Lecture series of Itami-ASPIRE

Kyushu University, Center for Molecular Systems (CMS)

The 86th CMS International Seminar

10:30-11:30 Nov. 26th, 2026

九州大学
分子システム科学センター（CMS）
Center for Molecular Systems（CMS）
Kyushu University

CoMBiS JST-ASPIRE

Itami Lab

九州大学 KYUSHU UNIVERSITY

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Surface Chemistry Towards π-Conjugated Polymers and Adaptive Materials

Surfaces offer the opportunity to expand chemical space due to their unique characteristics in comparison to solution-phase chemistry. The two-dimensional environment of single-crystal surfaces for example allows for the preparation of highly ordered self-assembled structures. Besides templating molecular organization, coinage metals can also function as catalysts to connect the building blocks to polymers. Diazo ketones can be transformed to carbenes that recombine to π-conjugated polymers, silanes can be connected via dehydrogenation with Si–Si and Si–surface bond formation, and propiolic acid are able to engage in a Glaser-type-coupling. If quartz glass surface is subjected to a solution of triethoxysilanes bearing an azo based photo-switch, the surface will be functionalized and becomes photo-responsive. The different characteristics of arylazoisoxazoles or diazocines can be integrated in the surface properties. For example, the water contact angle can be altered by irradiation with light of different wavelengths. Surfaces combining responsiveness to light irradiation and changes in redox potential can be prepared by functionalization of a conductive surface with an azo-based photo-switch.

10:30-11:30 Nov. 26th @ Ito campus West4-3F Lecture room 4
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