



KEMIJSKI INŠTITUT

Vabilo na Preglov kolokvij / Invitation to the Pregl colloquium

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Velika predavalnica Kemijskega inštituta /

Great Lecture Hall

National Institute of Chemistry

Hajdrihova 19, Ljubljana, Slovenia

Electrolyte effects on electrocatalytic hydrogen and oxygen evolution

The electrocatalytic hydrogen and oxygen evolution reactions are the cornerstone reactions of water electrolysis. Here, I will discuss recent advances from my group in how the electrolyte composition determines the rate of these reactions. This complex interplay between electrode and electrolyte is currently still far from being completely understood. For the hydrogen evolution reaction (HER), cations play a key role in alkaline media in promoting or inhibiting the rate-determining step of HER. For the oxygen evolution reaction (OER) on NiFe-oxyhydroxide catalysts, cations have a strong effect on the non-kinetic contribution to the OER rate, suggesting that cations influence the accessibility of the active sites inside the layered oxyhydroxide. Finally, the electrolyte composition can have a major influence on bubble dynamics at high current densities, for both reactions.

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Vljudno vabljeni / Kindly invited