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Nota di contenuto	A Mini State of Art Survey on Photovoltaic – Thermal Desalination Systems -- Mathematical Modeling and Performance Analysis of Single Slope Solar Desalination System -- Analysis and comparison of various high performance folded cascode OTA topologies -- Simplification of Governing Equation for Fluid Flow Between Two Concentric Cylinders -- Optimization Techniques used to Optimize Process Parameters of Submerged Arc Welding: A Review -- Vibratino analysis of FGM conical shell -- Feasibility and performance analysis of earth tube heat Exchanger -- Combined objective optimization of FMS scheduling by a hybrid genetic algorithm -- A Preliminary Assessment of Solar Industrial Process Heating For Cement Industry -- Design and Simulation of Structural Components of Affordable, Automated Solar Panel Cleaning Mechanism -- Performance Assessment of Parabolic Trough Collectors with Variable Mass Flow Rates -- Effect of Block Location in a Suddenly Expanded Micro Combustor -- Study of the

degradation in a unitized regenerative fuel cell -- Energy and Exergy Analysis of Poovan Banana under Single Slope Forced and Natural Convection Solar Drying -- Integrated Approach for Flexible Job Shop Scheduling Using Multi Objective Genetic Algorithm -- Prediction of Angular Distortion in MIG Welding of Stainless Steel 202 Plates -- Emission analysis of compression ignition engine with induced chemical reaction between engine exhaust and slaked calcium hydroxide solution -- Development of Mathematical Models to Predict the Effect of Welding Parameters on Bead Geometry and Shape Relationships of MIG Welded Stainless Steel 202 Plates -- Emission Reduction from Diesel Engine using Alkali Solution, and Carbon Black in Union with Catalytic Convertor.

#### Sommario/riassunto

This book presents select papers from the International Conference on Energy, Material Sciences and Mechanical Engineering (EMSME) - 2020. The book covers the three core areas of energy, material sciences and mechanical engineering. The topics covered include non-conventional energy resources, energy harvesting, polymers, composites, 2D materials, systems engineering, materials engineering, micro-machining, renewable energy, industrial engineering and additive manufacturing. This book will be useful to researchers and professionals working in the areas of mechanical and industrial engineering, materials applications, and energy technology.