Abrasion
Measuring the abrasion of transparent materials with hazemeters (Ladson and Evans), May, 88
Abrasion resistance
Measuring the abrasion of transparent materials with hazemeters (Ladson and Evans), May, 88
Accuracy
Introduction to some precision and accuracy of measurement problems (Grubbis), July, 133
Acoustic measurement
Analytical approach to reference samples for ultrasonic residual stress measurement (Hsu, Proctor, and Blessing), Sept., 230
Asymmetric properties of solids from measurements of the stress acoustic constant (Cantrell), Sept., 223
Introduction to papers presented at the symposium on ultrasonic measurements of stress (Proctor), Sept., 199
Ultrasonic measurement of axial stress (Heyman and Chern), Sept., 202
Adhesion
Dynamic effective Young's modulus of thin adhesive layers in bonded joints (Ramakrishnan, De, and Suryanarayan), Sept., 192
Adhesive bonding
Dynamic effective Young's modulus of thin adhesive layers in bonded joints (Ramakrishnan, De, and Suryanarayan), Sept., 192
Aluminum
Comparison of aluminum powder average particle diameter values determined by various methods (Ping), July, 162
Compressive creep machine (Findley), July, 179
Aluminum alloys
Effect of varying mean stress on the dimpled loaded-hole fatigue strength of 2024-T3 aluminum alloy (Kuc and Shewchuk), March, 47
Axial stress
Ultrasonic measurement of axial stress (Heyman and Chern), Sept., 202
Birefringence
Ultrasonic measurement of residual stress in textured materials (Arora and James), Sept., 212
Blades
Laser evaluation of cutting angle and surface finish in scalpel blades (Shetty), Jan., 25
Book reviews
Acoustic Emission by Williams (Spanner), Jan., 30
Adhesives, Adherent, Adhesion by DeLollis (Eden), Sept., 235
Construction Materials Evaluation and Selection: A Systematic Approach by Rosen and Bennett (Schneller), July, 186
Contaminants and Sediments, Vols. 1 and 2 by Baker (Brink), July, 181
Corrosion of Nickel and Nickel-Base Alloys by Friend (Lee), Nov., 303
Elementary Mechanics of Solids by Singh and Jha (Papirno), Sept., 235
Engineering Design, Second Edition by Faupel and Fisher (Reifsnider), Sept., 236
Ferroalloys and Alloying Additives Handbook by Deley et al (Peters), March, 76
Ferrous Production Metallurgy by Peters (Speer), Nov., 304
Food Chemicals Codex (Gelardi), May, 127
Handbook of Corrosion Prevention for Steel Pile Structures in Marine Environments by Dianu et al (Townsend), Sept., 239
Heat and Mass Transfer in Metallurgical Systems by Spalding and Afgan (Kundrat), Nov., 303
Housing, Climate and Comfort by Evans (Rowder), Sept., 237
An Introduction to Load Bearing Brickwork Design by Hendry et al (Yorkdale and Patterson), Sept., 240
Photovoltaics: Sunlight to Electricity in One Step by Maycock and Sirewalt (Nuss), July, 186
The Physical Metallurgy of Steels by Leslie (Butler), July, 182
Plastic Theory of Structures by Horne (Leport), March, 76
Powder Metallurgy, Principles & Applications by Lening (Amba), July, 181
Probabilistic Mechanical Design by Haugen (Jeb), July, 184
Selected Papers by Freudenthal (Yao), Jan., 31
Sludge Treatment by Eckenfelder and Santhatam (Daniela), March, 75
STATLIB: A Statistical Computing Library by Breirsted and Relles (Barton), Jan., 30
Structural Brickwork by Hendry (Borchelt), May, 127
Structural Concepts and Systems for Architects and Engineers by Lin (Krafft), Sept., 235
The Theory of This Walled Bars by Gjelvivik (Harris), July, 183
Thermal Insulation Handbook: A Practical Guide for Engineers, Contractors, Architects, and Plant Managers by Turner and Malloy (Greason), July, 183
Tree Roots and Buildings by Cutler and Richard (Walters), May, 128
Tunnels: Planning, Design, Construction by Magaw and Bartlett (Smirnoff), July, 187
Brick
Effect of temperature on brick suction (Davison), May, 81
Chromatics coordinates
Explanation of the empirical factor recommended in the permanganate titration of high-chromium stainless steel from tristimulus chromaticity (Bhuchar and Majumdar), March, 69
Chromium steels
Explanation of the empirical factor recommended in the permanganate titration of high-chromium stainless steel from tristimulus chromaticity (Bhuchar and Majumdar), March, 69
Clays
Effect of temperature on brick suction (Davison), May, 81
Coal
Erosion response of a turbine alloy and its oxide scale (Wenglarz and Tabakoff), Nov., 298
Fracture testing in high temperature and pressure hydrogen environments (McCabe, Landes, and Gradich), Nov., 279
Cobalt coatings
Low temperature (650 to 700°C) burner rig testing (Aprigliano), Nov., 292
Cobalt magnets
Nondestructive magnetic measurements on prefabricated parts (Kekkarl, March, 55
Composite materials
Rate sensitive tensile impact properties of fully and partially loaded unidirectional composites (Hayes and Adamu), March, 61
Compression tests
Compressive stress machine (Findley), July, 179
Correlation techniques
Correlation of data from standard and precracked Charpy specimens with fracture toughness data for HY-130, A517-F, and HY-80 steel (Sokak), May, 102
Corrosion
Low temperature (650 to 700°C) burner rig testing (Aprigliano), Nov., 292
Crack propagation
Characterization of the crack toughness behavior of structural steels by the tearing modulus parameter and acoustic emission (Khan, Shoji, and Takahashi), Jan., 3
Tentative test procedure for determining the plane strain J_R curve (Albrecht, Andrews, Gudas, Joyce, Loss, McCabe, Schmidt, and Van Den Sluys), Nov., 245
Creep properties
Compressive stress machine (Findley), July, 179
Constant stress tensile creep machine for very low stresses (Yavari and Langdon), July, 174
Curve fitting
Goodness-of-fit of the Ramsberg-Osgood analytic stress-strain curve to tensile test data (Papirno), Nov., 263
Damping
Damping in turbine blade alloys (Wolffenden), Jan., 17
Data processing
Application of computer techniques to Charpy impact testing of irradiated pressure vessel...
Determination of stress
Application of ultrasonic stress measurements to problems in the electricity supply industry (Williams, Armstrong, and Robins), Sept., 217

