

Furukawa- Fujita Group Seminar

Date

Nov. 24th, 2023

15:30–17:00

Venue

Kyoto University, KUIAS
iCeMS Main Building

2F Seminar Room
(#A207)

Registration



• Required from Google form
(<https://forms.gle/Ap19sxKXa2nxAKTL7>)

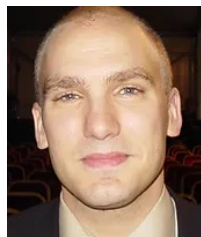
• On-site only

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Molecules in Metal Boxes



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Abstract

Simple organic subcomponents can come together around metal-ion templates to produce intricate hollow capsules,^[1] which can bind guest molecules selectively. This talk will describe the design and uses of some of these three-dimensional architectures, a few of which are shown in Figure 1 below, along with the use of the same construction principles to produce interlocked structures – catenanes^[2] and knots^[3] – and double-helical metallopolymers with potentially useful optoelectronic properties.^[4]

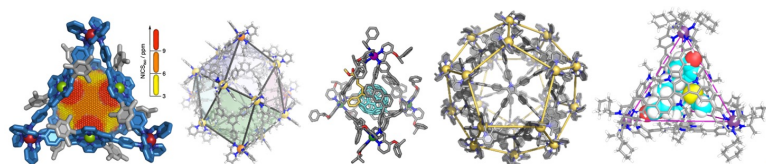


Figure 1. From left to right: an antiaromatic-walled cage;^[5] a capsule isomorphous to ferritin;^[6] a capsule capable of stereoselectively functionalizing fullerenes,^[7] a dodecahedral capsule with enough interior volume to house a small protein,^[8] and a capsule that discriminates between and selectively binds steroids.^[9]

References

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- [6] J. A. Davies, T. K. Ronson, J. R. Nitschke, *Chem* **2022**, *8*, 1099-1106.
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- [9] G. Li, T. K. Ronson, R. Lavendomme, Z. Huang, C. Fuertes-Espinosa, D. Zhang, J. R. Nitschke, *Chem* **2023**, in press.



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