

# International Journal of Materials, Mechanics and Manufacturing

## CONTENTS

---

---

### Volume 5, Number 2, May 2017

#### • Materials Engineering and Applications

- Feasibility of Applying Artifact-Metrics to Fine Wooden Lacquerware.....72  
*Masaki Fujikawa and Shingo Fuchi*

- Cutting Performance of Electroplated Diamond Drill with V-Shaped Groove and through Coolant Hole in Drilling Cemented Carbide.....79  
*Tadahiro Wada*

- Effect of Heat Treatments for Electroless Deposited Ni-B and Ni-W-B Coatings on 7075 Al Alloy.....83  
*Rasid Ahmed Yildiz, Kenan Genel, and Turgut Gulmez*

- Prediction of Nanofluid Forced and Mixed Convection Heat Transfer through an Annular Pipe.....87  
*F. Benkhedda, T. Boufendi, and S. Touahri*

- Capacitive Mode Methanol Sensing by ZnO Nanorods Based Devices.....92  
*N. Banerjee, K. Dutta, H. Misra and P. Bhattacharyya*

#### • Mechanical Control Engineering

- Tolerance Design of Robot Parameters Using Generalized Reduced Gradient Algorithm.....96  
*Trang Thanh Trung, Li Wei Guang, and Pham Thanh Long*

- Reliability Sensitivity Analysis of Vehicle Components and Architecture Optimization.....106  
*Zhe Liu, Fenghe Tao, and Changzhi Jia*

- Adaptive Backstepping Control for a 2-DOF Robot Manipulator: A State Augmentation Approach.....113  
*Nazila Nikdel and Mohammad Ali Badamchizadeh*

- An Ambulatory Assistant Wheelchair for Individuals with Lower Limb Weakness.....119  
*K. S. Sim, C. Y. Yeo, C. P. Tso, Habib A. Bhutto, T. Rakogwa, and C. S. Ee*

- Modeling Creep Relaxation of Polytetrafluoroethylene Gaskets for Finite Element Analysis.....123  
*Madhu Bharadwaj, Santiago Claramunt, and Sowmianarayanan Srinivasan*

- The Design of Pole Placement With Integral Controllers for Gryphon Robot Using Three Evolutionary Algorithms.....127  
*Somayyeh Nalan-Ahmadabad and Sehraneh Ghaemi*

- Evaluation of the Heat Recovery Potential by Using an Exergy Analysis Approach to Improve Energy Efficiency of Industrial Refrigeration Systems.....132  
*Kamran Taheri and Rainer Gadow*

#### • Mechatronics Engineering

- Thermal Study for Power Upgrading of 400 MW Generator Using Numerical Simulation.....137

*Hilman Syaeful Alam, Imam Djunaedi, and Demi Soetraprawata*

Numerical Investigation and Fatigue Life Estimation of Conventional and Modified Piston of Diesel Engine	142
.....	.....
<i>Hiregoudar Yerrennagoudaru and Manjunatha K.</i>	