

**В четверг 18/06/15 в аудитории 446 в 10-30 состоятся доклады ведущих ученых в области материаловедения и электрохимической энергетики**



**Dr., Assoc. Prof. Ni Jiangfeng**

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Dr. Ni Jiangfeng earned his Ph.D. from Peking University in China in 2008. He then joined National Institute of Advanced Industrial Science and Technology (AIST) in Japan, and moved to National University of Singapore (NUS) in 2010. From February 2011, he joined the College of Physics, Optoelectronics and Energy in Soochow University as Associate Professor. Dr. Ni's research focuses on searching and developing advanced functional materials for rechargeable lithium/sodium ion battery and supercapacitor applications. He has published 7 patent applications and >50 peer-reviewed papers in material and chemistry journals with total citation of over 1100 and H-index of 18.

### **Polyanion Materials for Rechargeable Lithium Batteries**

Phosphates ( $\text{Li}_2\text{MPO}_4$ ) and silicates ( $\text{Li}_2\text{MSiO}_4$ ) are promising polyanion cathodes for rechargeable lithium batteries, owing to their inherent merits such as low cost, decent electrochemical property, and high stability. However, these merits have often been undermined by insufficient energy and power delivery due to poor electron and ion transport kinetics. To address these critical issues, it is essential to take profit of advancements of nanotechnologies. In this talk, I will summarize our recent progress in designing advanced  $\text{LiMPO}_4$  and  $\text{Li}_2\text{MSiO}_4$  cathodes through engineering nanoscale materials, constructing hierarchical architectures, and/or adopting conductive supports, with particular emphasis on how the material innovations could efficiently manipulate their transport property. I will also conclude some general rules to engineer such nanostructures to maximize their utilization towards Li storage.