

# Simulation in Metallurgical Processing: Recent Developments and Future Perspectives

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This plenary talk briefly addresses the most important topics concerning numerical simulation of metallurgical processes, namely, multiphase issues (particle and bubble motion and flotation/sedimentation of equiaxed crystals during solidification), multiphysics issues (electromagnetic stirring, electroslag remelting, Cu-electro-refining, fluid–structure interaction, and mushy zone deformation), process simulations on graphical processing units, integrated computational materials engineering, and automatic optimization via simulation. The present state-of-the-art as well as requirements for future developments are presented and briefly discussed.