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in Sheet Metal Materials for the Numerical Simulation of Clinching Processes -- A Method for Characterization of Geometric Deviations in Clinch Points with Computed Tomography and Transient Dynamic Analysis -- A First Approach for the Treatment of Galvanic Corrosion and of Load-Bearing Capacity of Clinched Joints -- Approach for the Automated Analysis of Geometrical Clinch Joint Characteristics -- Surface Treatment to Promote Joining of Glass Fiber Reinforced Plastic and AZ31 Magnesium Alloy for Fiber Metal Laminates via Hot Metal Pressing -- New Joining Concepts for Self-Pierce Riveting -- Numerical and Experimental Fracture Mechanical Investigations of Clinchable Sheet Metals Made of HCT590X -- Chapter 2: Forming. Stretch Forming of Ti-6Al-4V Hybrid Parts at Elevated Temperatures -- Introducing Residual Stresses on Sheet Metals by Slide Hardening under Stress Superposition -- Assessment of Springback Behaviour of 800-1200 MPa Dual-Phase Steel Grades -- Functional Gradation in Precipitation Hardenable AA7075 Alloy by Differential Cooling Strategies -- Towards Automatic Part Identification in Sheet Metal Workshops -- Effect of Stretching on Springback in Rotary Stretch Bending of Aluminium Alloy Profiles -- Investigation of the Influence of a Superimposed Oscillated Forming Process on Forming Characteristics -- Chapter 3: Incremental Forming -- Development of Magnetic Field-Assisted Single-Point Incremental Forming -- Multistep Incremental Forming beyond 100° -- On the Effectiveness of SPIF Process to Re-Form End-of-Life Components as Compared to Conventional Forming Approach -- Incremental Roller-Flanging of Thick Metal Sheets -- Geometry Compensation Methods for Increasing the Accuracy of the SPIF Process -- Chapter 4: Welding and Bonding -- Influence of Roughness and Curing Temperature on the Strength of Aluminum Adhesively Bonded Joints -- Laser Welding of Laser Powder Bed Fusion Manufactured Inconel 718: Microstructure and Mechanical Properties -- Laser Welding of Laser Powder Bed Fusion (LPBF) Manufactured 316L Stainless Steel Lap Joint -- Microstructural Evolution and Tensile Strength of Laser-Welded Butt Joints of Ultra-High Strength Steels: Low and High Alloy Steels -- Microstructure and Formability of Laser Welded Dissimilar Butt Joints of Austenitic-Ferritic Stainless Steels -- Chapter 5: Characterisation -- Investigation of the Micro Hardness at the Cut Surface of Fine Blanked Parts with Variation of Sheet Material and Cutting Temperature -- Material Model for the Production of Steel Fibers by Notch Rolling and Fulling. The Frictional Force between Slug and Die in Shear Cutting after Material Separation -- Fracture Characterisation by Butterfly-Tests and Damage Modelling of Advanced High Strength Steels -- Determination of the Biaxial Anisotropy Coefficient Using a Single Layer Sheet Metal Compression Test -- Local Strain Measurement in Tensile Test for an Optimized Characterization of Packaging Steel for Finite Element Analysis -- Keyword Index -- Author Index.

Sommario/riassunto

Selected peer-reviewed full text papers from the 19th International Conference on Sheet Metal (SheMet 2021) Selected, peer-reviewed papers from the 19th International Conference on Sheet Metal (SheMet 2021), March 29-31, 2021, Erlangen, Germany.
