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*K. Senthilnathan, A. Shamimi, L. Vien, I. Ong, C. Bonsignore, and T. Duerig*

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### **Size Effects in Shape Memory Alloys—Competition between Structural and Microstructural Features in Determining Grain Scale Performance**

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### **Effect of Low and Reverse Loading Paths on the Actuation Characteristics of Shape Memory Alloy Torsional Actuators**

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### **Effect of Mean Strain and Pre-Strain on Fatigue Strength of Superelastic Nitinol**

*H. Cao, Y. Xu, F. Zhou, and M.H. Wu,*

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### **Effect of Variable Amplitude Blocks Ordering in the Functional Fatigue of Superelastic NiTi Wires**

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### **Volume Weighted Probabilistic Methods for Nitinol Lifetime Prediction**

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## **Mechanics of Shape Memory Materials—Modeling Meets Experiments III**

### **On the Stabilizing Effect of Plastic Deformations on the Martensitic Transformations in Shape Memory Alloys**

*P. Junker<sup>1</sup>, K. Hackl<sup>1</sup>, Philipp Hempel<sup>2</sup>, Anika Sorg<sup>2</sup>, and Markus Wohlschlögel<sup>2</sup>*

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### **A Fast and Easy-to-Calibrate Model for the Cyclic Material Behavior of Shape Memory Alloys**

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## **A Micromechanical Model for Textured Polycrystalline Ni-Ti Wires**

*P. Hannequart<sup>1</sup>, M. Peigney<sup>2</sup>, Jean-François Caron<sup>2</sup>*

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## **A Robust Macroscopic Finite Element Model Implementation for Coupled Phase Transformation and Plastic Deformation in Shape Memory Alloys**

*H. Paranjape<sup>1</sup>, K. Bhattacharya<sup>2</sup>, and A.P. Stebner<sup>1</sup>*

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## **Simulation of Tube Drawing Textures in Nickel Titanium Using Viscoplastic Self-Consistent (VPSC) Algorithm**

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## **Mechanics of Shape Memory Materials—Modeling Meets Experiments IV**

### **Macroscopic Martensitic Transformation Front in NiTi Shape Memory Alloys—Experimental Observations and Numerical Reconstruction**

*P. Sedmák<sup>1</sup>, J. Pilch<sup>1</sup>, L. Heller<sup>1</sup>, J. Kopeček<sup>1</sup>, J. Wright<sup>2</sup>, P. Sedláček<sup>3</sup>, M. Frost<sup>3</sup>, and P. Šittner<sup>1</sup>*

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### **FEA Study of the Influence of Modified Surface Layers on Local Mechanical Properties of Nitinol**

*C. Degel, A. Sorg, P. Hempel, and M. Wohlschlögel*

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### **Characterization of Laser Welded Nitinol**

*G. Gläsel, J. Duttenhofer, M. Wohlschlögel, P. Hempel, C. Bräuner, and N.-A. Feth*

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### **Understanding Complex Stress States in Pseudoelastic Shape Memory Alloys—Macroscopic Modeling Considering Localization and Tension-Compression Asymmetry**

*M. Pouya, C. Elibol, and M.F.-X. Wagner*

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## **Plenary Session**

### **NiTi Alloys for Structural and Tribological Applications—The Other Side of Superelastics**

*C. DellaCorte, NASA Glenn Research Center, Cleveland, OH, USA*

### **Axial-Torsion Behavior of Superelastic NiTi Tubes**

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## **Production, Processing, and Standards III**

### **Ultrafast Laser Cutting of Low-Mass Superelastic Nitinol Parts**

*M.D. Shirk, J.E. Harrington, C. Trepanier, and T.W. Duerig  
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### **Characterization of Laser-Generated Surface Layers—Heat-Affected Zone and Recast**

*C. Bräuner, M. Wohlschlögel, and N.-A. Feth  
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### **Nitinol Micromachining Utilizing Ultra-Short Pulse Lasers**

*N.-A. Feth, C. Bräuner, and M. Wohlschlögel  
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### **Heat-Affected Zone Analysis for Laser and Microelectrical Discharge Machined Nitinol**

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## **Shape Memory Actuators, Caloric, and Superelastic Damping Devices III**

