

**PPDO-083**  
**Computer Analysis of Electrochemical and Nanocatalyst Systems**

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**Abstract**

A mathematical model for an electrochemical module will be developed in Fluent (a computer code for computational fluid dynamics (CFD)). In order to solve electrochemical systems, Fluent requires as an input the potential distribution and current distribution as user functions which are coupled with the species transport, hydrodynamics and heat transfer.

In the future we hope to use this module for more complicated electrochemical process modeling, which may include 3-dimensional geometry, turbulence, and multiphase flows.