<<                                                                                   >>

<<                                                        >>

13   ISBN         9787562829065

10   ISBN         7562829063

         2010-10

                                                            (2010-10     )

         427

                          PDF

                http://www.tushu007.com

PrefaceGreener and higher energy efficiency for materials and structural systems sustaining againstaggressive environmentConsideration of material aging properties in longer-term failure predictions of cracked componentsCoupling effect of creep deformation and internal stress on scale growth under the applied bendingResidual stresses in welded nuclear power componentsCurrent research topics for nondestructive reliability evaluation in NIMSRelaxation of residual stresses and grain boundary fracture in 316H stainless steelEffects of service cycles on the microstructure and tensile property of K4648 superalloyCharacterization of mechanical properties of HP40Nb using indentation creep testExperimental study on the mechanical properties of HI 3-TIC composite coatingsExperimental study on creep-ratcheting-fatigue interaction of SS304 stainless steel at room and high temperaturesHigh-temperature corrosion-resistance property of Fe-A1/Cr3C2RE composite coatings produced by HVFSComparison of ductile-to-brittle transition curve fitting approachesMicrostructure and intergranular corrosion of 316L stainless steel diffusion bonded jointAccelerated pitting corrosion of welded SUS304 under freezing and thawing corrosive environmentKazunori Ishitsuka, Junichi Shibano, Tsuyoshi Takahashi, Setsuo Miura, Michiaki KobayashiBending fretting fatigue damages of 316L anstenitic stainless steel plates against 52100 steel cylindersStress corrosion crack study of 304 and 316L stainless steel in dye solutionCorrosion resistance of 321 stainless steel in high-temperature naphthenic acidResearch on anisotropy properties of A350 pressure vessel steel forging by small punch testPrediction methodology of stress relaxation performance based on continuum damage mechanicsStrengthened with carbon fiber sheets and its implementationFailure analysis of 20G boiler tubesA study on the plasma treatment effect carbon fibers on the wear properties of carbon/epoxy woven compositesRelationship between elevated strength and brazing parameters of Inconel Superalloy vacuumbrazed jointsTemperature rise rate of steam turbine at cold-state start-up considering the hardness changes ofrotor materialsEffect of solid solution treatment on microstructure and properties of 0Cr1 8Ni9 Austenite stainlesssteel butt-welding pipe fittingsThe influence of tensile stress on the magnetic memory signals of Q345R steelFracture mechanism of low cycle fatigue of 30Cr1MoIV steel at different loading ratesDetermination of mode I fracture toughness, Gic, of dispersion improved clay/epoxy nanocompositesAnalysis of fracture property for beam-column connections of steel frame with cracksFree vibration analysis of thin rectangular cracked plate with four free edges on nonlinear elastic foundationFailure mechanism of inconel 718 at elevated temperatureDamage tolerance assessment and test verification for an aeroengine crankcaseThermal damage of cementitious materials: an elasto-plastic damage model for plain concretesubjected to high temperaturesTwo-step damage identification approach for a multi-layer concrete frame structure based on waveletanalysis and BP neural network3-D numerical of simulation of concrete failure process based on dynamic damageQuantitative characterization and analysis of creep constraint induced by specimen thicknesses incompact tension specimensExperimental study on residual fatigue life for a nickel-based powder metallurgy superalloyFatigue crack growth behavior in stainless steel under cyclic torsionA numerical method to simulate ductile failure of tensile plates with interacting through-wall cracksNumerical simulation of crack propagation and coalescence in plates under creep conditionsResearch on effect of anti-vibration bars on dynamic characteristic of U-tubes in steam generatorFatigue-cracking representation and its evolution for spherical contactsPrediction of creep life in terms of dissipated powerStudy on imit load and safety assessment method for pressure pipe with an internal pit at high temperatureEvaluating residual stress behaviour in 316H stainless steel using neutron diffractionLimit loads for part-through surface axially cracked elbows under internal pressureSafety assessment of pipes with multiple local wall thinning defects under bending moment~Effect of the applied torque on the PEM fuel cell performanceContact resistance and contact behavior prediction between the bipolar plate and the GDL in a proton exchange membrane fuel cellA new form of strain gradient elasticityStructure strength and safety analysis of CO2 stripper with large opening under vertical positionReinforcement of pressure vessels with large openingFinite element analysis on welding residual stresses of T-jointFinite element analysis on the contact stress of automotive water pump beating's sealNumerical investigating the effect of braze processing parameters on residual

stresses in an X-typelattice truss sandwich structureNumerical simulation of electromigration failure in IC interconnect structuresNumerical simulation and structure optimization of coal-liquefying reactorFEA analyses under tension and bending fretting fatigue modesFinite element stress analysis of semi-trailer liquefied petroleum gas tankerAnalysis of uneven settlement effects on the widened bridgeIdentification of structural parameters by the weighted least square method based on wavelet packet transformStudy on the non-probabilistic interval reliability of pressure pipe containing defectsA new DEM for interaction between adjacent RC membrane structuresA new method for assessment of spurious trip in safety instrumented systemOn-line monitoring of high-temperature piping by strain sensing unitsSimulation of inclusion shape change in steel strips during cold rollingA method of assessing power-law creep constants using small punch creep test in high temperature componentsRatcheting analysis of pressurized piping with pit defectsAuthor indexKeywords index

Fig. 8 represents the growths of crack size with the time. Both of the crack depth and half crack length increases steadily with the increasing time. The half crack length shows a sudden increase when the coalescence of the cracks occurs. In the end of the whole simulation, the growths of crack size are accelerated by the dramatical increment of the $C^*$-integral, as shown in Fig. 9. In this figure, the variation of the maximum $C^*$-integral is plotted against the time, which represents almost the same trend as those of crack size. In an engineering assessment for FFS, the interaction of multiple cracks is taken into account by applying combination rules, as listed in Table 2. According to the crack coalescence criteria of the standards, each crack is assumed to grow in isolation before the coalescence; when the distance of cracks satisfied the prescribed condition, adjacent cracks will join together. Hypotheses are proposed that the depth of the newly formed crack is equal to the depth of the deeper of the two pre-existing cracks and the surface length is equal to the sum of their lengths and minimum distance. When FE method is inaccessible, the propagation of multiple creep cracks can be predicted by utilizing the combination rules together with the $C^*$-integral estimating methods, more especially, the reference stress methods.

(              )

PDF

:http://www.tushu007.com