

Contents

Promising Configurations for Future Passenger Aircraft.	1
Dieter Scholz	
Ultrasonic Material Characterization and Testing of Anisotropic Components	5
Eckhardt Schneider and Christian Boller	
Measurement of Some Special Parameters of Engines.	7
P.A. Lakshminarayanan	
The Wind Tunnel Test and Unsteady CFD of an Ornithopter Formation	9
Lung-Jieh Yang, Hsi-Chun Lee, Ai-Lien Feng, Chien-Wei Chen, Jenmu Wang, Yuan-Lung Lo and Chia-Kuo Wang	
Strategies for Better Fuel Economy, Light Weighting, and Friction Reduction in Cylinder Components of IC Engines	17
R. Mahadevan	
Fatigue and Fracture Reliability of Additively Manufactured Al-4047 and Ti-6Al-4V Alloys for Automotive and Aerospace Applications	19
Shafaqat Siddique and Frank Walther	
Recent Advances in High Temperature Structural Integrity	27
Shan-Tung Tu	
Future Technology Scenarios for Urban Mobility in India	29
Shankar Venugopal	
Wiring the Tin–Silver–Copper Alloy by Fused Deposition Modeling	31
Yuh-Chung Hu, Yi-Ta Wang and Hsiu-Hsien Wu	

Design and Study of Aerodynamics of Wind-Solar Hybrid System for Domestic Application by Using Balsa Wood	41
Nikhil V. Nayak, P.P. Revankar and M.B. Gorawar	
An Automated System for Motioning the Cargo for Ground and Air Operations.	59
Utsav Bhardwaj	
Analytical Studies on TIG Welding of TI-6AL-4V Alloy Plates Using CAE	69
T.V.B. Babu, V. Ajay and N. Nagendran	
Shape Parameterization of Airfoil Shapes Using Bezier Curves.	79
A. Shikhar Jaiswal	
Flow Configuration Influence on Darcian and Forchheimer Permeabilities Determination.	87
Hussain Najmi, Eddy E.L. Tabach, Khaled Chetehouna, Nicolas Gascoin, Safaa Akridiss and François Falempin	
An Experimental Study on Flow of Micronized Silicon Carbide Particles Through Sintered Porous Materials	95
Aswin Chinnaraj, Eddy E.L. Tabach, Khaled Chetehouna and Nicolas Gascoin	
Design and Fabrication of a Quick Dismantlable Remotely Controlled Semirigid Finless Airship	103
Sohrab R. Mistr and Rajkumar S. Pant	
Experimental and Simulation Study of Modified Acoustic Horn Design for Sonic Soot Cleaning.	117
Deshmukh N. Nilaj and Arti Vishwanath	
Fuzzy Logic Simulation for Brake-by-Wire Control System	135
Pajarla Saiteja and S. Jeyanthi	
Effect of Permeability on the Rayleigh-Type Acoustic Streaming.	149
Neetu Srivastava	
Effect of Print Angle on Mechanical Properties of FDM 3D Structures Printed with POM Material.	157
Yi-Ta Wang and Yi-Ting Yeh	
Finite Element Analysis of Surface Grinding Process Using Nanofluids.	169
Ongolu Suresh Babu, Venkata Ramesh Mamilla and G. Lakshmi Narayana Rao	

Resonance Behavior of Steam Turbine Blades with Zigzag Lacing Pins	175
B.L. Jaiswal	
Optimization of GTAW Process Parameters on Mechanical Properties of AA 7075-T6 Weldments	187
K.S. Pujari and D.V. Patil	
Experimental Investigation on the Effectiveness of Active Control Mechanism on Base Pressure at Low Supersonic Mach Numbers	197
Zakir Ilahi Chaudhary, Vilas B. Shinde, Musavir Bashir and Sher Afghan Khan	
A Review on the Trends and Developments in Hybrid Electric Vehicles	211
C. Parag Jose and S. Meikandasivam	
Design of Expert Combustion Monitoring System.	231
S. Yuvaraj, K.M. Kiran Babu, P. Kaleeshwaran and S. Tamilselvan	
Structural Performance Analysis of SAE Supra Chassis	239
Shubham Thosar, Antriksh Mutha and S.A. Dharurkar	
Parametric Optimization of FSAE Restrictor for Random Vibrational Analysis	253
A.V. Pavankumar, R. Suraj, Puneet Kumar, H.S. Shiva Prasad and Kumar K. Gowda	
Taguchi's Parametric Approach in Optimizing Selective Inhibition Sintering Process Variables	263
P. Arunkumar and E. Balasubramanian	
Design of an Aircraft Wing for Given Flight Conditions and Planform Area.	271
H.P. Bharath, H.K. Narahari and A.T. Sriram	
Investigations on the Influence of Mechanical Behaviour of Copper Aluminium Nickel Powder Compacts Processed Through Powder Metallurgy	281
Abirami, K. Thirupathi and S. Raghuraman	
Investigations on the Performance of Various Bio-Fuels Along with Low Thermal Conductivity Piston Crown in a Diesel Engine.	293
Akkaraju H. Kiran Theja and Rayapati Subbarao	
Design and Development of FPGA-Based MAGLEV System for a Low-Speed Wind Tunnel	303
Sumukh Surya and D.B. Singh	