Dimpling
Effect of varying mean stress on the dimpled loaded-hole fatigue strength of 2024-T3 aluminum alloy (Kuc and Shewchuk), March, 47

Dispersants
Dispersant effectiveness test based on the drop-weight interfacial tension test method (Rewick, Sabo, and Smith), March, 72

Dynamic modulus of elasticity
Dynamic effective Young's modulus of thin adhesive layers in bonded joints (Ramakrishnan, De, and Suryanarayanan), Sept., 192

Dynamic properties
Rate sensitive tensile impact properties of fully and partially loaded unidirectional composites (Hayes and Adams), March, 61

Dynamic tests
Dynamic fracture toughness and fatigue crack growth rate properties of ASME SA508 CL 3 and SA 508 CL 3a base and heat-affected-zone materials (Logdson), July, 144

Gas chromatography
Gas analysis techniques for high temperature corrosion testing (Kane and Goodell), Nov., 286

Haze
Measuring the abrasion of transparent materials with hazemeters (Ladson and Evans), May, 88

Heat resistant alloys
Erosion response of a turbine alloy and its oxide scale (Wenglzarz and Tabakoff), Nov., 298

Hydrogen
Fracture testing in high temperature and pressure hydrogen environments (McCabe, Landes, and Gradich), Nov., 279

Impact strength
Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Impact tests
Application of computer techniques to Charpy impact testing of irradiated pressure vessel steels (Landow, Fromm, and Perrin), Sept., 189

Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Rate sensitive tensile impact properties of fully and partially loaded unidirectional composites (Hayes and Adams), March, 61

Injection molding
Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Interfacial tension
Dispersant effectiveness test based on the drop-weight interfacial tension test method (Rewick, Sabo, and Smith), March, 72

Internal friction
Damping and metals characterization (Weissmann), Jan., 21

Erosion
Erosion response of a turbine alloy and its oxide scale (Wenglzarz and Tabakoff), Nov., 298

Errors of measurement
Introduction to some precision and accuracy of measurement problems (Grubbs), July, 133

Exposure
Effect of weathering at different exposure angles on the tensile impact resistance of thermoplastics (Yamakawa and Blaga), July, 156

