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location and post-treatment on the microstructure of EBM-built Alloy 718 -- Part 3. Applications -- ICME Based Additive Manufacturing of Alloy 230 Components -- Simulation of Co-Precipitation Kinetics in Superalloy 718 -- Part 4. Corrosion -- Performance of Wrought Superalloys in Extreme Environments -- Corrosion and Carburization Behavior of Ni-Cr-Mo-Nb Superalloys in a High Temperature Supercritical-CO2 Environment -- High Performance New Ni-base Alloy AF955 (UNS N09955) for Oil and Gas Industry -- Hydrogen Influence on Crack Propagation and Stress-Strain Evolution of Alloy 718 -- Isothermal Oxidation Behavior of EBM-additive Manufactured Alloy 718 -- Part 5. Melting and Casting -- A Computational Model of the Electroslag Remelting (ESR) Process and Its Application to an Industrial Process for a Large Diameter Superalloy Ingot -- Effect of Homogenization Temperature on Microstructures of IN718C Alloy with Different Solidification Cooling Rates -- Grain Refinement of IN718 Superalloy under the Modified Thermally-controlled Solidification Process -- Melt Parameters and Resulting Characteristics in Laboratory-Scale Electroslag Remelting -- Production of Nitride-free 718 by the VIM-VAR Processing Route -- Part 6. Microstructure and Behavior -- Characterization and Modeling of Deformation Mechanisms in Ni-base Superalloy 718 -- Characterization of Nano-Scale' Phase in HPT-Disk P/M Superalloys HGN300 by Small-Angle X-ray Scattering -- Development of an Automated Property Simulation Tool for Direct Aged Alloy 718 Engine Disk Forgings -- Microstructure Dependence of Dynamic Impact Behaviour of ATI 718Plus Superalloy -- 3D Stochastic Modelling of Microstructure Evolution during Solidification of Alloy 718 -- Analysis of microporosity-dependent fatigue crack behavior in Alloy 718 by using synchronic radiation X-ray CT and FEM -- Characterisation of the Initial Stages of Dynamic Recrystallisation in ATI 718Plus® -- Compositional Design and Mechanical Properties of INCONEL® Alloy 725 Variants -- Constrained Lattice Misfit Measurement in Bulk Inconel 718 Using High Resolution Neutron Diffraction -- Dependence of Creep Strength on Cooling Rate after Subsolvus Solution Treatment in Wrought Alloy 718 -- Depletion Induced Grain Growth in Alloy 751 after Long Term Aging and Its Effect on Fatigue -- Effect of Grain-Boundary Fe2Nb Phase on Stress-assisted Grain-Boundary Oxidation Behavior in Novel Austenitic Heat-resistant Steel of Fe-20Cr-35Ni-2.5Nb -- Effect of Heat Treatment on Microstructure and Mechanical Properties of VDM Alloy 780 Premium -- Effect of Homogenization on Creep of Additive Manufactured Inconel 718 -- Effects of HIP and Heat Treatment on Microstructure, Fracture Toughness and Fatigue Crack Growth Behavior of SLM-Based IN718 -- Effects of Phosphorus Addition on Creep Properties of Wrought Gamma-Prime Strengthened Ni-based Superalloy -- Enhanced Strength of Inconel 718 by High Rate Severe Plastic Deformation -- Evaluation of the Stress-Strain State in Alloy 718 after Hydrogen Charging -- Experimental TTT Diagram of HAYNES 282 Alloy -- Influence of Residual Stresses on Aging Precipitation Behavior of Alloy 718 -- Machine learning to optimize additive manufacturing parameters for laser powder bed fusion of Inconel 718 -- Mechanical Performance of Various INCONEL® 740/740H Alloy Compositions for Use in A-USC Castings -- Microstructural Characterization and Mechanical Properties of Rene 65 Precipitates -- Microstructure Development in Track-by-track Melting of EBM-manufactured Alloy 718 -- Modeling Tensile, Compressive, and Cyclic Response of Inconel 718 Using a Crystal Plasticity Model Incorporating the Effects of Precipitates -- Novel Fractgraphy of Ni-based Alloy by SEM/EBSD Method -- On the Effect of Alloying Additions to the Ni-Cr-Al-Nb Dual-Superlattice Gamma-

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Sommario/riassunto

This technical meeting will focus on Alloy 718 and Superalloys in this class relative to alloy and process development, production, product applications, trends and the development of advanced modeling tools. The symposium provides an opportunity for authors to present technical advancements relative to a broad spectrum of areas while assessing their impact on related fields associated with this critical alloy group. There are continuing innovations relative to these alloys as well as novel processing techniques which continue to extend applications in very challenging environments ranging from corrosion resistance in the deep sea to high-stressed space applications.