Furukawa-Fukazawa Group Seminar

Date

Jun 5th, 2024
15:30–17:00

Venue

Kyoto University, KUIAS iCeMS Main Building

2F Seminar Room (#A207)

Registration

· Required from Google form (https://forms.gle/tW8B6UedEjviL3mT8)

· On-site only

Contact

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Spatial and temporal control over mechanics in dynamic biomaterials

Prof. Roxanne Kieltyka

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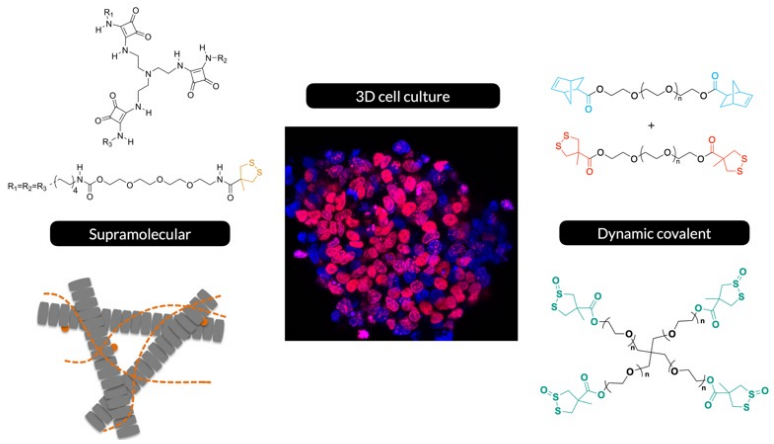
Abstract

The natural extracellular matrix (ECM) provides a myriad of biophysical and biochemical cues to cells to instruct their behaviour throughout life. While stiffness is widely recognized for impacting fundamental cellular processes ranging from spreading to differentiation, there is a growing appreciation of other mechanical properties that are either time- or strain-dependent such as viscoelasticity, plasticity, or strain stiffening. Dynamic hydrogels consisting of non-covalent or dynamic covalent bonds exhibit these complex properties which are essential to develop synthetic 3D culture substrates that more accurately represent the in vivo condition. In my talk, I will share our efforts in developing supramolecular and dynamic covalent polymer materials whose mechanics can be controlled for various 3D cell culture applications. I will show that the mechanics of these materials can be modulated in space and time with and without light to influence the behavior of several cell types used to model development and disease in vitro.



FURUKAWA LAB