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Author: Ruderman M.F. Juarez G. Soldano L. Avalle G. Beltramo M. Giesen E. Santos



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**Current transients for the hydrogen evolution reaction at high
overpotentials on silver electrodes in acid solutions:**

Experiments and Modelling

A. Ruderman^{a,b}, M. F. Juárez^a, G. Soldano^a, L. Avallé^b, G. Beltramo^c, M. Giesen^c
and E. Santos^{a,b}

^aInstitute of Theoretical Chemistry, Ulm University. Albert-Einstein-Allee 11,
Ulm, Germany.

^bInstituto de Física Enrique Gaviola (IFEG-CONICET), Facultad de
Matemática, Astronomía y Física, FaMAF-UNC. Cordoba, Argentina.

^cInstitute of complex systems (ICS-7), Jülich Forschungszentrum GmbH,
52425 Jülich, Germany.

Abstract

The hydrogen evolution reaction has been investigated on Ag(100) by potentiostatic current transients at high overpotentials ($\eta > 0.7\text{V}$) in acidic solutions. The reaction proceeds via the Volmer – Heyrovsky mechanism, simultaneously coupled with desorption of sulphate / disulphate anions. Volmer is the rate determined step, although the Heyrovsky reaction is only slightly faster. The kinetic parameters have been obtained under various conditions of pH and concentration of anions. A catalytic effect due to the presence of anions has been observed.

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