**Operando Spectroscopy for Chemistry and Material Science**

Date：Jun 2nd, 2023, 10:00am, Peking time

Location：Conference Center 2F, DICP (Xinghai campus)

Zoom：629 595 6560, password：1234

Dr. Moulay Tahar SOUGRATI, Montpellier University, France



Biography:

Dr. Moulay T. Sougrati obtained his PhD from the University of Rouen and later joined Montpellier University. He leads the Mössbauer spectroscopy platform at the Charles Gerhardt Institute, focusing on material characterization in inorganic chemistry, and energy storage. Since 2009, he has researched anode and cathode materials for lithium and sodium ion batteries, investigating reaction mechanisms using Mössbauer spectroscopy. He actively collaborates internationally and is involved in the French Mössbauer Group (GFSM) and European (ALISTORE) and French (RS2E) networks for electrochemical energy storage. Dr. Sougrati specializes in utilizing advanced tools such as Mössbauer spectroscopy and X-ray techniques. He has secured significant funding and mentored many PhD students and Postdocs. His accomplishments include prestigious awards, grants, and administrative roles.

Abstract:

In the last decade, there is reportedly a marked growth in the number of Mössbauer spectroscopy studies covering electrochemical energy storage and conversion applications. As in other Material Science branches, this technique has been very useful in the optimization of the synthesis of innovative materials containing common Mössbauer isotopes such as 121Sb, 119Sn and more frequently 57Fe. Nowadays, operando Mössbauer spectroscopy is routinely used for the investigations of the electrochemical mechanisms of electrode materials. In this presentation, after a general introduction to Mössbauer spectroscopy, we will see how Mössbauer spectroscopy has become indispensable for optimizing the synthesis routes as well as the performance of functional materials. Through examples from our group and other published works, the role and the importance of this technique in battery studies will be highlighted.

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