



# 学术报告



State Key Laboratory  
of Chemical Resource Engineering

## 高比能锂金属电池电极/电解液界面研究

**报告人:** 焦淑红 副研究员

中国科学技术大学

**时间:** 2019年5月24日 (周五) 上午 11:30-12:00

**地点:** 逸夫会议中心多功能厅



### 报告人简介:

焦淑红, 现任中国科学技术大学化学与材料科学学院副研究员。2011年博士毕业于北京大学化学与分子工程学院; 2011-2013年, 北京大学化学与分子工程学院从事博士后研究工作; 2016-2017年, 美国能源部西北太平洋国家实验室 (Pacific Northwest National Laboratory, PNNL) 任博士后助理研究员; 2017年回国, 在中国科学技术大学工作。主要科研方向包括: 高比能二次金属电池的研发和高性能电催化剂的设计合成与机理研究。科研工作曾多次发表在Nature Energy, Joule, Adv. Mater., ACS Energy Lett., ACS Appl. Mater. Interfaces, J. Phys. Chem. C等杂志。

### 报告内容简介:

Lithium metal anodes have attracted extensive attention for high energy rechargeable Li batteries. However, the long cycling life has been a significant challenge in high energy cells under practical conditions. Improving the interface stability of the electrolyte and electrode materials is the key to realize high energy Li batteries. An effective method to increase electrolyte stability is to control the Li salt to solvent ratio, so that the solvent molecules are mostly coordinated with the cations in the solvent. The reactivity towards the Li metal is suppressed under this condition. Non-dendritic deposition of Li metal is realized for high efficiency Li metal utilization. In addition to electrolytes, the surface chemistry and the architecture of the Li anode also need to be controlled. Careful optimization of both the electrolyte and the electrode materials leads to greatly improved cycling life of cells with specific energy higher than 300 Wh/kg.

化工资源有效利用国家重点实验室  
北京化工大学化学学院  
卫敏教授课题组