

物質理学セミナーのご案内

北海道大学電子科学研究所・助教 キム ユナ博士を講師としてお招きし、物質理学セミナーを開催いたします。キム先生は、フォトクロミズムやエレクトロクロミズムなど、光応答性の分子機械システムの構築、ならびにそれらの応用展開について研究されており、国内外で活躍されている研究者です。他分野の研究概略を知り、相互理解を進めるよい機会であり、キム先生にも、「専門外の方にも理解できるように」とお願いしております。多数の学生、院生、教員の皆様の参加をお待ちしております。

(担当:物質理学研究科 機能性物質学Ⅱ講座 久保和也)

講演時間が、11月28日 15:00～16:30へ変更になりました。

Seminar information

Date: November 28, 2018 15:00～16:30 (Time schedule has been shifted from 14:00～15:30.)

Place: Harima Campus for Science, Research building, 732 (播磨理学キャンパス研究棟 732 教室)

Speaker: Dr. Yuna Kim, Research Institute for Electronic Science, Hokkaido University

Title: Photocontrol of chiral liquid crystals for optical and dynamic mechanical functions

Abstract: Propagating mesoscopic motion of molecular switches and motors to macroscopic events is one of the grand challenges in the field of artificial molecular machines. Efforts directed toward this goal led to the development of actuators (mainly polymeric) that can convert light and (electro)-chemical energy into mechanical motion. The supramolecular self-assembly of liquid crystals (LCs) has made them a prime target of such studies, and the control over their long-range order has been harnessed in designing responsive reflectors, actuators, micromechanical systems, active smart surfaces, and sensors. Especially, when chiral photochromophore is dissolved into an achiral nematic LC, its molecular chirality can be transferred to the host medium resulting in a photo-responsive chiral nematic (cholesteric) LC phase. Considerable progress has been made towards single molecular chirality engineering by light, but its amplification to meso/macroscopic event is still highly challenging. In this talk, photoisomerizable chiral dopants exhibiting exceptionally large photoinduced helical twisting power switching will be introduced which could efficiently amplify and control the collective motion of molecules. In addition, their unique optical and mechanical functions will be introduced such as light-driven reversible modulation of reflection colors and unidirectionally rotating micro-sized objects on the surface of LC film, respectively.

Language: English

Contact: Kazuya Kubo, Graduate School of Material Science, University of Hyogo

e-mail: kubo@sci.u-hyogo.ac.jp

TEL: 0791-58-0163 (ext. 464)