

Modeling And Simulation Of Microstructure Evolution In Solidifying Alloys



Modeling And Simulation Of Microstructure

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This section introduces the main tools currently used in tribological modeling, starting from analytical models and discussing continuous and discrete mechanical and multiphysical methods suitable for simulations characterized by different time- and length-scales (see Fig. 1 for a map of representative tribological models built across the scales), namely finite and boundary element methods ...

Modeling and simulation in tribology across scales: An ...

where k_0 is the pre-exponential factor, E_A is the activation energy of the reaction and R is the universal gas constant. Determining the reaction rate coefficients is often a challenge to modeling reactions, especially in electrochemical devices where multiple reaction steps and pathways exist.

Mesoscale modeling in electrochemical devices—A critical ...

Various concepts exist to introduce texture-related sheet anisotropy into finite element models for sheet forming. The initial material anisotropy existing before sheet deformation can be incorporated either through an anisotropic yield surface function or directly via the incorporation of crystallographic texture models into the finite element codes.

sheet forming, modeling, simulation, texture, crystal ...

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stainless steel. microstructure, texture, thin strip ...

Equations of the Phase field model. Phase field models are usually constructed in order to reproduce a given interfacial dynamics. For instance, in solidification problems the front dynamics is given by a diffusion equation for either concentration or temperature in the bulk and some boundary conditions at the interface (a local equilibrium condition and a conservation law), which constitutes ...

Phase field models - Wikipedia

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