2017 8th International Conference on Mechanical and Aerospace Engineering (ICMAE 2017)

Prague, Czech Republic
22-25 July 2017

IEEE Catalog Number: CFP17G51-POD
ISBN: 978-1-5386-3307-6
2017 8th International Conference on Mechanical and Aerospace Engineering
ICMAE 2017

Table of Contents

Message from the Conference Chair..................................................................................................................xv

辇 Automotive
Behaviors at a High Ambient Temperature of Binary Mixture Single Droplets Containing Pentadecane and
Dodecane at Various Volume Ratios .................................................................................................................. 1
W. Manosroi

Electromagnetic and Thermal Analysis/Design of an Induction Motor for Electric Vehicles ......................... 6
Cenk Ulu, Oğuz Korman, Güven Kömürgöz

Empirical Method for Determining Axial Load Distribution in Joints Formed by VBand Clamps ............. 11
Ahmed Ali, S. M. Barrans, Fabio Ghiradi

辇 Manufacturing
Effect of Machining Parameters on Surface Roughness in Al 2618 Alloy Subject to Multi-axis Machining
Process Using Ball Nose Cutting Tools ......................................................................................................... 16
Md Shams E Tabriz, Simon M Barrans, Paul J. Bills

Preparation, Preliminary Characterization and Mechanical Properties of Epoxy Composites Reinforced with
Spent Coffee Grounds .................................................................................................................................... 21

3D Model Preparing for Rapid Prototyping by FDM Method ........................................................................ 25
Karel Dvorak

Hierarchical Deformation of Super Carbon Nanotube under Tensile Load ................................................. 30
Xian Shi, Xiaoqiao He

Prediction on In-Plane Tension Young’s Modulus of Braided Composites with Pore Matrix ...................... 35
Tianya Bian, Zhidong Guan, Faqi Liu, Tian Ouyang
Study on Ductile-Brittle Transition of Single Crystal Silicon by a Scratching Test Using a Single Diamond Tool................................................................. 40

Koki Mukaiyama, Mitsunori Ozaki, Tadahiro Wada

Fault Prediction Method Based on Multi-field Information Fusion for Complicated Ammunition Feeding System....................................................................................... 45

Pan Hongxia, Pan Mingzhi, Ren Haifeng, Xu Xin

Tool Wear of Poly Crystalline Diamond in Cutting Ti-6Al-4V Alloy with High-Pressure Coolant Supplied ... 50

Tadahiro Wada, Kazuki Okayama

Numerical Investigation into Ballistic Impact Response of Hybrid Woven Fabric Laminates ..................... 56

Guangmeng Yang, Xiaopeng Wan, Chi Hou

Thermo-mechanical Coupling Performance and Bearing Capacity Analysis of Two Kinds of Lattice Sandwich Structures ........................................................................ 62

Heyuan Huang, Meiying Zhao, Chi Hou

The Effects of the Use of Single Task-Oriented Maintenance Concept and More Accurate Letter Check Alternatives on the Reduction of Scheduled Maintenance Downtime of Aircraft ........................................... 67

Ibrahim Ozkol, Caner Senturk

Feedforward Reference Compensation Using Bilinear Interpolation for Long Range Motion of Six Degrees-of-Freedom Magnetic Levitation Planar Motor ........................................................................ 75

Jae-heon Jeong, Jiheun Ryu, Dae-gab Gweon

Effect of Thermoplastic Toughening Agent on Phase Separation and Physicochemical Properties of Bismaleimide Resin........................................................................................ 79

Chenqian Zhang, Zhidong Guan, Hongjun Ye, Jing Chen

Edgewise Compression Behavior of Honeycomb Sandwich Structures ......................................................... 85

Cheng Qiu, Zhidong Guan, Zengshan Li, Kailun Wang

The Experiment and Numerical Simulation of Woven Composite Fastener Shear Behavior ....................... 92

Faqi Liu, Zhidong Guan, Tianya Bian, Riming Tan, Yongjie Huang

A Case Study in the Limitations of Crack Detection with Respect to an Aircraft Brake System Piston Rod .................................................................................................................. 99

Judy Turnbull, Roger Metcalfe, Geoff Head

Impact and Compression after Impact Behavior of Single-stiffener Composite Panels.............................. 106

