A heat treatment information tool for the internet p. 3
Proper selection in annealing atmospheres for electrical steels p. 11
An introduction to atmosphere furnace safety p. 15
Temperature influence on the flammability limits of heat treating atmospheres p. 24
Furnace control systems and components to improve throughput and reduce cost p. 29
Process characterization of furnace brazing through statistically designed computer simulations p. 35
State of the art integrated heat treatment cell for today’s manufacturing environment p. 43
Why use composite radiant tubes? p. 48
The top ten ways to keep your new or used carburizing and hardening equipment operating at maximum performance and efficiency p. 52
Determining and improving the uncertainty of Rockwell hardness tests p. 63
Taking control of your combustion system p. 68
New method of heat treatment using the wave technology p. 77
A new method of reducing NOx emissions from heat treatment furnaces p. 84
Induction heat treating, what is important to remember p. 91
Induction as a source of heat p. 99
Finite element analysis of induction hardening process of steel p. 104
Process monitoring to reduce/eliminate destructive testing in induction heat treating p. 112
The heat treating global challenge - heat treatment technology today and for future p. 116
Using numerical simulations to determine the effect of external fluid flow on heat transfer rates in heat treating operations p. 125
A computer aided heat treatment planning system p. 131
Heat treatment of aluminum alloy V65 for rivets and bolts applications p. 137
Chemistry of quenching part 1 - fundamental interfacial chemical processes involved in quenching p. 141
Chemistry of quenching part 2 - fundamental thermophysical processes involved in quenching p. 148
Chemistry of quenching part 3 - energy conservation by utilization of the thermal content of steel for surface modification p. 156
Critical heat-flux densities, quenching intensity and heat extraction dynamics during quenching in vaporizable liquids p. 161
Application of intensive quenching processes for carburized parts p. 169
The QuenchMiner expert system for quenching and distortion control p. 174
Effect of quenching variables on distortion and residual stresses p. 184
The effects of carbon profile and quenching condition on dimensional change of carburized steel rings p. 192
Optimization of an aluminum alloy quenching process in polyalkylene glycol polymer solution using Taguchi method p. 199
Quench rate effects on the natural aging behavior of 7XXX Al-Mg-Zn-Cu aluminum alloys p. 207
Influence of test conditions on the cooling curve response of polymer quenchants (Tensi agitation device) p. 218
Advances in quenching - a discussion of present and future technologies
Thermochemical treatments with added corrosion protection and wear protection
Koisterising - improving austenitic stainless steel
Nitreg & ONC where corrosion resistance & wear requirements finally meet
Applications of vacuum tempering
FineCarb - the smart system for vacuum carburizing
Low pressure vacuum carburizing and accelerated gas carburizing activate
Diamond coated cutting tools for biomedical applications
Laser micromachining of stainless steels for biomedical applications
Atomic force microscopy study of biaxially-oriented polypropylene films
Characterization of a chromium-manganese (16CrMn5) steel carburized and hardened in different quenchants
Mechanical properties of electroformed nickel cobalt alloys
Status of chromate metal pretreatment replacement research at the University of Cincinnati
Improved corrosion protection of aluminum alloys by electrodeposited silanes
Corrosion resistance properties of Ormosil coatings on 2024-T3 aluminum
Utilisation of fly ash to develop hot corrosion and wear resistant coatings
Effect of superficially applied oxides on the hot corrosion behaviour of Fe- and Ni-base superalloys in Na[\textsubscript{2}]So[\textsubscript{4}]-60%V[\textsubscript{2}]O[\textsubscript{5}]
Environmentally assisted fatigue crack growth rate testing with corrosion prevention compounds
Corrosion resistant films from trivalent chrome based solutions applied to electrodeposited zinc and zinc alloys
Can surface treatments protect against corrosion fatigue cracking of Al alloys?
Novel, water-based high-performance primers that can replace metal pretreatments and chrome-containing primers
Preparation of Cu coatings on the surface of acrylonitrile-butadiene-styrene (ABS) by sputter deposition and electroless plating
Electrochemical planarization of patterned copper films of microelectronic applications
Electrodeposition and structural investigation of antimony telluride phases
Infrared heat treatment of Ti-6Al-4V with electroplated Cu
Microstructure and properties of TiB/Ti6Al4V coatings produced with laser treatments
Hardening and nitriding in Al-Si alloy surfaces by pulsed excimer-laser light
Laser dressing of alumina grinding wheels
Laser induced carbide coating on steel
Mechanical testing of laser clads
Plasma alloying and spheroidization process and development
Optimization of the ionitriding process of stainless steels
Study of CVD and PVD coatings for turbomachinery life predictions
Technical and economic considerations in the selection of coatings
Fluidized bed CrN coating formation on pre-nitrocarburised plain carbon steel
A high voltage pulse generator for PIII processing in toroidal and cylindrical geometry vacuum vessels  
Residual stress measurements in target materials  
Measurement of residual stresses in Ti-6Al-4V for the aerospace industry when turning the surface with applying "jet break" compared to conventional coolant appliance  
Multilayer abradable seal coating system  
The development of plasma transferred arc solid free form fabrication as a cost effective production methodology  
Thermal shock testing of TBC / bondcoat systems  
Formation of 'super plastic agglomerate mixing' (SPAM) between copper and 6061-T6511 aluminum deposited by the supersonic particle deposition process (SPD)  
Dense vertically segmented thermally sprayed YSZ for TBC and other high temperature applications  
New high temperature titanium compatible abradable seals  
Composite coatings incorporating solid lubricant phases  
An investigation of tribological properties of CN and TICN coatings  
Active friction modulation of self-assembled monolayers : towards surfaces with switchable friction states  
Environmentally benign micro scale cutting tools for nanotechnology applications  
Relationship between friction and wear properties and delamination behavior of amorphous SiC film coated by helicon sputtering  
Wear resistant WC composite hard coatings by Brazing  
Author index  
Keyword index  
Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.