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Nota di contenuto	Micromechanical Modelling of Void Healing -- Surface Viscoelasticity and Effective Properties of Materials and Structures -- High-temperature inelastic behavior of the austenitic steel AISI type 316 -- Finite Element Modelling of the ThermoMechanical Behaviour of a 9Cr Martensitic Steel -- Enhanced Global Digital Image Correlation for accurate measurement of microbeam bending -- An Investigation of the Mechanical Properties of Open Cell Aluminium Foam Struts: Microtensile Testing and Modelling -- Multiscale Optimization of Joints of Dissimilar Materials in Nature and Lessons for Engineering Applications -- Some consequences of stress range dependent constitutive models in creep -- Micro-mechanical numerical studies on the stress state dependence of ductile damage -- Characterization of load sensitive fatigue crack initiation in Ti-alloys using crystal plasticity based FE simulations -- Creep Crack Growth Modelling in 316H Stainless Steel -- On the non saturation of cyclic plasticity law: a power law for kinematic hardening -- Micromechanical studies of

deformation, stress and crack nucleation in polycrystal materials --
Modeling of coupled dissipative phenomena in engineering materials
-- Damage Deactivation of Engineering Materials and Structures --
Effect of orientation and overaging on the creep and creep crack
growth properties of 2xxx aluminium alloy forgings -- Dislocation-
Induced Internal Stresses -- A strain rate sensitive formulation to
account for the effect of ' rafting on the high temperature mechanical
properties of Ni-based single crystal superalloys.

Sommario/riassunto

This volume presents the major outcome of the IUTAM symposium on "Advanced Materials Modeling for Structures". It discusses advances in high temperature materials research, and also provides a discussion the new horizon of this fundamental field of applied mechanics. The topics cover a large domain of research but place a particular emphasis on multiscale approaches at several lengthscales applied to non linear and heterogeneous materials. Discussions of new approaches are emphasised from various related disciplines, including metal physics, micromechanics, mathematical and computational mechanics.