Riming Tan, Zhidong Guan, Zhun Liu, Wei Sun, Jifeng Xu

Time-temperature Dependent Mechanical Properties of Cured Epoxy Resin and Unidirectional CFRP ... 113

Zhun Liu, Zhidong Guan, Faqi Liu, Jifeng Xu
Mechanical Simulation of Open Hole Compressive Behavior for High-Modulus and High-Strength Composite Laminates

Ling Xin, Jie Yang, Lianmei Wu, Gang Chen, Mi Zhang, Zhidong Guan

Influence of Object Positioning on Heat Transfer Coefficient in Quenching Process

Sandeep Kedarnath Davare, G. Balachandran, R. K. P. Singh

Polymer-Made Lightweight Planar Mechanisms and Spatial Mechanisms for Space Robots

Mikio Horie

Fabrication of Tungsten Carbide Micro Fins by Sliding ECM

Po-Zen Yang, Jung-Chou Hung, Chia-Wei Cheng

Feature Extraction and Classification of Machined Component Texture Images Using Wavelet and Artificial Intelligence Techniques

Vinay Vakharia, M. B. Kiran, Neil Jayeshbhai Dave, Uday Kagathara

Engineering Issues of Rhenium-Iridium Engine thrust Chamber by Chemical Vapor Deposition Technique

Xubo Yan, Fangtao Xu, Xuhu Zhang, Haiqing Li, Yanbo Sun

Mechanical Behaviour of Titanium Sandwich Structures with Kagome Lattice Truss Cores

Hou Chi, Zhang Lei

Investigation on the Optimal Geometrical Parameters for Cylindrical Cups in Warm Hydromechanical Deep Drawing Process

Mevlüt Türköz, Doğan Acar, Murat Dilmeç, H. Selçuk Halkacı

Design of Sheet Hydroforming Press Body

Mevlüt Türköz, Semih Avci, Murat Dilmeç, Ekrem Öztürk, Mehmet Halkacı, H. Selçuk Halkacı

Multi Characteristic Optimization in Die sinking EDM of En31 Tool Steel Using Utility Concept

Dong-Ha Lee, Navdeep Malhotra, Dong-Won Jung

Mechanical Applications

Effect of Working Orientations, Mass Flow Rates, and Flow Directions on Thermal Performance of Annular Thermosyphon

Niti Kammuang-lue, Phrut Sakulchangsatjatai, Pradit Terdtoon

Displacement Discontinuity as a Result of Residual Stress Relief

Mikhail D. Kovalenko, Irina V. Menshova, Alexander P. Kerzhaev

Influence of Heat Treatment on Mechanical Properties and Microstructure of EN AW 6082 Aluminum Alloy

Shrikant Jadhav, Rajkumar Singh, Vinayak Pawar, Santosh Mane
Bending of a Semi-strip with Longitudinal Stiffeners: Exact Solution .......................................................... 188
   Mikhail D. Kovalenko, Irina V. Menshova, Alexander P. Kerzhaev

Computational Grid Dependency in CFD Simulation for Heat Transfer ....................................................... 193
   Zhang Xiang, Yang Wei, He Haibo

Numerical Analysis of Convective Heat Transfer of Airfoil Ice Protection Area ........................................... 198
   Zuodong Mu, Guiping Lin, Xiaobin Shen, Ying Zhou

Effect of Cement Kiln Dust on Properties of Al-base Composite Prepared by P/M ...................................... 204
   Shahad Ali Hammood, Haydar Al-Ethari, Hayder Abed Hasan Al-Juboori

The Influence of Void Distribution on Transverse Mechanical Properties of Unidirectional Composites ...
   Bo Li, Meiyinng Zhao, Xiaopeng Wan

Singularity-Free Planning for a Robot Cat Free-Fall with Control Delay: Role of Limbs and Tail ............... 215
   S. M. Hadi Sadati, Ali Meghdari

Finite Element Analysis of Configuration and Fiber Orientation Effects on Fiber Metal Laminates Subjected
to Low Velocity Impact ...................................................................................................................................... 222
   Peicheng Li, Meiyinng Zhao, Xiaopeng Wan

Modeling and Control of Flexible Structure Systems with Lumped Masses ................................................. 228
   Jiradech Kongthon

A Study of Shock Capturing Methods for Simulations of Compressible Turbulence with Shock Waves.... 234
   Di Sun, Chao Yan, Feng Qu

