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Sommario/riassunto	"Engineering Physics of High Temperature Materials: Metals, Ice, Rocks and Ceramics addresses an issue that is universally acknowledged and documented - that is, what causes a material to deform and fail at high temperatures and, more importantly, what are the mechanisms involved in the deformation processes leading to failure. This applies to ice, glass, ceramics, rocks and complex high-temperature alloys, including single crystals, used in gas-turbine engines. Volume highlights include: Experimental and theoretical studies on temperature-microstructure dependent delayed-elasticity (used to be called 'anelasticity') at high homologous temperatureA that hasA ready applications to the analysis of lithosphere-asthenosphere boundary (LAB) temperature regime inferred from seismic velocities Establishes the facts that engineering physics of polycrystalline ice and ice sheets, floating on their own melt, hence at extremely high homologous temperatures, are analogous to Earth's Asthenosphere and complex engineering materials like metallic alloys and ceramics used at high temperatures > 0.4Tm, where Tm is the melting point Presents and emphasizes the fundamental grain-scale and lattice-scale (dislocations

slip, climb and pileups) microstructural and micromechanical similarities of apparently different materials, such as metals, metallic alloys, ice, rocks and ceramics Development of novel experimental technique, 'Strain Relaxation and Recovery Test (SRRT)' for characterization of the pivotal, yet neglected, role of delayed elasticity in shaping the primary creep, and nucleation and multiplication of grain-boundary cracks during this period Development of Elasto-Delayed Elastic-Viscous (EDEV) equation that offers unified mathematical and physical descriptions of the (a) shapes of 'constant-stress creep curve' (primary, transitional minimum creep rate and tertiary), (b) 'constant strain-rate stress-strain curve' and (c) 'constant-strain stress relaxation' Engineering Physics of High Temperature Materials is a valuable resource for students and researchers in the field of crystallography, mineralogy, petrology, structural geology, metamorphic geology, geophysics, glaciology, tectonics, engineering, mechanics, thermodynamics, high-temperature deformation, physics, metallurgy, ceramics, alloys, and material sciences."--