学術講演会のお知らせ

Sum Frequency Generation Imaging Microscopy of Corrosion and Inhibition on Surfaces

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主催：北海道大学**GCOE**「触媒が先導する物質科学イノベーション」

共催：電気化学会北海道支部，触媒化学研究センター談話会

日時：平成**21**年**7**月**13**日（月）**15:00～16:30**

場所：北海道大学・創成科学研究機構棟（四階セミナー室**A**）

講演内容：

Sum frequency generation imaging microscopy (SFGIM) is used to observe, in situ, the reaction of cyanide ions with gold surface. Spatial and chemical variations across the surface are observed as a function of time. The initial period resulted in the formation of linearly bound cyanide to gold and with continuous exposure of gold film to cyanide solution led to presence higher-coordinated gold-cyanide complexes. These species were identified by their specific position in the SFG vibrational spectrum (2105, 2140, 2170, and 2225 cm^{-1}). The relative amount of these gold-cyanide species varied across the surface as resolved by the sum frequency generation microscopy. In addition, SFGIM has been used to investigate a self-assembled monolayer of alkanethiol (ODT-octadecanethiol) on a mild steel surface. The images are used to analyze the orientation of the alkanethiol monolayer and the distribution of orientational angles as well as defects in the film. The results show that, on average, ODT forms an ordered monolayer on mild steel when compared to the same monolayer on gold. However, the image analysis suggests that the distribution of tilt angles and conformational defects are greater for ODT on a mild steel surface compared to ODT/Au.

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