

MS- Novel computational methods with applications in continuum mechanics
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Simulation of engineering applications is used in many branches from solid mechanics to fluid dynamics by involving temperature change, chemical reaction, and electromagnetic effects. Miniaturization and additive manufacturing create multiscale materials. The so-called multiphysics simulations by involving multiscale materials force us to develop novel computational methods. Many topical applications exist such as damage modeling in strain gradient materials, thermomechanics of curing epoxy, solidifying 3-D printed layers in FDM or hardening 3-D printed sheets in SLA, electromigration in alloys, electrocardiogram and blood flow in organs, heat dissipation in microchips, fatigue failure via thermal stress,... This minisymposium welcomes computational methods in FEM, level set methods, mixed formulation, contact mechanism, coupled vs. staggered algorithms used for multiphysics and/or multiscale problems in order to ignite discussions, share, and exchange.