

論文 / 著書情報
Article / Book Information

題目(和文)	振動分光法およびナノ力学測定を用いた材料表面における有機・生体分子の局所吸着挙動に関する研究
Title(English)	Local Behavior of Organic and Biological Molecules at Solid Surfaces Investigated by Vibrational and Nanomechanical Spectroscopy
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Author(English)	Masahiro Oguchi
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Category(English)	Doctoral Thesis
種別(和文)	要約
Type(English)	Outline

論文要約

専攻：物質電子化学専攻

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論文題目 (Thesis Title):

Local Behavior of Organic and Biological Molecules at Solid Surfaces Investigated by Vibrational and Nanomechanical Spectroscopy

(振動分光法およびナノ力学測定を用いた材料表面における有機・生体分子の局所吸着挙動に関する研究)

要約 (Outline):

This thesis focuses on the analyses of organic and biological molecules at solid surfaces by vibrational and nanomechanical spectroscopy. The former part of this thesis describes the construction of a system that combines Raman scattering and force spectroscopy while operating in various environments. Using this apparatus, the adsorption states of isocyanide molecules on a gold substrate were studied, and I proposed that the thermal stability of the molecule film significantly increased when prepared at high temperature. In the latter part, light-transmittable ultrasmooth gold films were fabricated to provide versatile platforms for Raman scattering and force measurements. Using the gold films and other patterned substrates, I succeeded in developing a method to evaluate the affinity of solid-binding peptides to various materials.