

日本分光学会中国四国支部講演会のお知らせ

Dr. Mathias Weber (JILA Fellow University of Colorado at Boulder)

日時：平成27年6月3日（水），15：00-16：30

場所：広島大学大学院理学研究科 E002 講義室

<http://www.hiroshima-u.ac.jp/top/access/higashihiroshima/>

タイトル：**Molecular Level Insight into the Chemistry of Transition Metal Complexes –Spectroscopy of Mass-Selected Clusters *in Vacuo*–**

ウエーバー教授は、現在コロラド大学 JILA において、質量分析とレーザー分光を用いて遷移金属錯体の構造や化学反応について活発な研究を行っている若手研究者です。6月8-11日に理研で開催される ”6th International Workshop on Electrostatic Storage Devices” で出席される機会に、広島大学においても講演をお願いしました。皆様の積極的な参加をお待ちしています。

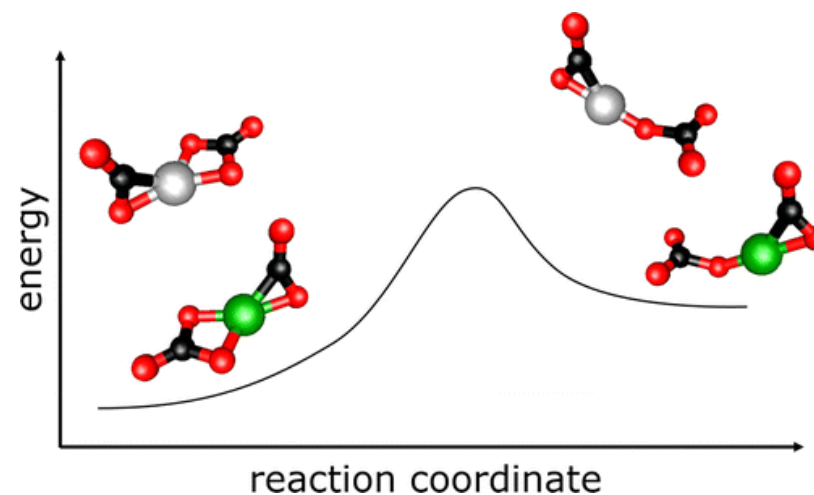
連絡先：江幡孝之，井口佳哉（082-424-7407, e-mail : tebata@hiroshima-u.ac.jp）



Molecular Level Insight into the Chemistry of Transition Metal Complexes –Spectroscopy of Mass-Selected Clusters *in Vacuo*–

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In solutions or on surfaces, the interactions of molecules with their chemical environment play an important role for the molecular properties one can observe. For example, the presence of solvent molecules or ions in the vicinity of a particular molecule will modify molecular electronic and geometric structure as well as molecular behavior, e.g. catalytic activity or photochemistry. However, these interactions are often ignored or accounted for in an averaged way (e.g. as a dielectric constant), since probing the molecular level details of such interactions *in situ* is very difficult. To use heterogeneous catalysis as an example, the complexity of the chemical environment, the multitude of possible interaction sites on many catalysts, and the lack of control over which and how many molecules are at a certain catalytic site at any given moment result in a very complicated response to many spectroscopic probes, hindering the development of a fundamental understanding of the intermolecular interactions that govern the function of catalysts.



The study of mass selected ions provides a convenient way to circumvent such difficulties, because mass spectrometry techniques afford very good control over the composition of the sample under study. In combination with laser spectroscopic methods, mass selected cluster ions afford very good access to the details of intermolecular interactions. I will show several examples for the study of transition metal complexes and cluster ions by infrared and electronic spectroscopy.