

1096-65-1870

Jakob Hansen* (jakob.hansen@asu.edu). *Improving conditioning for the electrochemical impedance spectroscopy inverse problem.*

Analysis of the performance of fuel cells often requires finding a distribution function of relaxation times (DRT) from measured electrochemical impedance spectra. This problem, described by a Fredholm integral equation, is inherently ill-posed. Discretization for solution by linear least squares introduces further numerical ill-conditioning. A reformulation of the problem through a change of variables can minimize the effects of this ill-conditioning and improve the quality of problem solutions obtained by Tikhonov regularization. (Received September 16, 2013)