, 13626.
- [3] T. Kunde, E. Nieland, H. V. Schröder, C. A. Schalley, B. M. Schmidt, *Chem. Commun.* **2020**, 56, 4761.
- [4] T. Kunde, T. Pausch, B. M. Schmidt, *Chem. Eur. J.* **2021**, 27, 8457.
- [5] T. Kunde, T. Pausch, G. J. Reiss, B. M. Schmidt, *Synlett* **2021**, 33, 161.



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