High Accuracy Schemes for Compressible Turbulence Simulations .......................................................... 239
   Yansu Li, Chao Yan, Jian Yu

Study of Performance of Supersonic Axisymmetric Mixed-Compression Multi-Inlets Under Single Subcritical
Condition ............................................................................................................................................................ 244
   Linjing Ma, Danjie Zhou, Haining Dong, Yuanjing Zhang, Mingkun Wang

Experimental Shape Reconstruction of a Morphing Wing Trailing Edge in Simulated Operative Conditions
...................................................................................................................................................................... 249
   Maria Chiara Noviello, Rosario Pecora, Francesco Amoroso, Francesco Rea, Maurizio Arena, Ignazio
   Dimino

Characterization of the Burning Velocity of Hydrogen/Methane Blends in a Constant Volume Combustion
Bomb ................................................................................................................................................................... 257
   M. Reyes, F.V. Tinaut
Investigation of Parallel Axis Gear Test Rigs and Selection Criteria to Design

Omer Uctu, Ibrahim Sevim

Geometric Transmission Error Model Analysis of High Precision F2C-T Drive

Xuan Liang, Guan Changsong, Guan Tianmin, Lei Lei

An Isogeometric Boundary Element Reanalysis Framework Based on Proper Generalized Decomposition

Shengze Li, Zeping Wu, Donghui Wang, Weihua Zhang, Jon Trevelyan

Numerical Simulation of Heat Transfer by Forced Convection on Mars Rover

Xiaohong Chen, Xueqin Bu, Guiping Lin, Shen Tian

Design and Experimental Study of Deployable Radiator Based on Loop Heat Pipes

Ting Ding, Chang Liu, Meng Li, Jianyin Miao, Yuandong Guo, Xueqin Bu

skCUBE Very-Low-Frequency Radio Waves Detector and Whistlers

Michaela Musilová, Miroslav Šmelko, Pavol Lipovský, Jakub Kapuš, Ondrej Závodský, Rudolf Slošiar

Influence of Deflector on Impact Properties of Multi-Nozzle LOX/Kerosene Engine Exhaust Plume

Honghua Cai, Wansheng Nie, Kangkang Guo, Siyin Zhou

Investigating the Effect of Turbine Inlet Temperature on the Exergetic Improvement Potential of a Small Turbojet Engine

Onder Turan, Arif Hepbasli, T. Hikmet Karakoc

Optimization Research of Stiffened Shells Based on Kriging Model and Explicit FEM

Wu Yongliang, Chen Jianping, Wei Wei, Wang Bin

A Lightweight Design Method for Rotary table Inspired by Structural Bionics

Nuo Bao, Jianming Ma, Xingqi Zhang, Zhenghu Zhong

Optimization and Mechanical Simulation of A Pursuit-Evader Scenario Using Genetic Algorithm and Stewart Platform

Mohamed Zakaria, T. M. Abdel-Moneim, Hesham Abdin, Alaa El-Din Hafez, Samy Darwish

Optimal Design and Modeling of 3D Variable-Density Lattice Structures

Xin Jin, Guoxi Li, Jingzhong Gong

Force-Thermal Coupling Analysis of the Docking Basket for Satellite Thermal Test

Jia-Yong Qin, Jing Wang, Chang Liu, Xing-Yu Fu

Investigation of Tribological and Mechanical Properties of PEEK-TiO2 Composites

Najim Abdul Ameer Saad, Hadeel Basim Mohammed Ridha
Effect of Injector on the Inlet Flow Performance of Multi-stage Compound Impeller Structural Centrifugal Pump ............................................................................................................................................................ 335

Jiangfeng Fu, Huacong Li, Xianwei Liu, Hongliang Xiao, Qiusheng Jia

Time-Frequency Domain Analysis Study on Dynamic Response Characteristics of Kerosene-Fueled Scramjet Combustor ............................................................................................................................................................ 340

Xiaobao Han, Huacong Li, Qiusheng Jia, Hongliang Xiao, Qiang Fu

Aeroelastic Tailoring of Thin-Walled, Closed-Section Wing Box with Bend-Twist Coupling .................................................................................................................................................. 345

