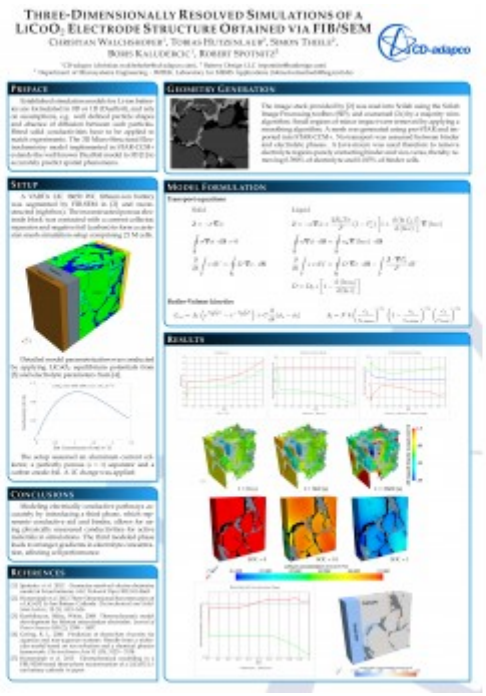
Published on *CD-adapco* (http://www.cd-adapco.com)

3D Micro-Structural Electrochemistry model



Publisher:
Christian Walchshofer, Tobias Hutzenlaub, Simon Thiele, Boris Kalaudercic, Robert Spotnitz
Date:
Thursday, August 1, 2013
Abstract:

Established simulation models for Li-ion batteries are formulated in 0D or 1D (Dualfoil), and rely on assumptions, e.g. well defined particle shapes and absence of diffusion between such particles.

Fitted solid conductivities have to be applied to match experiments. The 3D Micro-Structural Electrochemistry model implemented in STAR-CCM+ extends the well known Dualfoil model to 3D, in order to be able to accuratelypredict spatial phenomena.

3D Microstructrue Electrochemistry Model.pdf[1]
Products:
STAR-CCM+® [2] ? Add-ons ? Battery Simulation Module?[3]
Industries:
Ground Transportation [4] ? Ground Transportation - Application ? PowerTrain[5]
Ground Transportation [4] ? Ground Transportation - Sub-Industry ? Automotive[6]

CD-adapco is the world's largest independent CFD focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation.

Source URL: http://www.cd-adapco.com/technical_document/3d-micro-structural-electrochemistry-model?page=0%2C6

Links:
[1] http://www.cd-adapco.com/sites/default/files/technical_document/pdf/3D%20Microstructrue%20Electrochemistry%20Model.pdf
[2] http://www.cd-adapco.com/products/star-ccm%C2%AE
[3] http://www.cd-adapco.com/products/star-ccm%C2%AE/battery-simulation-module%E2%84%A2
[4] http://www.cd-adapco.com/industries/ground-transportation
[5] http://www.cd-adapco.com/industries/ground-transportation/%E4%BC%A0%E5%8A%A8%E7%B3%BB%E7%BB%9F
[6] http://www.cd-adapco.com/industries/ground-transportation/%E6%B1%BD%E8%BD%A6