

Electrical and Electronic Engineering

Multidisciplinary Engineering

Mechanical Engineering

# Journal of Mechatronics and Artificial Intelligence in Engineering



**Editor in Chief**

Sezgin Ersoy Marmara University, (Turkey) sersoy@marmara.edu.tr

**Editorial Board**

Kemal Adem Aksaray University, (Turkey) kemaladem@aksaray.edu.tr  
Majida Ahmed University of Technology, (Iraq) 50234@uotechnology.edu.iq  
Mehmet Akar Tokat Gaziosmanpaşa University, (Turkey) mehmet.akar@gop.edu.tr  
Talha Boz Marmara University, (Turkey) talha.boz@marmara.edu.tr  
Rafał Burdzik Silesian University of Technology, (Poland) rafal.burdzik@polsl.pl  
Ali El-Hafidi Université de Bourgogne, (France) ali.el-hafidi\_isat@u-bourgogne.fr  
H. Ali Ertaş Sivas Cumhuriyet University, (Turkey) ertas@cumhuriyet.edu.tr  
Akin Emreçan Gök İstanbul University, (Turkey) agok@ogr.iu.edu.tr  
Jagannath Jadhav KLE College of Engineering and Technology, (India) jagannathjadhav123@gmail.com  
Durmuş Karayel Sakarya University of Applied Science, (Turkey) dkarayel@subu.edu.tr  
Cemil Közkurt Bandırma University, (Turkey) ckozokurt@bandirma.edu.tr  
Sathish Kumar M. Kumarasamy College of Engineering, (India) ssk@jit.ac.in  
Hilmi Kuşçu Trakya University, (Turkey) hilmi@trakya.edu.tr  
Qing Li Anhui Agricultural University, (China) qingli@ahau.edu.cn  
Pooyan Makvandi National Research Council of Italy, (Italy) pooyan.makvandi@ipcbr.cnr.it  
Ehsan Nazarzadeh Zare Damghan University, (Iran) ehsan.nazarzadehzare@gmail.com  
Grigory Panovko Mechanical Engineering Research Institute of the Russian Academy of Sciences, (Russia) gpanovko@yandex.ru  
Aydin Shishegaran Bauhaus University Weimar, (Iran) aydinshishegaranam@gmail.com  
Mücahit Soyaslan Sakarya University of Applied Science, (Turkey) msoyaslan@subu.edu.tr  
Ersin Toptaş Marmara University, (Turkey) etoptas@marmara.edu.tr  
Conka Yıldız Tuba European XFEL GmbH, (Germany) tuba.conka@xfel.eu  
Tayyab Waqar Marmara University, (Turkey) tayyabwaqar@live.com  
Oğuz Yakut Fırat University, (Turkey) oyakut@firat.edu.tr  
Işıl Yazar Eskişehir Osmangazi University, (Turkey) iyazar@ogu.edu.tr  
Şahin Yıldırım Erciyes University, (Turkey) sahiny@erciyes.edu.tr

# JMAI Journal of Mechatronics and Artificial Intelligence in Engineering

## Aims and Scope

JMAI publishes original theoretical and/or experimental work and tutorial expositions of permanent reference value. The aim of the Journal is to present the state of the art, recent advances and practical applications of Mechatronics. Its scope encompasses all practical aspects of the theory and methods of mechatronics.

The list of principal topics:

- Automotive
- MEMS/NEMS
- Electronics
- Image processing
- Intelligent artificial
- Information theory
- Electrical systems
- Power electronics
- Control theory
- Embedded systems
- Robotics
- Motion control
- Stochastic modeling
- System design
- Computer engineering
- Optical engineering
- Design optimization
- Material science
- Metamaterials
- Multidisciplinary engineering
- Design and manufacture of industrial products and processes
- 2D materials heat and mass transfer, kinematics
- Dynamics
- Thermo-dynamics
- Energy and applications, renewable energy
- Environmental impacts
- Structural analysis
- Fluid dynamics

**All published papers are peer reviewed and crosschecked by plagiarism detection tools.**

More information is available online <https://www.extrica.com/journal/jmai>

## The journal material is referred:

**EBSCO:** <https://www.ebsco.com>

**Scilit:** <https://www.scilit.net>

**Dimensions:** <https://www.dimensions.ai>

**Google Scholar:** <https://scholar.google.com>

**JGate:** <https://jgateplus.com>

**Scientific Indexing Services:** <https://www.sindexs.org>

**ASOS Indeks:** <https://asosindex.com.tr>

**CORE:** <https://core.ac.uk>

**Ulrich's Periodicals Directory:** <https://ulrichsweb.serialssolutions.com>

**CNKI Scholar:** <http://eng.scholar.cnki.net>

**cnPLINKer (CNPIEC):** <http://cnplinker.cnpeak.com>

**WanFang Data:** <https://www.wanfangdata.com.cn>

**TDNet:** <https://www.tdnet.io>

**CiteFactor:** <https://www.citefactor.org>

**ResearchBib:** <https://journalseeker.researchbib.com>

**Directory of Research Journals Indexing:** <http://olddrji.lbp.world>

**EuroPub:** <https://europub.co.uk>

**Advanced Sciences Index (ASI):** <https://www.journal-index.org>

**WorldCat Discovery Services:** <https://www.oclc.org/en/worldcat-discovery.html>

**MyScienceWork:** <https://www.mysciencework.com>

**Crossref:** <https://search.crossref.org>

Content is archived in **Martynas Mazvydas National Library of Lithuania**

**Internet:** <https://www.extrica.com>

**E-mail:** [publish@extrica.com](mailto:publish@extrica.com)

**Publisher:** Extrica

## Contents

<b>REVIEW OF SUPERCAPACITOR TECHNOLOGY AND APPLICATIONS</b>	<b>131</b>
SALIHA CANSU GORGULU, ISIL YAZAR, TAHIR HIKMET KARAKOC	
<b>REVIEW OF RESEARCH ON DISASTER MITIGATION EMERGENCY CONGREGATE SHELTER PLANNING FOR VULNERABLE GROUP</b>	<b>144</b>
LULU SUN, JIANYU CHU	
<b>CRITICAL BUCKLING LOAD ANALYSIS OF EULER-BERNOULLI BEAM ON TWO-PARAMETER FOUNDATIONS USING GALERKIN METHOD</b>	<b>158</b>
CHARLES CHINWUBA IKE	
<b>RESEARCH ON LIGHTWEIGHT DETECTION METHODS FOR THE GOLDEN SNUB-NOSED MONKEY BASED ON YOLOv5N</b>	<b>173</b>
HAO-RAN XU, LEI WANG, KUI XIAO, PENG-CHAO ZHANG, XING HE, YAN ZHOU	
<b>THERMAL AND FLOW OPTIMIZATION AND GENERATIVE DESIGN SIMULATIONS OF THE CURING PRESS MANIFOLD USED IN TIRE PRODUCTION</b>	<b>191</b>
AHMET ÇAĞRI ÇAĞLIYAN, FIKRET AKYÜZ, AHMET FEYZIOĞLU, SEZGIN ERSOY	
<b>EXPERIMENTAL OPTIMAL CONTROL OF SERVO-PNEUMATIC WITH SLIDING MODE AND GA-FUZZY-PID-PWM</b>	<b>199</b>
M. SIAVASHI, M. HASANLU	



## SHORT DESCRIPTION ABOUT THIS CATEGORY

Expositions of permanent reference value in the general area of mechatronics, including different applications in mechanical and electrical engineering based on artificial intelligence. The aim of the Journal is to present the state of the art, recent advances and practical applications of Mechatronics.

