

❑ Scientific Coordinators

- **Prof. Dr. Eng. Inocențiu Maniu**
Robotics Society of Romania
- **Prof. Dr. Eng. Ion Vela**
Technical Sciences Academy of Romania,
Robotics Society of Romania

❑ Editorial Staff

- **Editor in Chief - Assoc. Prof. Dr. Eng. Calin-Octavian Miclosina**
Babes-Bolyai University, Faculty of Engineering from Resita, Romania
Robotics Society of Romania, Resita Branch
e-mail: calin.miclosina@ubbcluj.ro
- **Topic Editor - Robotics - Prof. Dr. Eng. mult. Dr. H.C. Marco Ceccarelli**
University of Rome Tor Vergata, LARM2: Laboratory of Robot Mechatronics,
Department of Industrial Engineering, Italy
e-mail: marco.ceccarelli@uniroma2.it
- **Topic Editor - Management - Lect. Dr. Gabriel Dinu**
Babes-Bolyai University, Faculty of Economics and Business
Administration, Romania
e-mail: gabriel.dinu@econ.ubbcluj.ro
- **Editor - Prof. Dr. Eng. Habil. Erwin-Christian Lovasz**
Politehnica University of Timisoara, Faculty of Mechanics, Romania
Robotics Society of Romania, Timisoara Branch
e-mail: erwin.lovasz@upt.ro
- **Editor - Lect. Dr. Eng. Vasile Cojocaru**
Babes-Bolyai University, Faculty of Engineering from Resita, Romania
Robotics Society of Romania, Resita Branch
e-mail: vasile.cojocaru@ubbcluj.ro
- **Editor - Lect. Dr. Eng. Daniel-Gheorghe Vela**
Babes-Bolyai University, Faculty of Engineering from Resita, Romania
Robotics Society of Romania, Resita Branch
e-mail: daniel.vela@ubbcluj.ro
- **Scientific Advisory Board:**
 - Solomia Andres, Babes-Bolyai University, Romania;
 - Paun Antonescu, Politehnica University of Bucharest, Romania;
 - Yvan Baudoin, Royal Military Academy – Polytechnics, Belgium;
 - Karsten Berns, University of Kaiserslautern, Germany;
 - Branislav Borovac, University of Novi Sad, Serbia;
 - Imad Chalfoun, Higher Institute for Applied Sciences and Technology, Syria;
 - Ioan Doroftei, “Gheorghe Asachi” Technical University of Iași, Romania;
 - Florea Dudita, Transilvania University of Brasov, Romania;
 - Aleš Hace, University of Maribor, Slovenia;
 - Mircea Ivanescu, University of Craiova, Romania;
 - Nicolae Joni, Robotics Society of Romania, Romania;
 - Milos Jovanovic, “Mihailo Pupin” Institute, Serbia;
 - Bojan Knezevic, University of Banja Luka, Bosnia and Herzegovina;
 - Minh Tam Nguyen, Ho Chi Minh City University of Technology and Education, Vietnam;
 - Thien Van Nguyen, Academy of Science and Technology, Vietnam;
 - Mircea Nitulescu, University of Craiova, Romania;
 - Takaaki Oiwa, Shizuoka University, Japan;
 - Doina Pisla, Technical University of Cluj-Napoca, Romania;
 - Svilen Rachev, Technical University Grabovo, Bulgaria;
 - Ionel Starețu, Transilvania University of Brasov, Romania;
 - Mihai Olimpiu Tătar, Technical University of Cluj-Napoca, Romania;
 - Gelu-Ovidiu Tirian, Politehnica University of Timisoara, Romania;
 - Thanh-Phong Tran, University of Angers, France;
 - Ioan Visa, Transilvania University of Brasov, Romania.

❑ Address of the Redaction

Babes-Bolyai University, Reșița University Center
Faculty of Engineering, Department of Engineering Sciences
Traian Vuia Square, No. 1-4, 320085 Reșița, Romania
Phone: +40 374 810719
e-mail: calin.miclosina@ubbcluj.ro

Politehnica University of Timisoara
Faculty of Mechanics, Mechatronics Department
Blvd. Mihai Viteazu 1, 300222 Timisoara, Romania
Phone : +40 256 403554; Fax: +40 256 403554
e-mail: erwin.lovasz@upt.ro

❑ Subscriptions

Subscriptions are to be made at the Redaction.

Authors bear full responsibility for the papers content.
Copyright © 2024, Editura Eftimie Murgu
Editorial Counsellor Gheorghe Jurma

ROBOTICA & MANAGEMENT

Vol. 29, No. 2, December 2024

Indexed by: DOAJ, EBSCO Host, Index Copernicus

1 - Content

2 - Editorial

2 – MTM & ROBOTICS 2024 - The Joint International Conference of the XIV International Conference on Mechanisms and Mechanical Transmissions (MTM) and the XXVI International Conference on Robotics (ROBOTICS)

Doroftei I.

3 - Papers

3 - A Survey of Identification for Experimental DC Motor by Matlab Toolbox

*Huynh P.H., Mai H.T., Phan P.V., Nguyen T.D.,
Do D.T., Tran T.Y.N., Nguyen T.T., Nguyen V.D.H.*

10 - A Survey of LQG over MPC and LQR Control for Rotary Inverted Pendulum

*Huynh P.H., Pham C.D., Vu N.B., Duong T.K.,
Vo D.H.K., Le T.G., Nguyen D.K., Le T.T.H.*

16 - A Method of LQR Using Velocity Control for Unicycle Robot

*Nguyen T.A.V., Vu D.H., Nguyen H.G.H., Pham N.C.N.,
Cao K.H., Vo T.A., Le H.L., Nguyen M.T.*

26 - Risk Management in the Process of Library Technologization through Robotics

Rolea A.M.E., Nechita R.M., Boncătă A.E., Cristoiu C.

32 - PSO-Optimized LQR and Energy-Based Swing-Up Control for Reaction Wheel Inverted Pendulum

Tran D.D., Nguyen B.H., Mai B.Q., Nguyen D.A.Q.

43 - A Comparison of Two Swing-Up Algorithms: Energy-Based and Advanced Sliding Mode Methods

*Tran M.D., Nguyen N.T., Le T.A., Huynh N.H.,
Ninh Q.T., Phi H.A.V., Bui K.H., Tran H.C.*

49 - Particle Swarm Optimization of Backstepping Control Parameters for Ball and Beam

*Tran V.H.L., Nguyen D.A.Q., Nguyen H.D., Dang A.K.,
Pham T.H., Tran T.H.P., Nguyen G.B., Cu M.P.*

57 - Variation of the Friction Coefficient during the Operation of a Radial Sliding Bearing Depending on Lubricant Temperature

Vela D.-G., Vela I., Miclosina C.-O.

61 - Change Management in Trade SMEs. Case Study – Retail versus Traditional Trade

Ciurea J.B., Manciu V.C.

69 - The Psychology of Sustainable Behavior and the Management of Changes Required for a Healthy Environment

Dinu G., Dinu L.

73 - Innovative Management in Circular Economy. Case Study: Implementation of the SGR by Returo Project in Caraș-Severin County

Manciu V.C., Ciurea J.B.

81 - The Management of University-Business Collaboration: the Role of Personal Relationships

Minică M., Trișcă G.

87 - Challenges and Limitations of AI Tools for Personalized Education

Pau C., Jurchescu A.

92 - The Role of Public Authorities in Local Development Management

Tănase F.-D., Tănase A.-C.

Robotica & Management journal, Vol. 29, 2024, was edited with the financial support of SC ROBCON™ SRL