

Frontier Chemistry Center フロンティア化学教育研究センター

講演会

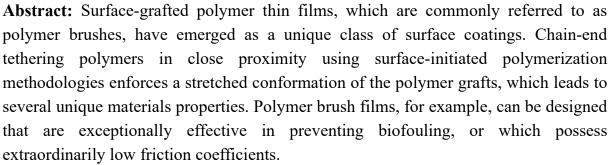
演題: Expanding the Scope of Surface-Initiated Polymerization

講 師: Prof. Harm-Anton Klok

Institutes of Materials, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

日時: 2024年5月14日(火) 14:30~15:30

場 所:フロンティア応用科学研究棟 2階セミナー室



This presentation will highlight three recent discoveries from our laboratory that take advantage of surface-initiated polymerization reactions to generate polymer surface coatings with unique properties. In a first example, it will be shown how surface-grafted polymer films can be designed and prepared that display piezo- and pyroelectric properties, which is of great interest e.g. for energy harvesting applications. In a second example, it will be shown how, for a polymer film of a given thickness and composition, solvent uptake and swelling can be controlled, essentially by molecular engineering at the polymer brush – substrate interface. Since solvent swelling is essential to nonfouling and lubrication applications, this provides a new approach to engineer such properties. Finally, it will be shown how concepts from supramolecular chemistry can be harnessed to generate surface-grafted polymer films that potentially could be grown and removed in a repetitive, reversible manner.

References: 1) *Macromolecules* **2023**, *56*, 9915; 2) *Adv. Mater.* **2024**, 36, 2307038; 3) *Angew. Chem. Int. Ed.* **2023**, *62*, e202305930

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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