Mihai Mihaila-Andres, Paul-Virgil Rosu, Ciprian-Marius Larco, Radu-Calin Pahonie

Experimental Research on Multi-Condition Dynamic Behavior of Second-throat Adjustment Sheet .................................................................................................................. 350

Shen Jiang, Huang Yuhui, Liu Zong Zheng, Qiu Rong Kai, Chen Jian Bing, Zhang Yi Fei

Thermal-mechanical Optimization of V-pattern Folded Core Sandwich Panels for Thermal Protection Systems .................................................................................................................................................. 354

Chen Zhou, Zhijin Wang, Paul Weaver

Modeling and Simulation of Staged Comubstion Cycle LPRE .................................................................................................................................................. 360

Mahyar Naderi, Liang Guozhu, Hasan Karimi

Effect of Parallel and Orthogonal Sinusoidal Walls on Mixed Convection inside Square Enclosure Containing Rotating Cylinder .................................................................................................................................................. 365

Hussein Mahmood Jassim, Farooq Hassan Ali, Qusai Adnan Mahdi, Nizar Jawad Hadi

Image Compression and Reconstruction of Transmission Line Monitoring Images Using Compressed Sensing .................................................................................................................................................. 371

Liquan Zhao, Yulong Liu, Lin Wang

A Study on Dynamic Characteristics of the Second Throat Centrebody of Transonic Wind Tunnel .................................................................................................................................................. 376

Shen Jiang, Qiu Rong Kai, Ma YueYin, Bao Lu Qiang, Wang Xiao Lei, Liu Bing Bin

Effect of Pin Tool Profile on Mechanical and Metallurgical Properties in Friction Stir Spot Welding of Pure Copper .................................................................................................................................................. 381

Ahmed Mahgoub, Neçar Merah, Abdelaziz Bazoune, Fadi Al-Badour

Aeronautics, UAVs and Flight

Design of a Fully Actuated Passively Tilted Multirotor UAV with Decoupling Control System .................................................................................................................................................. 385

Denis Kotarski, Petar Piljek, Hrvoje Brezak, Josip Kasać

Evaluation of Critical Parameters in the Design of a Trainer Aircraft Landing Gear .................................................................................................................................................. 391

Burhan Cetinkaya, Ibrahim Ozkol

A Study on Transient Fuel Temperatures in an Aircraft .................................................................................................................................................. 395

Nak-Gon Baek, Cheul-woo Baek
3D Statistical Tolerance Analysis Technique and the Application in Piston Aeroengine Assembly .......... 400

Heping Peng, Bin Wang

Lift Estimation of Half-Rotating Wing in Forward Flight .................................................................................. 405

Han Qiu, Yinpeng Dong, Qian Li, Congmin Li, Xiaoyi Wang, Zhizhen Qiu

Coaxial Helicopter Optimum Dynamics Design Based on Multi-objective Bat Algorithm and Experimental Validation ........................................................................................................... 411

Liang Li, Ming Chen, Fei Cao, Yimin Ma

Preliminary Design of an Actuation System for a Morphing Winglet ........................................................... 416

Ignazio Dimino, Gianluca Amendola, Barbara Di Giampaolo, Giuseppe Iannaccone, Angelo Lerro

Calculation of NO\textsubscript{x} Emissions of Short and Medium-haul Domestic Flights with Consideration of the Ambient Effect ......................................................................................................................... 423

Enis T. Turgut

Using Artificial Intelligence Based Expert System for Selection of Design Subcontractors: A Case Study in Aerospace Industry ............................................................................................................................................. 433

V. Ö. Ünal, A. Berkol, E. O. Tartan

On-Board Entry Guidance Satisfying Waypoint and No-Fly Zone Constraints ................................................. 438

Tao Wang, Hongbo Zhang, Wei Zheng, Guojian Tang

Numerical Experiment of Flow Characteristics of Tandem Arrangement Two Symmetrical Airfoils ............. 447

Yoshifumi Yokoi

Comparative Investigation of Short-Term Wind Speed Forecasting Models for Airborne Wind Turbines .. 451

Natapol Korprasertsak, Thananchai Leephakpreeda

Integrated Guidance and Autopilot for Hypersonic Vehicles in Dive Phase Using Back-stepping L\textsubscript{1} Adaptive Control .................................................................................................................................................... 455

