

演題：**Advancing the Experimental Horizons of  
Polymer Morphology Characterization and  
Application: in-situ 3D Printing X-ray  
Scattering**

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場所：材料・化学棟 中会議室（MC102）

**Abstract:** Since the first introduction in the late 1960s, 3D printing has attracted great attention from academia and industry because of its hyper flexibility and high precision in designing and manufacturing three-dimensionally complex structural products of variable sizes. From decades of research and development, several 3D printing technologies have been refined so far, but the control over the physical properties and performance levels of printed parts remains a great challenge. For correlating printing parameters and physical properties of polymers, it is necessary to characterize polymer morphology and bridge the gap between the two aforementioned factors with the insight of the spatial arrangement and orientation of polymer chains.

This seminar aims to dive into the current state of 3D printing-polymer morphology research, the development of new generation of polymer morphology characterization infrastructure in the form of in-situ 3D printing X-ray scattering, experimental capabilities and limitations, implications of new methodologies, and insight and outlook on polymer science and 3D printing.

**References:** *Macromolecules* **2024**, *57*, 2810–2817.

主催：北海道大学工学研究院 フロンティア化学教育研究センター

共催：高分子学会北海道支部

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