

## Trends in welding research: proceedings of the 6th International Conference, Callaway Gardens Resort, Phoenix, Arizona, 15-19 April 2002

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### Abstrak

#### Contents :

- Recent Developments in the Understanding of Stainless Steel Welding Metallurgy
- Tailoring the Phase Balance During Laser and GTA Keyhole Welding of SAF 2205 Duplex Stainless Steel
- Pitting Corrosion Resistance of Duplex Stainless Steels Multipass Welds
- Investigation of the Kinetics of the Ferrite/Austenite Phase Transformation in the HAZ of a 2205 Duplex Stainless Steel Weldment
- Effect of GTAW Flux on the Microstructure and Properties of Austenitic, Super Austenitic and Super Duplex Stainless Steel Welds
- Columnar-to-Equiaxed Transition During Solidification of Steel Welds
- Analysis of Autogenous Gas Tungsten Arc and Laser Welding of Superaustenitic Stainless Steels for Naval Combatant Hulls
- Laser Welding of Superaustenitic Stainless Steel
- Prediction of Solidification Mode and Hot Cracking Susceptibility in Laser Welds of High Nitrogen Stainless Steels
- HAZ Properties of High Nitrogen Austenitic Stainless Steel
- Ductility-Dip Cracking Susceptibility of Austenitic Alloys
- Fatigue Crack Propagation of Stainless Steel Welds
- Hot Cracking Resistance of Laser and Hybrid Welded Austenitic Stainless Steels
- Improved Models for Predicting Ferrite Content in Stainless Steel Welds
- Progress in Joining Austenitic Stainless Steels by Friction Stir Welding
- Effect of Twin-Induced Grain Boundary Engineering on Intergranular Corrosion in Austenitic Stainless Steel
- Effect of CTE on Fatigue Cracking of Stainless Steel Vessels
- Recent Developments in Transport Phenomena in Fusion Welding
- Laser Weld Keyhole Dynamics
- Computer Modeling of Keyhole Mode Laser Welding to Avoid Macro-porosity
- Dimensionless Relationships for the Keyhole Weld Characteristics in AZ80 Magnesium Alloy
- Numerical Modeling of Stationary GTA Welding
- Validation of Computed Weld Pool Temperature Profiles for GTA Welding of Gamma TiAl
- Anode Heat Transfer in GTA Welding
- A k-E Model for Turbulent Weld Pool Convection in Gas Metal Arc Welding Process

- Analysis of Friction Stir Weld Using the Inverse-Problem Approach
- Phase Distribution and Transformation Dynamics in Fusion Welds Using In-situ Synchrotron Diffraction Methods
- Advanced Characterization Techniques for Weld Microstructures
- Nonequilibrium solidification in Fe-C-Al-Mn steel welds
- Mapping Phase Transformations in the Heat-Affected-Zone of Carbon Manganese Steel Welds Using Spatially Resolved X-Ray Diffraction
- Modeling of Ferrite to Austenite Transformation and Real Time Mapping of Phases During GTA Welding of 1005 Steel
- Magnetic Force Microscopy as a Tool for Weld Metal Studies
- Characterization of Delta Ferrite Content in GTAW Deposited Stainless Steel Cladding
- Grain Growth in the Heat-Affected Zone of Ti-6Al-4V Welds: Measurements and Three Dimensional Monte Carlo Simulation
- Friction Stir Welding Developments
- A Detailed Three-Dimensional Transient Heat Transfer Model For Friction Stir Welding
- Input Torque Based Thermal Model of Friction Stir Welding of Al-6061
- High-Speed Video Flow Visualization in Friction Stir Welds of Polycarbonate
- Visualization of Material Flow During Friction Stir Welding (FSW) of the Same and Dissimilar Aluminum Alloys
- Force Sensing in Friction Stir Welding
- Microstructural Analysis and Modeling of the Heat Affected Zone in Al 2519 Friction Stir Welds
- Thermo-Mechanical Analyses of Welding Aluminium Alloy with TIG and Friction Stir Welding
- Residual Stress Distributions in Friction Stir Welded Al Sheets Determined by Neutron Strain Scanning
- Effect of Pin Tool Shape on Metal Flow During Friction Stir Welding
- Reproduction of Ultra-Fine Grains in Equal Channel Angular Pressed Al Alloy by Friction Stir Process
- Improvement of Mechanical Properties in Thixomolded Mg Alloy AZ91D by Friction Stir Welding
- The Evaluation of the Mechanical Properties of AA5083 Friction Stir Welds by Electronic Speckle Pattern Interferometry
- Investigating Post-Weld Heat Treatments to Increase the Corrosion and the Environmental Cracking Behavior of 7075-T6 Friction Stir Weld
- Pitting Corrosion Behavior of Friction Stir Welded 7050-T74 Aluminum Alloy
- The Effect of the Welding Conditions on the Nugget Zone in Friction Stir Welds in an AA7010 Alloy
- Metallurgical Characterization of Friction Stir Welded 7050-T74 and C458-T3 Aluminum Alloys
- Weld Efficiency and Defect Formation: Correlation Between Experiment and Simple Models

- Low Plasticity Burnishing of Friction Stir Welds in 2219 Aluminum to Increase Corrosion Fatigue Life
- Mechanical Property and Microstructural Evaluation of Friction Stir Welded AL-6XN
- Post-Weld Aging of Friction Stir Wel