Extensometers
Experimental determination of Lüders band parameters from load-elongation data (Correia and Fortes), Nov., 269

Fatigue (materials)
Discussion of "Statistical fatigue failure analysis" by G. G. Trantina (Findley), Jan., 28

Techniques for fatigue testing and extrapolation of fatigue life for austenitic stainless steels (Manjoine and Landermann), May, 115

Effect of self stresses on high cycle fatigue (Fuchs), July, 168

Fourier transformation
Laser evaluation of cutting angle and surface finish in scalpel blades (Shetty), Jan., 25

Fracture properties
Evaluation of the tentative J-R curve testing procedure by round robin tests of HY130 steel (Gudas and Davis), Nov., 252

Fracture tests
Fracture testing in high temperature and pressure hydrogen environments (McCabe, Landes, and Gradich), Nov., 279

Fractures (materials)
Characterization of the crack toughness behavior of structural steels by the tearing modulus parameter and acoustic emission (Khan, Shoji, and Takahashi), Jan., 3

Correlation of data from standard and pre-cracked Charpy specimens with fracture toughness data for HY-130, AS17-F, and HY-80 steel (Sovak), May, 102

Dynamic fracture toughness and fatigue crack growth rate properties of ASME SA508 CL 3 and SA 508 CL 3a base and heat-affected-zone materials (Logdson), July, 144

Gas chromatography
Gas analysis techniques for high temperature corrosion testing (Kane and Goodell), Nov., 286

Haze
Measuring the abrasion of transparent materials with hazemeters (Ladson and Evans), May, 88

Heat resistant alloys
Erosion response of a turbine alloy and its oxide scale (Wenglzarz and Tabakoff), Nov., 298

Hydrogen
Fracture testing in high temperature and pressure hydrogen environments (McCabe, Landes, and Gradich), Nov., 279

Impact strength
Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Impact tests
Application of computer techniques to Charpy impact testing of irradiated pressure vessel steels (Landow, Fromm, and Perrin), Sept., 189

Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Rate sensitive tensile impact properties of fully and partially loaded unidirectional composites (Hayes and Adams), March, 61

Injection molding
Microcomputer-based system for instrumented impact testing (Crawford, McFerran, and Ali), May, 121

Interfacial tension
Dispersant effectiveness test based on the drop-weight interfacial tension test method (Rewick, Sabo, and Smith), March, 72

Internal friction
Damping and metals characterization (Weissmann), Jan., 21

Irradiation
Application of computer techniques to Charpy impact testing of irradiated pressure vessel steels (Landow, Fromm, and Perrin), Sept., 189

J-R integral
Evaluation of the tentative J-R curve testing procedure by round robin tests of HY130 steel (Gudas and Davis), Nov., 252

Tentative test procedure for determining the plane strain J-R curve (Albrecht, Andrews, Gudas, Joyce, Loss, McCabe, Schmidt, and VanDerStuyus), Nov., 245

Length
Rapid technique for estimating fiber lengths of mineral wools and other staples (Atkinson and Lancaster), March, 33

Letters to the editor
Estimating the tortuosity factor (Johnston and Hatch), July, 188

Importance of temperature on the starch-iodine end point (Yang, Hatch, and Johnston), Sept., 241

Longitudinal waves
Analytical approach to reference samples for ultrasonic residual stress measurement (Hsu, Proctor, and Blessing), Sept., 230

Mass spectroscopy
Gas analysis techniques for high temperature corrosion testing (Kane and Goodell), Nov., 286

Metals
Tentative test procedure for determining the plane strain J-R curve (Albrecht, Andrews, Gudas, Joyce, Loss, McCabe, Schmidt, and VanDerStuyus), Nov., 245

Mineral wool
Rapid technique for estimating fiber lengths of mineral wools and other staples (Atkinson and Lancaster), March, 33

Monitors
Acoustic emission during unloading of elastically stressed magnesium alloy (Lee and Williams), Jan., 12

Nondestructive tests
Application of ultrasonic stress measurements to problems in the electricity supply industry (Williams, Armstrong, and Robins), Sept., 217

Oxidation tests
High temperature at NASA Lewis Research Center (Barrett and Lowell), Nov., 273

Particle size
Comparation of aluminum powder average particle diameter values determined by various methods (Ping), July, 162

