

Subject Index

A

A1N steel grade, 279-296
 actuators, 227-240
 Al-Li, 241-253
 as-forged, 489-503
 ASTM E1820-08, 130-158
 ASTM E561-05, 130-158
 axial fatigue, 421-440

B

base metal (BM), 355-368
 beam-to-column connection, 675-695
 bi-modal master curve, 116-129
 biaxial loading, 394-420
 brazed joint, 504-519
 bridging stress, 520-552

C

casting defects, 631-645
 cladding, 394-420
 cleavage fracture, 178-193
 coatings, 646-674
 cobalt-base superalloy, 421-440
 cohesive zone, 675-695
 cohesive zone modeling, 646-674
 compression pre-cracking, 279-296
 compression precracking, 297-319
 contact stresses, 553-569
 crack, 570-585
 crack closure, 297-319
 crack growth, 90-115
 crack initiation, 197-216
 crack interaction, 604-619

crack opening displacement, 520-552, 3-73
 crack tip blunting, 3-73
 cracks, 241-253
 creep, 227-240
 crystalline plasticity, 197-216
 cumulative fatigue, 421-440

D

damage, 227-240
 defect, 371-393
 delamination, 520-552
 deposited metal (DM), 355-368
 disappearing filament pyrometer (DFP), 620-628
 ductile crack growth, 130-158
 ductile tearing, 3-73
 ductile to cleavage fracture mechanism transition, 159-177
 ductile-to-brittle transition, 3-73
 ductile-to-brittle transition region, 116-129

E

edge cracks, 604-619
 edges, 489-503
 EFGM, 604-619
 El-Haddad, 320-335
 elastic follow-up, 570-585
 electroactive polymers, 227-240
 emissivity, 620-628
 endurance limit, 504-519
 EURO data set, 116-129

F

fatigue, 489-503, 227-240, 241-253, 320-335, 675-695, 631-645
 fatigue assessment postprocessor, 631-645
 fatigue behavior, 217-226
 fatigue crack, 504-519
 fatigue crack growth, 520-552
 fatigue crack propagation, 336-354, 3-73
 fatigue crack propagation (FCP), 355-368
 fatigue tester, 254-275
 fatigue, welded joint, two-scale model, damage, crack initiation, 466-485
 fatigue-crack growth, 297-319
 fiber metal laminate, 520-552
 finite element, 675-695
 finite element analysis, 553-569
 finite element method, 646-674
 fracture mechanics, 320-335
 fracture test, 90-115
 fracture toughness, 77-89, 130-158, 646-674, 394-420
 fretting, 441-465, 241-253
 friction, 553-569

G

geometrically necessary dislocations, 197-216
 girth radial direction (CR), 355-368
 GLARE[®], 520-552

H

heat affected zone (HAZ), 355-368
 high cycle fatigue, 371-393
 high temperature applications, 589-603

high-pressure die casting, 320-335

I

Inconel 718, 441-465
 incremental *J*-integral equation, 90-115
 inertia friction welding, 336-354
 isotropic and kinematic hardening, 553-569

J

J-integral, 90-115
J-R curve, 90-115

K

*K*_{max} effect, 297-319

L

lattice curvature, 197-216
 LEFM, 604-619
 load ratio, 297-319
 local approach, 178-193
 low cycle fatigue, 197-216

M

macroscopic inhomogeneity, 116-129
 master curve, 394-420
 Master Curve, 77-89
 master curve extensions, 116-129
 material modeling, 589-603
 mean stress effect, 371-393
 medical wire, 217-226
 microstructure, 336-354
 multi-modal master curve, 116-129
 multiaxial fatigue, 441-465, 371-393

N

nanocrystalline, 217-226
 nitinol properties, 217-226
 nitinol wire, 217-226
 notch, 504-519

P

persistent slip bands, 197-216
 persistent slip markings, 197-216
 pin-loaded holes, 553-569
 pipe steel, 355-368
 plastic deformation, 589-603
 pores, 320-335
 post-cure stretching, 520-552
 pressurized thermal shock, 394-420
 PWR pressure vessel, 77-89

R

R curve, 130-158
 reactor pressure vessel, 394-420
 residual strain, 520-552
 residual stress, 504-519
 residual stresses, 489-503, 553-569
 rolling contact fatigue, 254-275
 RPV forgings, 77-89

S

sampling position, 77-89
 single point estimation, 116-129
 SINTAP lower tail, 116-129
 small notch, 371-393
 spheroidal graphite cast iron, 631-645
 316LN stainless steel, 197-216

stress classification, 570-585
 stress gradient, 441-465
 stress intensity factor, 504-519, 336-354
 structural assessment, 3-73
 structural integrity, 570-585

T

T-joint, 504-519
 thermal and mechanical loading, 604-619
 thermomechanical fatigue, 620-628
 thin sheet, 130-158
 threshold, 504-519, 297-319
 threshold stress intensity factor range, 279-296
 α/β titanium alloy, 336-354
 titanium alloys, 489-503
 TMF, 620-628
 tomography, 241-253
 torsional fatigue, 421-440
 toughness scaling model, 178-193
 transferability, 394-420

V

viscoelasticity, 227-240

W

Weibull stress, 178-193
 weld strength mismatch, 178-193
 welding, 675-695

X

X-ray computed tomography, 631-645