

演題：**NEAR-INFRARED ELECTROCHROMIC
AND CHIROPTICAL
SWITCHING MATERIALS**

講師：**Jie ZHANG** 北京大学・副教授



Beijing National Laboratory for Molecular Sciences, Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, College of Chemistry and Molecular Engineering, Peking University

日時：2011年2月23日（水） 11：30～12：30

場所：工学部材料・化学棟 MC208 講義室

共催：高分子学会北海道支部

要旨：

Chiroptical switches have drawn wide attentions in recent years since they are of great potential applications in optical displays, telecommunications, circular polarized electroluminescence devices, enantioselective sensors, electrodes, catalysts, and adsorbents. Despite numerous studies have been carried out on electrochromic and chiroptical switching materials that operate in UV-vis region, little has been known about that in near-infrared region (NIR, 780-2500 nm). Several years ago, we launched a project addressing electrochemically-triggered NIR chiroptical switching organic molecules and polymers. Our work began with a series of chiral aromatic imides and diimides containing NIR active chromophores. Even though those molecules display electrochromism in the NIR region, no change in circular dichroism in the NIR region was observed. Afterwards, we used a low molecular weight gel as a chiral scaffold and electrochromic chromophores as a stimulus-responsive trigger to build up a chiroptical switching material in the visible and NIR spectral regions. It formed stable chiral and redox-active gels in n-butanol at room temperature. Interestingly, reversible and drastic changes in circular dichroism at 1310-1550 nm were induced when the stacked naphthalene diimide chromophores in the chiral gels were reduced to the radical anion state.

連絡先：工学研究院 生物機能高分子部門 中野 環（内線：6606）