Piezoelectricity
Damping in turbine blade alloys (Wulfenden), Jan., 17

Plaster
Development of a scratch-test instrument for thick wall coverings (Jaegermann, Becker, and Rells), May, 94

Polization
Ultrasonic measurement of residual stress in textured materials (Arora and James), Sept., 212

Powder metallurgy
Comparison of aluminum powder average particle diameter values determined by various methods (Ping), July, 162

Precision
Introduction to precision and accuracy of measurement problems (Grubbs), July, 133

Prefabrication
Nondestructive magnetic measurements on prefabricated parts (Kelkar), March, 55

Preferred orientation
Ultrasonic measurement of residual stress in textured materials (Arora and James), Sept., 212

Quench hardening
Statistical analysis of X-ray residual stress measurement using the half-width method (Kurita), March, 38
Residual stress
Nondestructive magnetic measurements on prefabricated parts (Kelkar), March, 55

Residual stress
Analytical approach to reference samples for ultrasonic residual stress measurement (Hsu, Proctor, and Blessing), Sept., 230
Effect of self stresses on high cycle fatigue (Fuchs), July, 168
Effect of varying mean stress on the dimpled loaded-hole fatigue strength of 2024-T3 aluminum alloy (Kuc and Shehuchuk), March, 47
Introduction to papers presented at the symposium on ultrasonic measurements of stress (Proctor), Sept., 199
Statistical analysis of X-ray residual stress measurement using the half-width method (Kurtia), March, 38
Ultrasonic measurement of axial stress (Heyman and Chern), Sept., 202

Stress concentration
New scale of microtension test for polymers (Groves, Sang, Scott, Scrutton, Millie, Wigney, and Hendra), May, 83

Stress cycle
Techniques for fatigue testing and extrapolation of fatigue life for austenitic stainless steels (Manjone and Landermann), May, 115

Stress strain diagrams
Experimental determination of Lüders band parameters from load-elongation data (Correia and Fortes), Nov., 269
Goodness-of-fit of the Ramsberg-Osgood analytic stress-strain curve to tensile test data (Papirno), Nov., 263

Stresses
Anharmonic properties of solids from measurements of the stress acoustic constant (Cantrell), Sept., 223
Constant stress tensile creep machine for very low stresses (Yavari and Langdon), July, 174
Discussion of "Statistical fatigue failure analysis" by G. G. Trantina (Findley), Jan., 28
Introduction to papers presented at the symposium on ultrasonic measurements of stress (Proctor), Sept., 199

Stress
Acoustic emission during unloading of elastically stressed magnesium alloy (Lee and Williams), Jan., 12
Characterization of the crack toughness behavior of structural steels by the tearing modulus parameter and acoustic emission (Khan, Shoji, and Takahashi), Jan., 3
Low temperature (650 to 700°C) burner rig testing (Aprigliano), Nov., 263
Low temperature (650 to 700°C) burner rig testing (Aprigliano), Nov., 263

Surface roughness
Laser evaluation of cutting angle and surface finish in scalpel blades (Shetty), Jan., 25

Surfactants
Dispensent effectiveness test based on the drop-weight interfacial tension test method (Rewick, Sabo, and Smith), March, 72

T-Y

Tension tests
Constant stress tensile creep machine for very low stresses (Yavari and Langdon), July, 174
Experimental determination of Lüders band parameters from load-elongation data (Correia and Fortes), Nov., 269

Goodness-of-fit of the Ramsberg-Osgood analytic stress-strain curve to tensile test data (Papirno), Nov., 263
New scale of microtension test for polymers (Groves, Sang, Scott, Scrutton, Millie, Wigney, and Hendra), May, 83
Abrasion resistance can be defined as the ability of a surface to resist being worn away by rubbing or friction (Scott and Safiuddin, 2015). It is very important in construction of floors, roads, or pavements. Abrasion resistance is particularly dependent on good curing but also relies upon other factors including materials and surface finishing, aggregate hardness, mix proportions, aggregate/paste bond, and placing and compaction. SCMs can have effects on abrasion resistance of concrete. Abrasion resistance is a property which allows a material to resist wear. Materials which are abrasion resistant are useful for situations in which mechanical wearing and damage can occur, including delicate applications such as the construction of space shuttle components. When a product has abrasion resistance, it will resist erosion caused by scraping, rubbing, and other types of mechanical wear. This allows the material to retain its integrity and hold its form.