Liang Wang, Fan Hu, Weihua Zhang, Donghui Wang

Influence of Surface Temperature on Aerodynamics and Aerothermodynamics of an Inflatable Decelerator .................................................................................................................................................. 463

Jinghui Guo, Guiping Lin, Xueqin Bu, Shiming Fu, Yanmeng Chao

Study of a High-Order Flux Reconstruction Formula with Different Low- Dissipation Euler Fluxes at Low Mach Flow ................................................................................................................................................. 472

Boxi Lin, Chao Yan, Shusheng Chen
Structural Wing Sizing and Planform Shape Optimization Using Multidisciplinary CAD-CAE Integration Process.................................................................................................................................................................................. 478

Abdelkader Benaouali, Stanislaw Kachel

Aerodynamic Actuation Characteristic Research of Array Plasma Synthetic Jet Actuator .............................................. 484

Zheng Li, Zhiwei Shi, Hai Du, Zhikun Sun, Guangyin Li

Longitudinal Aerodynamic Characteristics Analysis of a Joined Wing Unmanned Aerial Vehicle in High Reynolds Number......................................................................................................................................... 489

Cai Yuhong, Hong Guanxin, Liu Gang

Virtual Flight Simulation of the Basic Finner Projectile Based on Fuzz Control .......................................................... 494

Sheng Wang, Chao Yan, Wen Wang

Flapwise Vibration Control of a Rotating Blade ........................................................................................... 498

Mohammad Azadi, Behzad Hasanshahi

An Automatic Fault Diagnosis Method for Aerospace Rolling Bearings Based on Ensemble Empirical Mode Decomposition.................................................................................................................................................................................. 502

Hong Wang, Hongxing Liu, Tao Qing, Wenyang Liu, Tian He

Computational Assessment of the Effects of Boundary Layer Ingestion in Subsonic Flow ............................................ 507

Yan Wanfang, Jiang Kun, Zhang Jiang

Studies in Telescopic Span Morphing of HALE UAV ........................................................................................... 512

Tanvi Prakash, Rajkumar S. Pant

Credit Taken for Simulation System Used in Aircraft Type Certification .................................................................................. 517

Liu Xun, Jie Yuwen, Zhang Tong, Zhu Liang

An Improved Low-Dissipation AUSMPW+ Scheme for Low MACH Number ................................................................. 522

Shusheng Chen, Chao Yan, Boxi Lin, Erlong Li

A Generalized Method for Sub-idle Modeling of Aircraft Engines .................................................................................. 527

Zhongzhi Hu, Bo Jiang, Jiqiang Wang, Xiaolong He

Design and Simulation of Adaptive Tracking Controller of Aeroengine ........................................................................... 532

Jiangfeng Fu, Huacong Li, Xu Zhang, Hongliang Xiao, Qiusheng Jia

Multivariable Robust Gain Scheduled LPV Control Synthesis of Turbofan Engine ........................................................... 537

Qiusheng Jia, Xinxing Shi, Huacong Li, Xiaobao Han, Hongliang Xiao

A Compound Helicopter Flight Power Calculation Method with Power Loss Model of Transmission System .................................................................................................................................................................................. 542

Fei Cao, Ming Chen, Liang Li
Dynamic and Stability Analysis of a Flexible Air Defense Missile During the Launching Process .......... 547
   Du Zhenyu, Wang Xuezhi

Optimization of Connection Analysis in Aircraft Structures .............................................................. 552
   Fatma Nur Evren, Ibrahim Ozkol

Low Speed and High Altitude Flight—Unmanned flight at low speed in altitudes above 50,000ft .......... 556
   McAndrew I. R., Navarro E., Godsey O. Brig.

General, Electrical and Space

Adhesion and Water Lubrication of Silastic Micro-fiber Arrays with Monolayer Surface Modification .... 566
   Yan Ding, Dongjie Guo, Yunxia Xu, Zhanshi Jiao, Zhendong Dai

Temporal Constraint Modeling and Simulation of Agile Satellite .......................................................... 571
   Li Zhiliang, Li Xiaojiang

Unsteady Numerical Simulation of Missile Trajectories with Attitude Control Law .............................. 576
   Wei Yang, Xiang Zhang, Haibo He

Feasibility of Biodiesel Production in a Continuous Flow Microwave Reactor with Static Mixing .......... 581
   L. R. A. Soares, A. S. Franca, L. S. Oliveira

