

SOLVAY COLLOQUIUM



Prof. Jean-Marie Tarascon

Collège de France, Paris

Materials-Electrolyte-sensing Innovations Towards improved and Sustainable Battery Chemistries

As one of the most versatile energy storage technologies, batteries play a central role in the current transition from fossil fuels to renewable energy. Therefore, improving the performance, reliability, longevity and durability of batteries becomes a crucial challenge for the coming years, as it will reduce their environmental footprint and contribute to climate neutrality. To meet this challenge, new material concepts, new chemistries, advanced electrolyte designs and innovative sensing strategies are required. This presentation will address these different aspects with specific examples.

First, in terms of new concepts, we will show how the discovery of anionic redox activity has led to the design of high-capacity, lithium-rich layered oxide or sulfide electrode materials, some of which can be used in solid-state batteries. Concerning new chemistry, we will present our new findings with the Na-ion chemistry that have led to the practical development of the Na-ion technology. Finally, we will present the benefits of adding sensing function to a battery, focusing on optical sensing to improve its lifetime.

Tuesday 15 October 2024 at 4:00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3:45 P.M IN FRONT OF THE SOLVAY ROOM

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