

Accepted Manuscript

Facilitated proton transfer across liquid|liquid interfaces under forced hydrodynamic conditions. Determination of partition coefficients of neutral weak bases

F. Vega Mercado, J.M. Ovejero, F.M. Zanotto, M.R. Serial, M.I. Velasco, R.A. Fernández, R.H. Acosta, S.A. Dassie



PII: S1572-6657(17)30154-6
DOI: doi: [10.1016/j.jelechem.2017.03.005](https://doi.org/10.1016/j.jelechem.2017.03.005)
Reference: JEAC 3170
To appear in: *Journal of Electroanalytical Chemistry*
Received date: 28 December 2016
Revised date: 15 February 2017
Accepted date: 2 March 2017

Please cite this article as: F. Vega Mercado, J.M. Ovejero, F.M. Zanotto, M.R. Serial, M.I. Velasco, R.A. Fernández, R.H. Acosta, S.A. Dassie , Facilitated proton transfer across liquid|liquid interfaces under forced hydrodynamic conditions. Determination of partition coefficients of neutral weak bases. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jeac(2017), doi: [10.1016/j.jelechem.2017.03.005](https://doi.org/10.1016/j.jelechem.2017.03.005)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Facilitated proton transfer across liquid|liquid interfaces under forced hydrodynamic conditions. Determination of partition coefficients of neutral weak bases.

F. Vega Mercado¹, J.M. Ovejero¹, F.M. Zanotto¹, M.R. Serial², M.I. Velasco², R.A.

Fernández¹, R. H. Acosta², S.A. Dassie^{*,1}

¹Instituto de Investigaciones en Fisicoquímica de Córdoba (INFIQC) - CONICET, Departamento de Fisicoquímica, Facultad de Ciencias Químicas, Universidad Nacional de Córdoba, X5000HUA, Ciudad Universitaria, Córdoba, Argentina.

²FaMAF-Universidad Nacional de Córdoba and IFEG-CONICET, X5000HUA, Ciudad Universitaria, Córdoba, Argentina.

Abstract:

A novel quantitative methodology to determine the partition coefficients of neutral weak bases is developed. This new electrochemical approach is based on the measurement of the total transferred charge across the oil|water interface under forced hydrodynamic conditions. The complete procedure has been validated by computational simulations and experimental results (Tylosin A). In addition, flow pattern caused inside the electrochemical cell were simulated with computational fluid dynamics using finite element methods and correlated with experimental results obtained by magnetic resonance imaging.

Keywords: Finite element method, partition coefficient, facilitated proton transfer, liquid|liquid interface, forced hydrodynamic conditions, Magnetic Resonance Imaging.

Download English Version:

<https://daneshyari.com/en/article/4907957>

Download Persian Version:

<https://daneshyari.com/article/4907957>

[Daneshyari.com](https://daneshyari.com)