# Journal of The Institution of Engineers (India): Series C

# Volume 102 · Issue 2 · April 2021

#### **ORIGINAL CONTRIBUTIONS**

Analysis of Thermosiphon Heat Pipe Performance Using an Artificial Neural Network R.H. Rajab · H.H. Ahmad 243

Automatic Feature Recognition of Cross Holes in Hollow Cylinders A.D. Ibrahim · H.M.A. Hussein · S.A. Abdelwahab 257

Combustion of Kerosene Jet A Fuel and Superheated Steam Injection in an Aviation Turboshaft Engine: Improving Power Output and Reducing Emissions A. Hasan · O.J. Haidn 275

Double-Girder Overhead Crane Optimum Design Using Weighted Decision Matrix and Finite Element Analysis H.S. Mohamed · S.A. Abdelwahab 283

Effect of General Thermal Boundary Conditions on the Dynamic and Buckling of Polymeric Hybrid Nanocomposite Beam with Variable Thickness M.H. Yas · S. Afshin **305** 

Ergonomic Assessment of Postural Loads in Smalland Medium-Scale Foundry Units A.M. Qureshi · D.G. Solomon 323

Feasibility Analysis of Powder-Mixed Deionized Water as Dielectric for Machining Ti6Al4V A.Y. Joshi · A.Y. Joshi 337

Finite Element Analysis and Multi-criteria Decision-Making (MCDM)-Based Optimal Design Parameter Selection of Solid Ventilated Brake Disc N. Maheshwari · J. Choudhary · A. Rath · D. Shinde · K. Kalita 349

Finite Element Simulation of the Cold Expansion Process with Split Sleeve in 7075 Aluminum Alloy K. Liu · L. Zhou · X. Yang · M. Li · W. Wang · W. Zhu 361

Investigating Mechanical Properties of 3D-Printed Polyethylene Terephthalate Glycol Material Under Fused Deposition Modeling

T. Panneerselvam · S. Raghuraman · N. Vamsi Krishnan 375

#### **ORIGINAL PAPER**

Natural Convection from a Pair of Heated Cylinders in a Square Cavity with Non-uniform Temperature on the Side Walls N. Goswami · P.R. Randive · S. Pati 389

#### **ORIGINAL CONTRIBUTIONS**

Nonlinear Buckling Simulations of Stiffened Panel Exposed to Combination of Transverse Compression, Shear Force and Lateral Pressure Loadings O. Ozguc 397

Performance and Environmental Studies of a Compression-Ignition Stationary Engine Under Biogas-Diesel Dual-Fuel Mode B.B. Sahoo · N. Sahoo · U.K. Saha 409

Ranking of Additive Manufacturing ImplementationFactors using Analytic Hierarchy Process (AHP)H.C. Sonar · V.V. Khanzode · M.M. Akarte421

Simplified Model for Directional Delivery of Air Through Louvers Used in Air-Conditioning Systems V. Vidiyala · V.K. Arghode 427

Simulation of Mooring Line Operation in Ship Mooring X. Jiang · H. Ren · M. Wang · Y. Qu 439

Vehicle State Estimation Based on Unscented Kalman Filtering and a Genetic-particle Swarm Algorithm Y.-J. Liu · C.-H. Dou · F. Shen · Q.-Y. Sun 447

### CASE STUDIES

Hindcast Modelling of Waves and Estimation of Power Potential in the Bay of Bengal A. Sahu · S. Jeyaraj · B. Ramakrishnan 471

Industrial Furnace Optimization by Robust Design for Efficiency Upgradation and Adaptability to Different Loads

M. Borate · P.D. Deshmukh · A. Shetty 477

Natural Convection Heat Transfer Characteristics of the Annular Fins on the Measuring and Monitoring Devices

A. Zambare · V. Swakul · A. Kulkarni 485

## **REVIEW PAPERS**

A Comprehensive Review on the Effect of Nanoparticle Dispersed Diesel–Biodiesel Blends Fuelled CI Engine R. Vara Lakshmi · S. Jaikumar · V. Srinivas 495

A Review on Vibration-Based Fault Diagnosis Techniques for Wind Turbine Gearboxes Operating Under Nonstationary Conditions V. Sharma 507

A Review to the Progress of Solar Utility Scale and Solar Thermal Power in India—Policies, barriers and the way forward A.K. Singh · K. Pandey 525

# ARTICLE OF PROFESSIONAL INTERESTS

A Periodic Heating into Different Layers of a Semi-Infinite Solid S. Sadik 545

Steer Directions: N. Weesend Steers

Dat + Sense + Jac

- an Changelst

Experimental Study on the Performance Enhancement of the Photovoltaic Cells by Using Various Nano-Enhanced PCMs H.A. Refaey · M.H. Wahba · H.E. Abdelrahman · M. Moawad · N.S. Berbish 553

Further articles can be found at link.springer.com

Instructions for Authors for J. Inst. Eng. India Ser. C are available at http://www.springer.com/40032

Making (MCDM)-Based Optimal Deven Paramete

Process with Split Steeve in 7075 Alustiana Allo