Performance Investigation of High Temperature Combustion Technology (HiCOT) Using CFD Simulation	309
T. Yokes, M. Manjunath, P. Prithivi, S. Ravi Shankar and P.S. Premkumar	
Calculation of Theoretical Performance of Boron-Based Composite Solid Propellant for the Future Applications	327
Syed Alay Hashim, Manu Lahariya, Srinibas Karmakar and Arnab Roy	
PreSTo Wing Module Optimization for the Double Trapezoidal Wing	337
Karunanidhi Ramachandran and Dieter Scholz	
Optimization Technique Applied for Method of Evaluation of a Controllable Factor of FSAE Car Chassis	347
R. Suraj, A.V. Pavan Kumar, Abhilash P. Kulkarni, S. Kiran Aithal and R. Vinutha	
Multi-objective Optimization of EDM Process Parameters Using PCA and TOPSIS Method During the Machining of Al-20 % SiC_p Metal Matrix Composite	359
N. Pallavi Senapati, Rawnak Kumar, S. Tripathy and Amruta Rout	
Study of Static Stall Characteristics of a NACA 0012 Aerofoil Using Turbulence Modeling	369
Aarjav Malhotra, Arpan Gupta and Pradeep Kumar	
Effect of Compaction Aspect Ratio on Wear Characteristics of Sinter Extruded Pure Copper Processed Through Powder Metallurgy Route	379
S. Shruthi, S. Venkatakrishnan, S. Raghuraman and R. Venkatraman	
Optimization of Process Parameters and Investigation on Surface Characteristics During EDM and Powder Mixed EDM	385
S. Tripathy and D.K. Tripathy	
Evaluation of Tensile Properties of Natural Silk and Coir Fibers	393
S. Gowthaman, C. Gowri Sankar and P. Chandrakumar	
Comparison of Turbulence Models in Simulating Axisymmetric Jet Flow	401
B.T. Kannan, S. Karthikeyan and Senthilkumar Sundararaj	
Finite Element Analysis of High Strength Polymers Interaction with Inhibitors in Selective Inhibition Sintering Process	409
A. Aravind, T.N. Siddiqui, P. Arunkumar and E. Balasubramanian	

Optimization of Process Parameters of Powder Additive-Mixed Electrical Discharge Machining	415
Pallavi Chaudhury, Sikata Samantaray and Sibakanta Sahu	
A Spring-Activated Quick-Response Mechanism for Legs of a Mooring Mast: Conceptual Design and Analysis	427
Utsav Bhardwaj, Syed Khaleelullah and Rajkumar S. Pant	
Aluminum Agglomerate Size Measurements in Composite Propellant Combustion	437
K. Jayaraman and G. Boopathy	
Handling Simulation and Experimentation of an Armoured Multi-axle Vehicle with Multi-axle Steering	447
V.V. Jagirdar, V.P. Maskar and M.W. Trikande	
Analysis of Air-to-Air Rotary Regenerator for HVAC Systems Using CFD	455
S. Mahesh, B. Jayaraman and R. Madhumitha	
Design and Optimization of a Steering Knuckle of FSAE Car.	463
Antriksh Mutha, Shubham Thosar and Nikhil Ghodmare	
CFD Analysis of Flapping Wing for MICAV Application	473
P. Srinivasa Murthy	
GA-Based Multi-objective Optimal Control of Nonlinear Quarter Car Suspension	481
M.P. Nagarkar and G.J. Vikhe Patil	
Study of the Influence of the Process Variables on Formability and Strain Distribution in Incremental Sheet Metal Working of AA 1050 Sheets	493
M. Amala Justus Selvam, R. Velu and T. Dheerankumar	
Operating Characteristics of Multi-cylinder Petrol Engine Using LPG With Methanol	507
S. Somasundaram, T. Mohanraj, S. Pasupathy Raju and K. Murugu Mohankumar	
Advances in Light Weight Materials for Body-in-White (BIW)	517
Avinash Arankalle	
Health Monitoring for Armoured Fighting Vehicles	527
N. Ponnusamy, K. Vijayalakshmi and M. Vasantharaj	
Orbital Parameters Variations of IRNSS Satellites	537
S. Sivaraj, Umesh Swami, R. Babu and S.C. Rathnakara	

Cabin Control System on Temperature Impact Using Occupant Detection Scheme for M1 Category Vehicles	549
Surender Dhanasekaran, Andhavarapu Siva, Kevin Nesamani and Patil Pritam	
Viabilities of Replacing Combustion Engine by Electromagnetic Engine	561
Anirudh Satya Duvvuri and N. Venkatachalapathi	
Comparative Approach Toward Modified Smith Predictor and Back Calculation design for Conical Tank Level Process Control	569
Eadala SarathYadav and Thirunavukkarasu Indiran	
A Study on Effect of Piston Bowl Shape on Engine Performance and Emission Characteristics of a Diesel Engine.	579
K. Sakthisaravanasenthil, S. Senthilkumar and G. Sivakumar	
Investigation of a Novel Turboprop-Driven Aircraft Concept Including Future Technologies.	589
Andreas Johanning and Dieter Scholz	
Author Index	605

Innovative Design and Development Practices in
Aerospace and Automotive Engineering

I-DAD, February 22 - 24, 2016

Bajpai, R.P.; Chandrasekhar, U. (Eds.)

2017, XX, 607 p. 412 illus., 320 illus. in color.,

Hardcover

ISBN: 978-981-10-1770-4