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Reactor Pressure Vessel Steels under Irradiation

The Ageing of Beryllium Bronze in the Pulse Magnetic FieldThe Influence of Ti and Zr on the Diffusion of Isotope 63Ni in the Iron Surface Layer at Electric-Spark Alloying in Carbon Containing Environment; Effect of an Impulse Loading on Localization of Diffusing Atoms in Metals; Section 3 - General Problems of Diffusion; Atomic Mechanism of Carbon Diffusion in Cementite; Extended 'Five-Stream' Model for Diffusion of Implanted Dopants in Silicon during Ultra-Shallow Junction Formation in VLSI Circuits; Atomic-Migration-Controlled Processes in Intermetallics

Dependence of Diffusion Paths on Thermodynamic Factors in Ternary Systems Simulation of Pressure Effects on Self-Diffusion in BCC Metals; The Effect of Point Defects Interaction on Hydrogen Atom Diffusion in FCC- and BCC-Metals ; Section 4 - Structural & Phase Transformations; Numerical Simulation of Precipitates Evolution in Iron-Based Alloys; The Analysis of the Selective Oxidation of Multicomponent Alloy; Complex Phase Behavior of Systems with Negative Curvature Potentials

3D Monte Carlo Simulation of Phase Separation Kinetics in a Binary Metallic Alloy with Vacancy Mediated Diffusion: Effect of Initial Supersaturation Size-Induced Freezing Effect in Monte-Carlo Simulations of Phase Separation Kinetics in Nanoparticles ; Diffusion during Powder Metallurgy Synthesis of Titanium Alloys; Composition Fluctuations in the Ostwald Ripening; Kinetic and Thermodynamic Precipitation Parameters of the Pb-Sn Solid Solutions ; Section 5 - Surface and Grain Boundary Diffusion

Surface Diffusion in Coadsorbed Layers with Different Mobilities of Adsorbates: (Li +Dy) on Mo(112) and (Li+Sr) on W(112)

Sommario/riassunto

Diffusion-controlled processes still remain the most important and interesting phenomena in materials science. Among the problems which are currently to the fore, are the synergy of diffusion and morphological evolution, the initial stages of solid-state reactions, the analysis of nano- materials and related phenomena, thermo- and electromigration, and the reliability of solder joints and interconnects in microelectronic devices. A number of challenging problems still remain within the ""classical"" areas of nucleation, reactive- and inter-diffusion, phase growth in multicomponent and binary s