

Research article Get rights and content ↗

Suppressing chlorine evolution for durable, selective hydrogen generation from brackish seawater

Kenzhebatyr Zh Bekmyrza [a b], Kairat A. Kuterbekov [a b], Asset M. Kabyshev [a b], Aliya A. Baratova [a b] ✉, Marzhan M. Kubenova [a b], Nursultan Aidarbekov [a b], Farruh Atamurotov [c d e] Show more ∨

Cite Add to Mendeley Share 10.1016/j.electacta.2025.147867 ↗

Electrochimica Acta

Date: 20 January 2026

Article: 147867

Volume: Volume 547

View accessibility information

Published by

ELSEVIER

Purchase PDF Access through another organization

Article preview Recommended articles Metrics

Highlights

- Cr_2O_3-passivated NiFeMo anode enables chlorine-suppressed AEM seawater electrolysis.
- Natural brackish seawater feed; 1.0 A cm^{-2} at 1.89 V (60 °C) in a 10 cm^2 AEM cell.
- Gas-phase Cl_2 undetected by GC; O_2 FE 99.2 % and H_2 FE 99.8 % at 1.0 A cm^{-2}.
- 500 h continuous operation at 1.0 A cm^{-2}; voltage 1.89→1.93 V (~80 μV h^{-1}).
- Post-mortem shows intact nanosheets, stable Cr^{3+}; minimal chlorine accumulation.

Article preview

Abstract

Introduction

Section snippets

References (74)

Активация Windows

Чтобы активировать Windows, перейдите в раздел "Параметры".