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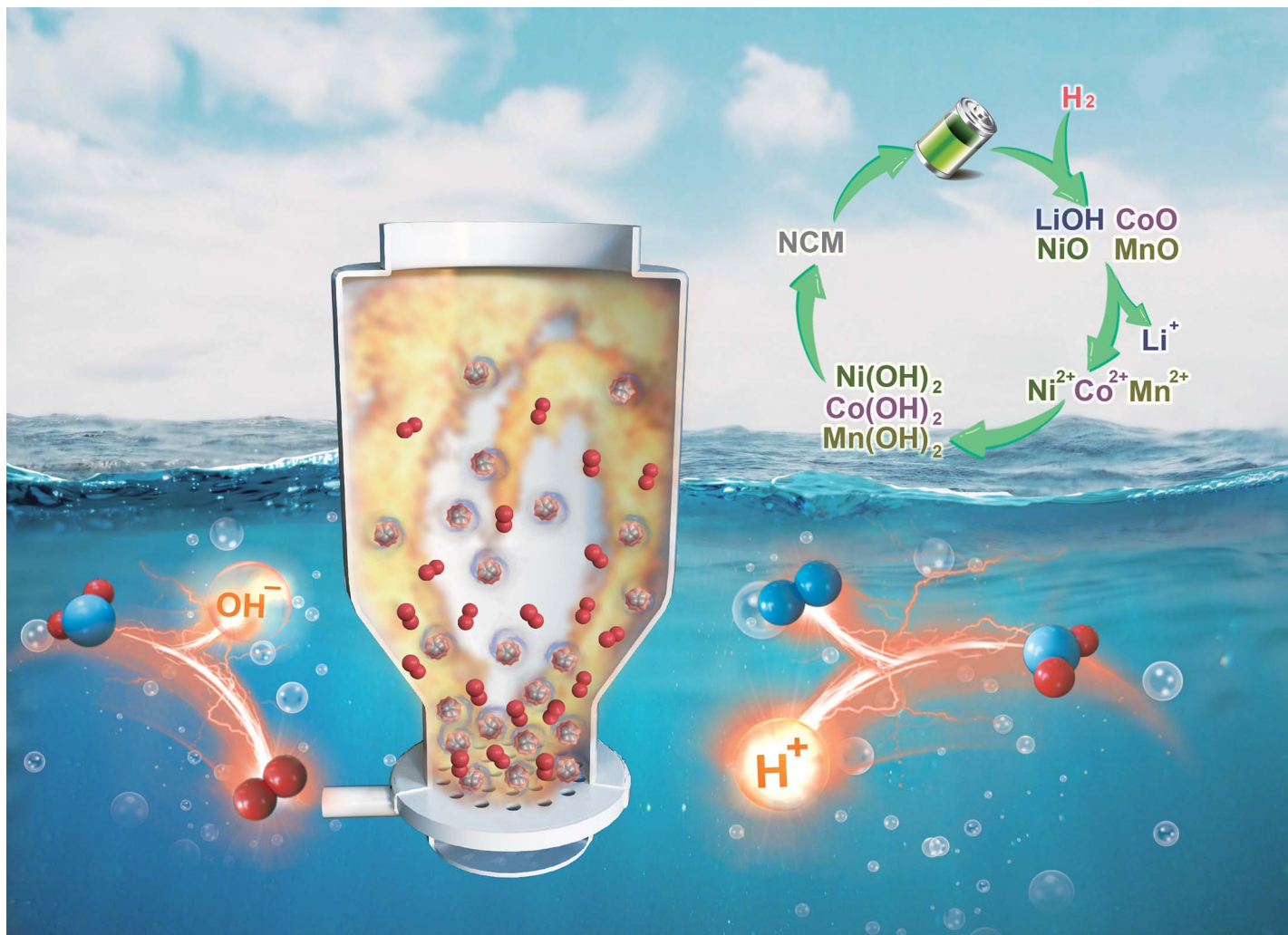
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Showcasing research from Professor Xiaofei Guan's laboratory, School of Physical Science and Technology, ShanghaiTech University, Shanghai, China.

The critical role of  $H_2$  reduction roasting for enhancing the recycling of spent Li-ion battery cathodes in the subsequent neutral water electrolysis

In this work, Ms. Jiayin Zhou (PhD candidate), Mr. Jihong Ni, and Prof. Xiaofei Guan developed a novel process that combines “ $H_2$  metallurgy” and “water electrolysis” for recovering the valuable metal elements from the spent Li-ion battery cathodes. The water electrolysis not only creates a pH gradient for leaching and precipitating the transition metals, but also produces  $H_2$  that is utilized to replace the  $H_2O_2$  for reducing the cathode materials. This process holds great potential for industrial-scale recycling of spent Li-ion batteries in an effective and environmentally friendly way.

As featured in:



See Xiaofei Guan *et al.*, *RSC Sustainability*, 2023, 1, 2241.