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Prospects of Fracture Mechanics

By D. Broek

Springer Aug 2014, 2014. Taschenbuch. Book Condition: Neu. 24.4x17x cm. This item is printed on demand - Print on Demand Titel. Neuware - InhaltsangabeSection I Inclusions and Void Growth.- A critical assessment of plastic hole-growth mechanisms of ductile fracture.- Particles and crack growth in aluminum alloys.- Observations of cavity nucleation, growth and coalescence in dimpled rupture.- Propagation of cleavage microcracks in triaxial stress fields.- Section II Energy Criteria and Path Independent Integrals.- The calculation of energy release rates.- Surface layer energy and strain energy density for a blunted crack or notch.- Development of the nonlinear energy method for determination of fracture toughness values.- The importance of stable crack extension in linear and non-linear fracture mechanics.- Path independent integrals in fracture mechanics and their relation to variational principles.- Section III Fatigue Crack Propagation.- The influence of fracture toughness on sub-critical flaw growth.- Experimentally observed plasticity effects on crack closure and subcritical crack growth.- Fatigue crack growth under variable-amplitude loading.- Modeling of the phenomena of fracture in solids.- Load and environment interactions in fatigue crack growth.- Section IV Dynamics and Arrest.- An analysis of dynamic crack propagation and arrest for a material having a crack speed dependent fracture toughness.- Temperature dependence of...


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