Furukawa Group Seminar

Date

April 12th, 2023

11:00–12:00

Venue

Kyoto University, KUIAS
iCeMS Main Building

2F Seminar Room
(#A207)

Registration

· Required from Google form
(https://forms.gle/PrkkqmHKGfiapjrD9)

· On-site only

Contact

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New synthetic approaches in metal-organic framework-based nanohybrids

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Abstract

Assembly of Metal-Organic Frameworks (MOFs) to form hybrid nanostructures is a prolific topic in the field of porous materials that is providing innovative solutions in biomedicine, catalysis and in biotechnological processes. These MOF-based hybrid heterostructures offer unique functions that are not achieved with the individual components, such as improved controlled delivery of therapeutic biomolecules or superior photocatalytic activity.[1,2]

Herein we will discuss plausible synthetic routes to prepare MOF-based biocomposites from different MOFs including a general in situ strategy that promotes spontaneous MOF growth onto a broad variety of proteins, for the first time, regardless of their surface nature, allowing triggered release and retaining their activity after exposure to denaturing environments.

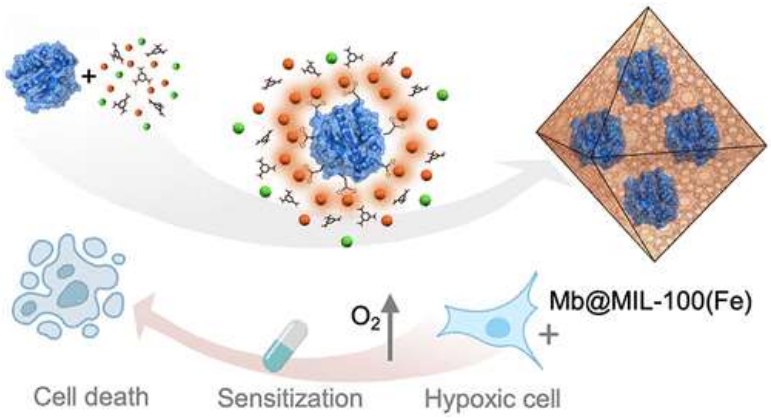

Figure. Representation of spontaneous MOF growth to form biohybrid structures and their therapeutic action upon controlled delivery of active biomolecule.

References

[1] Jesús Cases Díaz, Beatriz Lozano-Torres, and Mónica Giménez-Marqués, *Chem. Mater.* **2022**, *34*, 17, 7817.

[2] K. Caamaño, et al. *ACS Applied Materials & Interfaces*, **2022**, 14, 8, 10758.

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