学 术 报 告

State Key Laboratory of Chemical Resource Engineering

报 告 名 称： Advanced Electrochemical Energy Storage Systems for Vehicle Electrification

报告人：蔡梅 研究员（General Motors ）

时间： 2017-02-24（周五）下午 16:00-17:30

地 点：会议中心中心会议室

报告主要内容：

Electrification in the transportation sector is an emerging trend and battery technology plays the critical role in this revolutionary transformation. The EV application requires the batteries having high energy, high power, robust, long life, and low cost towards specific USABC targets. Unfortunately, the conventional electrode materials and chemistries cannot fulfill the need for electric vehicle usage. Therefore, the development of novel advanced electrochemical energy storage systems is essential to achieve the requirement of batteries for different types of EV applications. This talk will discuss the current status and challenge of silicon or silicon-based Li-ion batteries, Li-S or Li metal based batteries, and high energy density hybrid type supercapacitors. Although there are already major progresses made in the development of each one of the areas during past few years, the performance of such materials and systems can be significantly influenced by many factors, both at the materials and the electrodes level. This talk will further address the parameters that impact both the performance and the cell level energy densities, which include the binders, the electrolytes, the additives, the active material loadings, etc.

报告人简介：

Dr. Mei Cai is a General Motors Technical Fellow and the Manager of Energy Storage Materials Group at General Motors Global Research and Development Center. She has the responsibility for technology innovations in the area of advanced energy storage materials development for vehicular application. She has extensive experience in many of the energy materials research area including solar cells, hydrogen production and storage, nature gas storage, fuel cells, batteries and capacitors. Dr. Cai received her M.S. and Ph.D. degree in 1993 and 1999 respectively, both in Chemical Engineering. She has extensive experience in novel material processing techniques for automotive applications. Her current research interests include synthesizing and processing of nanostructured materials, nanocomposites, and their applications in clean energy field. In particular, she has been working with carbon, graphite, graphene, metal oxides, and their nanocomposites with engineering designed and well controlled nanostructures as energy storage and electrochemical energy conversion materials. Dr. Cai joined the GM R&D staff in 1995. She is the author and co-author of over 100 issued/pending US patents and over 80 peer reviewed scientific publications.

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