

Regulating Hydrogen Energy Evaluation During Aluminium Hydrolysis in Alkaline Solutions Containing Different Surfactants

Authors : Mohamed A. Deyab, Omnia A. A. El-Shamy

Abstract : The purpose of this study is to reveal on the systematic evaluation of hydrogen production by aluminum hydrolysis in alkaline solutions containing different surfactants using hydrogen evolution measurements and supplemented by scan electron microscope (SEM) and energy dispersive X-ray analysis (EDX). It has been demonstrated that when alkaline concentration and solution temperature rise, the rate of H₂ generation and, consequently, aluminum hydrolysis also rises. The addition of nonionic and cationic surfactants solution retards the rate of H₂ production. The work is a promising option for carbon-free hydrogen production from renewable resources.

Keywords : energy, hydrogen, hydrolysis, surfactants

Conference Title : ICITGC 2023 : International Conference on Intensification Technologies for Green Chemistry

Conference Location : Amsterdam, Netherlands

Conference Dates : August 03-04, 2023