Study of Metal-ceramic Interactions at Elevated Temperatures: Progress Report - Massachusetts Institute of Technology, 1952 - 1952 - F. H. Norton, W. D. Kingery

Various aspects of creep and deformation behavior of metals and alloys at elevated temperatures are of great interest to materials scientists. Creep resistance is an extremely important characteristic to be evaluated for structural materials that are used, for example, in aircraft gas turbines, fossil power plants, nuclear reactors, etc.Â The present study is focused on the mutual comparison of the creep properties of the above-mentioned superalloys, their creep and fracture behaviour and the identification of creep deformation mechanism(s). Standard constant load uniaxial creep tests were carried out up to the rupture at applied stress ranging from 150 to 700 MPa and temperatures of 800â€“1000 Â°C. The experimentally determined. The particular aspects of high-temperature aqueous physical chemistry of interest to one industry may be irrelevant to another; yet another industry might need the same basic information but in a very different form.To serve all these constituencies, the book includes several chapters that cover the foundational thermophysical properties (such as gas solubility, phase behavior, thermodynamic properties of solutes, and transport properties) that are of interest across numerous applications. The presentation of these topics is intended to be accessible to readers from a variety of backgrounds.Â Chapter 9 Stable isotope partitioning in aqueous and hydrothermal systems to elevated temperatures. 277. Chapter 10 Transport properties in high temperature and pressure ionic solutions. 321. Studies of remediation involving iron-containing nanomaterials are discussed and special attention is paid to the processes of remediation of organic contaminants (chlorine-containing pollutants, benzoic and formic acids, dyes) and inorganic cations (Zn(II), Cu(II), Cd(II) and Pb(II)) and anions (nitrates, bromates, arsenates).Â Dr Boris I. Kharisov (born in Russia in 1964) is currently a Professor and Researcher at the Universidad AutÃ³noma de Nuevo LeÃ³n (UANL). Degrees: An MS in 1986, in radiochemistry and a PhD in inorganic chemistry in 1993, from the Moscow State University, Russia; Dr Hab. in physical chemistry in 2006 from Rostov State University, Russia. He is the co-author of six books, 122 articles, five book chapters, and has two patents. Metal samples were placed onto ceramic substrates, and the system was heated to elevated temperatures past the melting point of the metallic specimen. After a short stay at the peak temperature, the system was cooled to room temperature and examined.Â This paper reports on the condition of the interfaces in the different systems studied and describes possible mechanisms influencing the microstructure. Discover the world's research. 19+ million members.Â It was observed that the Zr is very active in the wetting of nitride ceramics at elevated temperatures. This interaction began at high temperatures before Zr melting, and a reactive transition phase formed between the ceramic and the metal. Ultrathin reactive metal films on TiO2(110): growth, interfacial interaction and electronic structure of chromium films. Surface Science, Vol. 295, Issue. 3, p. 411.Â 23.Allen, B.C. and Kingery, W.D., â€œSurface Tension and Contact Angles in Some Liquid Metal-Solid Ceramic Systems at Elevated Temperatures,â€ Trans. Metall. Soc.