



**JOURNAL OF
MECHATRONICS AND
ARTIFICIAL INTELLIGENCE IN ENGINEERING**

JUNE 2022 | VOLUME 3 | ISSUE 1 | ISSN ONLINE 2669-1116

Editor in Chief

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

Assistant Editor

Cemil Közkurt Bandırma University, (Turkey) ckozkurt@bandirma.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

Mehmet Fatih Çelebi Marmara University, (Turkey) fatih.celebi@marmara.edu.tr

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

İshak Ertuğrul Muş Alparslan University, (Turkey) i.ertugrul@alparslan.edu.tr

Ahmet Fenercioğlu Tokat Gaziosmanpaşa University, (Turkey) ahmet.fenercioglu@gop.edu.tr

Akın 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

Sathish Kumar M. Kumarasamy College of Engineering, (India) ssk@jit.ac.in

Hilmi Kuşçu Trakya University, (Turkey) hilmi@trakya.edu.tr

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

Aydın 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

Osman Ülker Muş Alparslan University, (Turkey) o.ulker@alparslan.edu.tr

Tayyab Waqar Marmara University, (Turkey) tayyabwaqar@live.com

Oğuz Yakut Fırat University, (Turkey) oyakut@firat.edu.tr

İşıl 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>

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>

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>

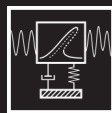
Internet: <https://www.extrica.com>

E-mail: publish@extrica.com

Publisher: JVE International Ltd., Geliu ratas 15A, LT-50282, Kaunas, Lithuania

Contents

CONTROLLING ISOLATION SYSTEM OF INITIAL COMBUSTION ENGINES MINGYAO WEN, VANLIEM NGUYEN	1
MOTION CHARACTERISTICS AND ENERGY EFFICIENCY OF POTENTIAL ENERGY RECYCLING SYSTEM OF TELESCOPIC HANDLER HUAIREN XU, ZHIQI LIU, YAO WANG, LEI GE	12
MAKING HUMANOID ROBOTS TEACHING ASSISTANTS BY USING NATURAL LANGUAGE PROCESSING (NLP) CLOUD-BASED SERVICES ANNA LEKOVA, PAULINA TSVETKOVA, TANIO TANEV, PETER MITROUCHEV, SNEZHANA KOSTOVA	30
PRODUCTIVITY FORECAST WITH DIGITAL GREENHOUSE AUTOMATION SYSTEM FOR SUSTAINABLE AGRICULTURE AKIN EMRECAN GÖK, MEHMET FATİH ÇELEBI, ALPEREN SAMET KOCA, MEHMET DOĞAN, SEZGIN ERSOY	40



JVE INTERNATIONAL