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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Development of a Low Silica Calcium Aluminate Based Mould Flux for Casting High Al/Mn Steels -- Some Aspects of the Chemistry of Slags containing Cr and V -- Solid state reduction of Hematite ore using hydrogen at moderate temperatures -- Influence of silicon source on the steel cleanness -- Utilization of Biomass Pellets in the Iron Ore Sintering process -- Carbothermic reduction and kinetics of a lean grade multimetallic magnetite ore -- Reduction kinetics of composite steel slag-coke pellets -- Investigating the Suitability of Local Riverbed Sand as a Mold Material for Foundry Industry: A Comparative Study -- Effect of external magnetic field on grain boundary migration in non-magnetic systems: A Phase-field Study -- Deformation in metals: insights from ab-initio Calculations -- Heat Transfer Modelling for a Thermomagnetic Energy Generator Design -- Theoretical Comparison and Machine Learning Based Predictions on Li-Ion Battery's Health

Using NASA-Battery Dataset. -- Prediction of Mechanical Properties of Cr-Mn-N Austenitic Stainless Steel using Machine Learning approach -- On the deformation mechanism and dislocation density evolution in a polycrystalline nano copper at 10 K-700 K / 108 s-1-109 s-1 employing molecular dynamics simulations -- Thermodynamic assessment of Tin based Molten Binary Indium-Tin Solder Alloys -- Nanosized hybrid polymer modifiers (HPM) for improved mechanical and thermal behavior of carbon fiber reinforced composites -- Efficient degradation of pendimethalin via photo-catalytic ozonation over Ni/Mg @ TiO₂ nanocomposites -- Effect of A-site Pr-doping on Dielectric and Thermoelectric Properties of Lanthanum Based La₂FeNbO₆ Double Perovskite Oxide Materials -- Investigation of Solidification Behavior and Processing Defects in the Continuous Cast Al-based Composite Sheet -- Influence of Sodium on the Microstructure of Laser Rapid Manufactured NiCrSiBC Hardface Alloy Coatings -- Study of Geometry Modulated Magnetoelectric Composite Structure -- Development of Third Generation Advanced High Strength Steel -- Cracking problem during room temperature cold rolling of three high Al low C ferritic low density-steels -- Effect of Cu on the microstructure and properties of hot rolled low carbon steels -- Role of Cerium on high-temperature oxidation behaviour of low-carbon steel -- High temperature oxidation of T91 alloy -- Development of High Quality SWRH82A Grade Tyre Cord Steel Wire Rods -- Rotary Friction Welding of Cast Nickel Base Superalloy with Martensitic Stainless Steel for Aero Engine Application -- Brittle Fracture Failure Analysis under Mixed-Mode Condition Using Asymmetric Edge Cracked Semicircular (AECS) Configuration -- Analyzing the Effect of Dynamic Impact in 6061 Al Alloy using MATLAB as a post processing tool -- Ratcheting fatigue behaviour of advanced structural materials -- Study of microstructure and mechanical properties of similar and dissimilar FSW of Al 7075 and Mg AZ31 alloys without and with Zn interlayer -- Mechanical and Corrosion Study of Dissimilar Friction Stir Welding of AZ31Mg alloy and Cu-8Zn alloy -- Enhancing Technologies to improve Metallurgical Processes -- Smelting Reduction Technology – Current status and future outlook -- Green Steel Technology: A viable approach for sustainable world -- A review on use of biomass as an alternative to coal for sustainable ironmaking -- Basics of Iron Ore Sintering.

Sommario/riassunto

This book presents peer reviewed articles from The International Conference on Metallurgical Engineering and Centenary Celebration (METCENT 2023), held at Indian Institute of Technology (BHU) Varanasi, India from the 26-28th of October 2023. It covers wide areas of metallurgical and materials science, highlighting recent advancements in these areas, including but not limited to Advanced Steels, Computational Material Science, Recent Ferrous/Non-Ferrous Metallurgy Processes, Green Iron and Steel Making Technologies and others. METCENT 2023 provides a unique opportunity to all the Metallurgists, Materials Scientists, Academicians and Industry experts to share their experiences on this special occasion.