Rotational Instability of Polar Orthotropic Nonuniform Disks ............................................................ 586
   Sefa Yildirim, Naki Tutuncu

Characterization of Cuttlebone for Adaptive Infills ............................................................................... 591

Integration of Space and Ground Collaboration Based on Near Space Platform .................................... 596
   Weiyi Chen, Pingke Deng, Xiaoguang Zhang, Haitao Wu

Dynamics Modeling and Simulation of Space Electromagnetic Docking for Cubesat ............................ 603
   Keke Shi, Zhaowei Sun, Chuang Liu, Dong Ye

Research on General Unified Normalization Computing for the Gravitational Potential Tensor of Arbitrary Orders ........................................................................................................................................ 609
   Chao Han, Yu Wang, Xiaqing Gao, Changhong Dong

Underactuated Spacecraft Chaotic Attitude Control Based on Exponential Reaching Law ................. 615
   Zhaowei Sun, Chuang Liu, Keke Shi, Jianqiao Zhang

   Xuefeng Wang, Shijie Zhang, Shiqiang Wang
Research on Kinematic Characteristic of a New Flexible Space Manipulator Based on the Bionics ........ 626
Zhenghong Dong, Xin Ye, Jiacai Hong, Fan Yang

An Numerical Investigation on the Effect of the Combination of Cold Expansion and Interference Fitting on Fatigue Life Improvement of a 7075-T6 Aluminum Alloy Single Plate ......................................................... 632
Yongjie Huang, Zhidong Guan, Zengshan Li, Faqi Liu, Yamei He, Hu Dan

Analysis on Time of Arrival Precision in X-ray Pulsar-based Navigation ........................................ 639
Dapeng Zhang, Wei Zheng, Yidi Wang

Experimental Study on the Impact Response of Different Structures Water Entry .................................. 644
Yueqing Zhang, Fei Xu, Weijun Cai, Jianchen Li

Extended Differential Geometric Guidance Law with Extended State Observer ................................ 648
Jingshuai Huang, Hongbo Zhang, Guojian Tang, Weimin Bao

Design and Experiment Research of Pressure Control Cavity on Electronic Oxygen Regulator .......... 656
Dongsheng Jiang, Haichuan Jin, Bing Sun, Guiping Lin, Xueqin Bu, Hongtao Zhao

Multiple-field Systems Dynamic Modeling, Part I—Physical decomposition of multi-physical systems, a bond graph approach ................................................................. 661
Amir Zanj, Fangpo He

Study of Evaluation of the Influence of Small Asymmetries on Deviations of a Longitudinal Axis of a Space Landing Vehicle Equipment from a Speed Vector under the Conditions of a Resonant Movement Regime .................................................................................................................. 667
Vsevolod V. Koryanov, Victor P. Kazakovtsev

Atmospheric Conditions Evaluation for Lucky Imaging at Xinglong Observatory ............................... 671
E Xiang, Kefeng Xu, Yuli Xia, Huijuan Wang, Xianqun Zeng, Yongna Mao

Autonomous Inspection of the International Space Station ..................................................................... 676
Espen Oland

Multi-step Constant Current Fast Charging Topology and Principle Simulation for LEO Satellite .... 681
Lin Wenli, Sun Haitao, Liu Xinjun, Zhao Changjiang, Fu Linchun

Research on Robust Ascent Guidance of Reusable Launch Vehicle .................................................. 686
Jinhae Zhang, Jianli Wei, Yunfeng Yu, Yuemin Cao

Qualitative Parameters of Complex Part Produced by Additive Approach ......................................... 691
Katarina Monkova, Peter Monka

Emerging Slovak Space Technologies and Satellites ........................................................................... 695
Michaela Musílová, Jakub Kapuš, Robert Laszlo, Norbert Werner
Multiple-Field Systems Dynamic Modeling, Part II—Solid field physical decomposition ................................. 699

Amir Zanj, Fangpo He

Design of Measurement and Control System for the Efficiency test of Spacecraft Harmonic Drive Mechanism .................................................................................................................................................. 704

Sun Yu, Gu Zhifei, Liu Gaotong, Li Qiang

Research on a Novel Adaptive Compensation Control Method .............................................................................. 709

