



### Weekly Seminar

## Observation of Mode-Specific Vibrational Autodetachment from Dipole-Bound States of Cold Anions



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Time: 4:00pm, April. 2, 2014 (Wednesday)

时间: 2014年4月2日 (周三) 下午4:00

Venue: Room 607, Conference Room A, Science Building 5

地点: 理科五号楼607会议室

### Abstract

Molecules with sufficiently large dipole moments were predicted to form weakly bound negative ions in the dipolar field and such dipole-bound anions have been observed and characterized experimentally. Negative ions with dipolar molecular cores can have excited dipole-bound states (DBS) near the detachment threshold, analogous to Rydberg states in neutral molecules. We report observation of vibrational autodetachment from DBS of cold phenoxide anions using high-resolution photoelectron imaging. Photoelectron spectra are measured from resonant excitations to eight vibrational levels of the DBS. Dramatic resonant enhancement is shown for vibrational modes with weak Franck-Condon factors in the nonresonant photoelectron spectra. Resonant excitation coupled with high-resolution photoelectron imaging of cold anions allows accurate measurement of the binding energies of DBS and can be used to probe the dynamics of DBS and vibrational structures of dipolar radicals.

### About the Speaker

#### 刘洪涛

#### 学习及工作经历:

1997.9 – 2001.7	河南师范大学	学士学位
2001.9 – 2006.10	中国科学院化学研究所	博士学位
2006.12 – 2008.10	德国 Max-Born-Institute	洪堡学者(博士后)
2008.11 – 2010.8	德国 Max-Born-Institute	博士后
2010.9 – 2014.1	美国 Brown University	博士后
2014.2 – 至今	中国科学院上海应用物理研究所	研究员

#### 研究兴趣:

分子团簇的结构和动力学

铜系元素化学, 乏核燃料化学分离过程检测分析技术