

Colloqui di Fisica

Next generation batteries – mechanisms and stabilisation strategies for Li-metal anodes

Metallic lithium is in many respects the ultimate anode material for high-energy-density batteries. The specific energy of Li-metal is required to match next generation high energy cathode concepts both when using liquid electrolytes and when trying to realise all solid-state batteries. However, the high reactivity of metallic Li, with both liquid and solid electrolytes, leads to low Coulombic used and safety concerns, which are connected to the unavoidable growth of Li dendrites during electrochemical plating process. Several strategies have been proposed to stabilize Li-metal anodes, based on new electrolyte formulations or the development of functional interlayers. In this seminar we will provide an insight into the potential of metal anodes, the fundamental processes taking place and how to follow these experimentally in real time.

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