# Electrochemical Pickling of Steel for Industrial Applications: Modeling

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## Abstract

The electrochemical pickling of steel has two main purposes:

1) To remove thermal oxide;
2) To dissolve chromium-depleted layer, to reinstate the corrosion-resistant properties of the stainless steel;

A reliable, flexible and robust 3D model has been made for simulating the steel electrochemical pickling. This process is modeled as a multiphysics system for the current control. The model describes the secondary current distribution, including Tafel laws. The implemented model allows to analyze the potential and current density distribution in an industrial cell for electrochemical pickling.

## Reference

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