

MATERIALS RESPONSE TO EXTREME CONDITIONS

300-MULTISCALE AND MULTIPHYSICS SYSTEMS

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ABSTRACT

This minisymposium is an interdisciplinary forum for discussion of new advances on the fundamental science and applications of materials under extreme conditions. The focus is on new experiments, models and computational methods towards understanding the dynamic and shock-induced mechanical, physical, and chemical behavior of materials. Topics of interest will include:

- Shock-induced material response, including fracture and plasticity.
- High strain rate behavior in metals and energetic and reactive materials.
- Heat induced by interfacial friction, fracture, plasticity and void collapse.
- Dislocation dynamics and atomistic simulations during shock compression and release in metals and explosives.
- Phase changes due to the influence of pressure, shear and temperature under shock conditions.
- Detonation and shock induced chemistry at molecular and continuum level.