

# Heat treating and surface engineering: proceedings of the 22nd Heat Treating Society Conference and the 2nd International Surface Engineering Congress, 15-17 September, 2003, Indianapolis, Indiana, USA

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## Abstrak

### Contents :

- A Heat Treatment Information Tool for the Internet
- Proper Selection of Annealing Atmospheres for Electrical Steels
- An Introduction to Atmosphere Furnace Safety
- Temperature Influence on the Flammability Limits of Heat Treating Atmospheres
- Furnace Control Systems and Components to Improve Throughput and Reduce Cost
- Process Characterization of Furnace Brazing Through Statistically Designed Computer Simulations\*
- New Method of Heat Treatment Using the Wave Technology
- State of the Art Integrated Heat Treatment Cell for Today's Manufacturing Environment
- Why Use Composite Radiant Tubes?
- The Heat Treating Global Challenge Heat Treatment Technology Today and for Future
- The Top Ten Ways To Keep Your New or Used Carburizing and Hardening Equipment Operating at Maximum Performance and Efficiency
- Determining and Improving the Uncertainty of Rockwell Hardness Tests
- A new method of reducing NOx emissions from Heat Treatment Furnaces
- Taking Control of Your Combustion System
- 22ND ASM Heat Treat Conference 2003 George Pfaffmann Honorary Symposium: Induction Heat Treating, What Is Important to Remember
- Chemistry of Quenching Part 3– Energy Conservation By Utilization of the Thermal Content of Steel for Surface Modification
- Induction as a Source of Heat
- Finite Element Analysis of Induction Hardening Process of Steel
- Using Numerical Simulations to Determine the Effect of External Fluid Flow on Heat Transfer Rates in Heat Treating Operations
- Process Monitoring to Reduce/Eliminate Destructive Testing in Induction Heat Treating.
- A Computer Aided Heat Treatment Planning System
- Optimization of an Aluminum Alloy Quenching Process in Polyalkylene Glycol Polymer Solution using Taguchi Method

- Chemistry of Quenching Part I – Fundamental Interfacial Chemical Processes Involved in Quenching
- Critical Heat-Flux Densities, Quenching Intensity and Heat Extraction Dynamics During Quenching in Vaporizable Liquids
- Chemistry of Quenching Part 2– Fundamental Thermophysical Processes Involved in Quenching
- Application of Intensive Quenching Processes for Carburized Parts
- Quench Rate Effects on the Natural Aging Behavior of 7XXX Al-Mg-Zn-Cu Aluminum Alloys
- The QuenchMiner™ Expert System for Quenching and Distortion Control
- Effect of Quenching Variables on Distortion and Residual Stresses
- Influence of Test Conditions on the Cooling Curve Response of Polymer Quenchants (Tensi Agitation Device)
- The Effects of Carbon Profile and Quenching Condition on Dimensional Change of Carburized Steel Rings
- Advances in Quenching- A Discussion of Present and Future Technologies
- Low Pressure Vacuum Carburizing and Accelerated Gas Carburizing
- Thermochemical Treatments with Added Corrosion Protection and Wear Protection
- Kolsterising – Improving Austenitic Stainless Steel
- Status of Chromate Metal Pretreatment Replacement Research at the University of Cincinnati
- Nitreg & ONC Where Corrosion Resistance & Wear Requirements Finally Meet
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- Diamond Coated Cutting Tools for Biomedical Applications
- FineCarb - the Smart System for Vacuum Carburizing
- Laser Micromachining of Stainless Steels for Biomedical Applications
- Improved Corrosion Protection of Aluminum Alloys by Electrodeposited Silanes
- Atomic Force Microscopy Study of Biaxially-Oriented Polypropylene Films
- Characterization of a Chromium-Manganese(16CrMn5)Steel Carburized and Hardened in Different Quenchants
- Corrosion Resistance Properties of Ormosil Coatings on 2024-T3 Aluminum
- Mechanical Properties of Electroformed Nickel Cobalt Alloys
- Utilisation of Fly Ash to Develop Hot Corrosion and Wear Resistant Coatings
- Effect of Superficially applied Oxides on the Hot Corrosion behaviour of Feand Ni-base Superalloys in Na<sub>2</sub>SO<sub>4</sub>-60% V<sub>2</sub>O<sub>5</sub>
- Electrochemical Planarization of Patterned Copper Films for Microelectronic Applications
- 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.

- Electrodeposition and structural investigation of Antimony Telluride phases
- Novel, Water-Based High-Performance Primers that can Replace Metal Pretreatments and Chromate-Containing Primers
- Infrared Heat Treatment of Ti-6Al-4V with Electroplated Cu
- Preparation of Cu Coatings on the Surface of Acrylonitrile-Butadiene- Styrene (ABS) by Sputter Deposition and Electroless Plating
- Plasma Alloying and Spheroidization