### **Spatially Distributed Actuation of Shape Memory Alloy Knitted Composites**

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### **Net Shape TiNi Foam Connectors for Multiwire and Complex Nitinol Connections**

*A.P. Jardine, Shape Change Technologies LLC, Thousand Oaks, CA, USA*

### **Novel Monolithic Shape Memory Alloy (SMA) Actuator with an Embedded Strain-Gauge Sensor**

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### **Development and Testing of a Shape Memory Alloy-Driven Composite Morphing Radiator**

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### **Integrated Electromagnetic Heating and Fluid Cooling in SMA Actuators via Liquid Metal Circuits**

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## **Plenary Session**

### **Control Property and Behavior of Nanostructured NiTi SMAs by Grain-Size Engineering**

*Q. Sun, Hong Kong University of Science and Technology, Hong Kong, China*

## **Material and Device Testing**

### **Straightforward Downsizing of Inclusions in NiTi Alloys—A New Generation of SMA Wires with Outstanding Fatigue Life**

*A. Coda, A. Cadelli, M. Zanella, and L. Fumagalli  
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### **Effect of Applied Stress during Straight Annealing on the Mechanical Properties of NiTiNol Wires**

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### **A Torsion-Based Fatigue Behavior of Nitinol Tube**

*M. Ehrlinspiel<sup>1</sup>, X. Huang<sup>1</sup>, A. Cadelli<sup>2</sup>, and F. Gallino<sup>2</sup>  
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### **How the Evolution of the Dynamic Elastic Modulus during Isothermal Tensile Tests Can Bring New Information on Mechanisms Deformation of a NiTi Superelastic Wire**

*T. Alonso, D. Favier, and G. Chagnon  
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### **Behavior of Low Roughness NiTi Wire in Rotary Bending Fatigue**

*C. Huang, A. Shen, and D. Aslanidis  
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### **Characterization of Current and Future Generation Nitinol Wire**

*S. Carroll<sup>1</sup>, A. McMahon<sup>1</sup>, M. Phan<sup>1</sup>, A. Salahieh<sup>1</sup>, and J. Yang<sup>2</sup>  
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### **Nitinol with Improved Ductility**

*A. Shamimi and T. Duerig  
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### **The Measurement and Interpretation of Transformation Temperatures in Nitinol**

*T.W. Duerig<sup>1</sup> and K. Bhattacharya<sup>2</sup>  
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## **Microstructure Characterizations of Shape Memory Materials II**

### **Nitinol Microstructural Characteristics Analyzed by Combined Focused Ion Beam and Scanning Electron Microscopy**

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### **Effects of Milling and Annealing on Formation and Structural Characterization of Nanocrystalline Intermetallic Compounds from Ni-Ti-Cu Elemental Powders**

*M. Ghadimi, Islamic Azad University, Tehran, Iran*

### **Selective Conversion of NiTi to NiTiZr High-Temperature Shape Memory Alloy**

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## **Surface Engineering and Corrosion I**

### **High-Precision Surface Analysis of NiTi by Glow Discharge Optical Emission Spectroscopy**

*A. Undisz, R. Hanke, K.E. Freiberg, and M. Rettenmayr*

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### **The Use of ASTM F3044-14 to Assess the Galvanic Corrosion Behavior of Nitinol**

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### **Size Effects in Corrosion Behavior of Electropolished Nitinol—Neurovascular Implants versus Heart Valve Frames**

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## **Surface Engineering and Corrosion II**

### **Effects of Fatigue Testing on Nickel Release in Nitinol Stents**

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### **Correlation of In-Vitro Corrosion to In-Vivo Corrosion in Nitinol Stents**

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## **Blue Oxide—Next Generation Surface Finish II**

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## **The Effect of Various Thermally Grown Oxides on the Corrosion Performance of Nitinol**

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## **Fabrication and Electrochemical Characterization of Titanium Dioxide Nanotubular Morphologies on Nitinol**

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## **Shot Peening Process Optimized for Nitinol Medical Devices**

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## **Laser Shock Wave Assisted Patterning on NiTi and NiTiHf Shape Memory Alloy Surfaces**

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## **Effects of Hydrogen-Charging on the Phase Transformation of Martensitic NiTi Shape Memory Alloy Wires**

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