Hongliang Xiao, Huacong Li, Xiaobao Han, Qiusheng Jia

An Nonlinear Feedback Control for Radial Constrained Force of Flying Boom After Contact with Receiver ...................................................................................................................................................................... 714

Huazi Cao, Lixin Wang, Ting Yue

Numerical Simulation of High Frequency Instability Induced by the Distribution of Gas-Liquid Scheme Injectors in an Experiment-Scale Kero/GOX Liquid Rocket Engine ............................................................................................................................................ 719

Kangkang Guo, Wansheng Nie, Yu Liu, Honghua Cai

Research on ZUPT Technology for Pedestrian Navigation ...................................................................................... 725

Yongwei Li, Yuwen Wang, Hanjing Li, Qiang Shu, Yingzhu Chen, Wei Yang, Ying Liu, Manchuan Zhao

Terminal Efficiency of Fragment Air-to-Air Missile Using Monte Carlo Method .................................................. 730

Wang Zheng, Li Feiguo

Parameter Determination of an Ion Current Detection System—Effects of bias voltage and electrode location on ion current.................................................................................................................................................................. 736

Hanqing Xu, Weijun Fan, Qiang Shi, Wenlong Tan, Rongchun Zhang

Multiple-field Systems Dynamic Modeling, Part III: Fluid field physical decomposition ................................. 743

Amir Zanj, Fangpo He

Global Analysis of Differences between Chinese and European Airworthiness Regulation ................................ 748

Wang Jingyi, Liu Gang, Hong Guanxin

An Experimental Study of a Piezoelectrically Actuated Touch Screen .............................................................................. 753

Gözde Sari, M. Bahattin Akgül, Barbaros Kirişken, Ahmet Fatih Ak, Ahmet Alper Akış

Bang-off-Bang Image Based Homing and Attitude Control of a Guided Bomb .................................................. 759

Sergio Gómez, Carlos F. Rodríguez

Space Debris Removal Using an Automated Capturing and Self Stabilizing System, C.L.E.O. .................. 765

Tanusha Goswami, Srinivas Ramesh Iyer, Nitesh Kumar Singh, Kumud Darshan Yadav, Spoorthi Shekar, Balbir Singh

Multiple-field Systems Dynamic Modeling, Part IV—Fluid-Structure-Interaction Physical Coupling ........ 770

Amir Zanj, Fangpo He
Numerical Analysis of Vibrating Touch Screen Actuated by Piezo Elements ................................................................. 775

Ahmet Fatih Ak, Gözde Sari, M. Bahattin Akgül, Barbaros Kirişken, Ahmet Alper Akış

A Control System Architecture for Control of Non-Affine in Control, Open-Loop Unstable Underactuated Systems .................................................................................................................................................. 780

Alp Marangoz, Ali Türker Kutay

Joint Replenishment Problem of Military Aircraft Consumptive Items Under Resource Constraint ................. 786

Li Jiying, Ji Zihong

Design, Manufacture and Test of a Camber Morphing wing Using MFC Actuated Smart Rib .......................... 791

Jesee Kimaru, Abdessalem Bouferrouk

A Hierarchical and Priority-Based Strategy for Trajectory Tracking in UAV Formation Flight ................. 797

Hassan Haghighi, Hossein Heidari, Seyed Hossein Sadati, Jalal Karimi

Effect of Pre-Twist on the Nonlinear Vibration of the Blades Considering the Bending-Bending-Torsion Coupling ......................................................................................................................................................... 801

Hassan Fazayeli, Mahsa Kharazi

Heat Transfer Characteristics of an Orthogonal Jet Impinging on Roughened Flat Plate ......................... 806

Abdulrahman H. Alenezi, Abdulrahman S. Almutairi, Joao Amaral-Teixeiria, Hamad H. Alhajeri, Abdulmajid Addali

Effect of the B4C Reinforcement Ratio on Surface Roughness of Al6061 Based Metal Matrix Composite in Wire-EDM Machining ................................................................................................................................................. 812

Şener Karabulut, Halil Karakoç, Ramazan Çitak

Optimization of Composite Drive Shafts against Whirling Instability .......................................................... 816

M. F. Nasr, K. Y. Maalawi, M. A. Badr

Fabrication of AA6061/B4C Composites and Investigation of Ballistic Performances ....................... 822

Halil Karakoç, Henifi Çinici, Şener Karabulut, Ramazan Çitak

Author Index