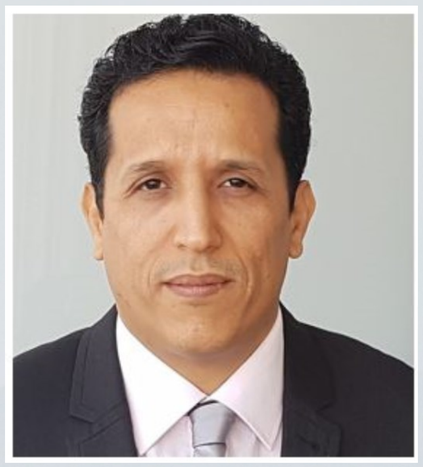
中国科学院大连化学物理研究所

催化与新材料研究中心

学术报告



Spent $LiFePO_4$ Batteries Management: Towards Direct Recycling Strategies

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报告人简介：

Dr Moulay Tahar Sougrati completed his PhD at the University of Rouen, then worked as an assistant at the University of Liège before joining Montpellier University as a CNRS Research Engineer. In 2024, he earned his Habilitation for Research Direction (HDR) from Montpellier University. His primary research focus is on electrochemical energy storage, particularly in Na- and Li-ion batteries, and he is also advancing the application of Mössbauer spectroscopy for the characterization of materials. Since 2009, Dr Sougrati has been investigating various families of anode and cathode materials for lithium and sodium-ion batteries, including phosphates, sulfates, oxides, and intermetallic alloys. He has contributed to the study of reaction mechanisms using operando Mössbauer spectroscopy and is applying this technique to iron-based, precious-metal-free catalysts for oxygen reduction reactions. Since 2020, Dr Sougrati has been exploring innovative recycling strategies, including direct regeneration, mechanochemistry, and CO_2-based metal extraction.

报告摘要：

The market share of $LiFePO_4$ (LFP) batteries has grown significantly, particularly in China, and is rapidly gaining traction in Western markets as well. This surge in demand is leading to a substantial increase in the volume of spent batteries that need to be effectively managed. Unlike cobalt-based batteries, LFP batteries consist of lower-value elements, which makes traditional recycling methods less efficient and economically viable. As a result, direct regeneration of spent LFP batteries has emerged as the most promising approach to managing LFP waste.

This seminar will first delve into the mechanisms responsible for LFP cell degradation. Identifying the causes of degradation is critical for selecting the most effective regeneration strategies. We will then explore three distinct methods for the direct recycling of LFP batteries: in organic media, aqueous media, and a solvent-free route. Finally, we will discuss the key challenges that still impede the widespread implementation of these methods. Furthermore, we will highlight innovative solutions currently being explored in laboratories, offering insights into the future of LFP battery recycling.

时间：2024年12月26日（周四）14:00-16:00　**地点：**航天楼306会议室

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