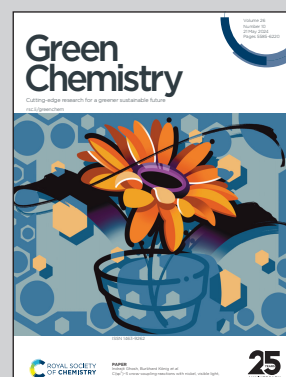


**Showcasing research from Professor Kai Wang's laboratory, Department of Chemical Engineering, Tsinghua University, Beijing, China.**

Low cell voltage electrosynthesis of hydrogen peroxide

Electrochemical oxygen reduction reaction (ORR) *via* a selective  $2e^-$  pathway provides an alternative route for synthesizing  $H_2O_2$ . Reducing the cell voltage of  $H_2O_2$  electrosynthesis reactor is crucial for meeting the industrial demands. This study investigates the impacts of each reactor component on the relationship between cell voltage and current density, and shows that the overpotential of the cathodic solution influences significantly. By optimizing the flow cell reactor,  $H_2O_2$  is successfully synthesized at 2.28 V with 97.1% Faradaic efficiency, corresponding to  $3.7 \text{ kWh kg}^{-1}$   $H_2O_2$  energy consumption.

**As featured in:**



See Kai Wang *et al.*, *Green Chem.*, 2024, **26**, 5869.