JOM Call for papers

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Bridging Scale Gaps in Multiscale Materials Modeling in the Age of AI

Multiscale Materials Modeling has seen decades of efforts and progress, but challenges remain in bridging different length/time scales across models. Lower-scale simulation results are difficult to construct into physics-based constitutive equations, hampering their transferability to higher-scale models. These challenges intensify with growing interests in chemically complex materials and extreme conditions in advanced materials processing. The emergence of data-driven techniques – particularly artificial intelligence (AI) – offers new possibilities to overcome these obstacles. This special topic focuses on the integration of computational material science and AI, highlighting their applications in bridging different-scales models, towards a better explainability/prediction of relevant experimental observations.

Original research papers should be 3,000-9,000 words with up to 12 figures maximum; review papers should be 6,000-11,000 words with up to 20 figures maximum.

Detailed author instructions are available at:
http://www.tms.org/AuthorTools/

Keywords for this topic: Advanced Materials; Advanced Processing; Computational Materials Science & Engineering; Modeling and Simulation; Physical Properties

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