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Titolo	Mechanical stress evaluation by neutrons and synchrotron radiation VI : selected, peer reviewed papers from the 6th International Conference on Mechanical Stress Evaluation by Neutrons and Synchrotron Radiation (MECA SENS VI 2011), September 7-9, 2011, Hamburg, Germany // edited by H.G. Brokmeier [and four others]
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Altri autori (Persone)	BrokmeierH. G
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Nota di contenuto	Mechanical Stress Evaluation by Neutrons and Synchrotron Radiation VI; Preface; Table of Contents; Chapter 1: Instruments and Techniques; Depth-Resolved Residual Stress Analysis with Conical Slits for High-Energy X-Rays; High-Resolution Strain Mapping Through Time-of-Flight Neutron Transmission Diffraction; Evaluation of Internal Stresses Using Rotating-Slit and 2D Detector; Energy Dispersive X-Ray Diffraction Imaging; Analysis of Residual Stresses in Pistons of Motor Vehicle Engines Using Neutron Diffraction at J-PARC Effect of Neutron Attenuation on Strain Measurement with Large Gauge Volume Engineering Neutron Diffraction Data Analysis with Inverse Neural Network Modeling; High-Pressure Deformation Techniques in Experimental Geophysics; Neutron Fibres: Confined Propagation and Focusing of Neutrons in the Micron Range and Residual Stress Analysis; The High Energy Materials Science Beamline (HEMS) at PETRA III; Chapter 2: Stresses and Microstructures; The Role of Plasticity Theory on the Predicted Residual Stress Field of Weld Structures In Situ Neutron Diffraction Measurements of the Deformation Behavior in High Manganese Steels Residual Stress in Ferrite and Austenite after Rolling and Recovery Processes; The Transformation Mechanism of

Phase to -Related Phases in Nb-Rich -TiAl Alloys Studied by In Situ High-Energy X-Ray Diffraction; Hydrogen Interaction with Residual Stresses in Steel Studied by Synchrotron X-Ray Diffraction; Effect of Intergranular Interaction and Lattice Rotation on Predicted Residual Stress and Textures. Case of Austenite and Ferrite Load Partitioning Study in a 3D Interpenetrating AlSi12/Al<sub>2</sub>O<sub>3</sub> Metal/Ceramic Composite Martensitic Transformation of Austenitic Stainless Steel Cruciform Geometry Sample by Biaxially Fatigued Cycling; Neutron Diffraction Study of Elastoplastic Behaviour of Al/SiCp Metal Matrix Composite during Tensile Loading and Unloading; Plastic Strain of GlidCop for Materials of High Heat Load Components; Thermal Stability of Retained Austenite in Low Alloyed TRIP-Steel Determined by High Energy Synchrotron Radiation; Evaluation of Residual Stresses at the Interface with Implant by Synchrotron Radiation Chapter 3: Surfaces and Coatings In-Depth Distribution of Stresses Measured by Multireflection Grazing Incidence Diffraction; Laser Surface Hardening of Steel: Effect of Process Atmosphere on the Microstructure and Residual Stresses; Residual Stress in Coatings Produced by Cold Spray; Study of Interactive Stresses in Thin WC-Co Coating of Thick Mild Steel Substrate Using High-Precision Neutron Diffraction; Through Thickness Residual Stress Measurements by Neutron Diffraction and Hole Drilling in a Single Laser-Peened Spot on a Thin Aluminium Plate Internal Residual Strain Distribution in Chromium-Molybdenum Steel after Carburizing and Quenching Measured by Neutron Strain Scanning

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#### Sommario/riassunto

The exciting and comprehensive program of the MECA SENS VI conference provided a platform for current topics within the research fields of Mechanical Stress Evaluation with Neutrons and Synchrotron Radiation. The resulting contributions in this volume offer an excellent overview of all the various aspects in this field ranging from fundamental research and modelling to practical engineering applications. The 31 papers explore all aspects of the field from fundamental research and modeling to practical engineering applications. The topics include evaluating internal stresses using rotating-slit

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