



**IMANEE 2023**  
TOGETHER SINCE 1996

# PROGRAM

**27<sup>th</sup> Edition of INNOVATIVE MANUFACTURING  
ENGINEERING & ENERGY CONFERENCE**  
**October 12-14, 2023, Chisinau, Republic of Moldova**

## Organizers:



## Our sponsors:



## PREFACE

*„The 27th Edition of the conference IManEE-2023 will take place at Technical University of Moldova dedicated in general for Industry 4.0 demands in mechanical, industrial engineering and in particular for mechanical transmissions in particular with the main goal focused at bringing together scientists and engineers dealing with fundamental and applied research for reporting on the latest theoretical developments and applications. For our 27th edition of the international conference we would like to express our gratitude to organizers of the previous editions and all the participants and scientists involved in the reviewing process. We will do our best to continue their hard work and preserve the tradition of building relationships among teachers, scientists, researchers, universities, institutions and real sector of the economy.*

*The conference covers a wide range of subjects of primary importance for research and development such as Advanced Manufacturing Process, Surface Engineering, Advanced Materials, Development of Mechanical Transmissions, CAD/CAE/CAM/CAPP Systems for Design, Manufacturing and Assembling, Automation and Robotics and Green Manufacturing – Renewable Energy”.*

**Academician BOSTAN Ion** – Conference General Chair

*The Organizing Committee of the 27<sup>th</sup> Edition of IManEE Conference highly appreciate technical and financial support provided by following institutions and enterprises: **Technical University of Moldova, INTERNATIONAL SERVICES DATA PROCESSING, ICS ENGINEERING FORTAN SRL, ICS AGA TECH SRL, AMIC SA, GRIP-ENGINEERING SRL, SRL AVANTCAD and Hotel Institutul Muncii.***

The Conference will take place at the Technical University of Moldova, Faculty Mechanical Engineering and Transports (Conference Opening and Plenary Session) located at 9/8 Studenților street, Chișinău, Rep. Moldova and Hotel Institutul Muncii (Conference ONSITE Sections) located at 10 Zimbrului street, Chișinău, Rep. Moldova.

Participants registration will take place within Hotel Institutul Muncii, 10 Zimbrului street, Chisinau, Moldova on October 12, 2023 from 18:00 to 21:00.

The conference will open at 09:00, October 13, 2023 within Technical University of Moldova, Faculty Mechanical Engineering and Transports, Lecture room „Henri Coandă”, 9/8 Studenților street, Chișinău, Rep. Moldova.

Conference Sections will take place within Hotel Institutul Muncii, 10 Zimbrului street, Chisinau, Moldova:

- on October 13, 2023 from 14:00 to 17:00 – **ONLINE SECTIONS;**
- on October 14, 2023 from 09:00 to 12:00 – **ONSITE SECTIONS.**

The official language of the Conference is **English**.

***IManEE23 General Chair***

***Academician BOSTAN ION***

***IManEE23 Honorific Chair***

***Professor emeritus JINESCU Valeriu***

***IManEE23 Program Chair***

***Associate professor MALCOCI Iulian***  
***Associate professor BODNARIUC Ion***  
***Associate professor MAZURU Sergiu***

**IManEE23** – Organizing Committee: <https://imane.utm.md/organizers/>

**IManEE23** – Scientific Committee: <https://imane.utm.md/committees/>

Address: 168, Ștefan cel Mare av., MD-2004, Chișinău, Republic of Moldova

Conference Website: [www.imane.utm.md](http://www.imane.utm.md)

Conference E-mail: [imane@utm.md](mailto:imane@utm.md)

**IManEE23 – October 12-14, 2023**

## INSTRUCTIONS FOR AUTHORS

Onsite/Online Presentations:

1. Please make your presence at least 15 minutes before your session starts and be present during the entire session in which your presentation is scheduled. Time for plenary sessions is up to 120 minutes.

2. Time for Conference Sessions are 180 minutes. Number of papers in each session is up to 12 meaning that 15 minutes is allocated for each presentation (about 12 minutes for presentation and 3 minutes for discussions and questions).

3. All session rooms will be equipped with a data projector and a computer. You do not need to bring your own laptop to the lecture room.

4. Computers in conference rooms are equipped with Windows 7, Microsoft Office 2010 package. Apple Mac computers will not be provided in any of the session rooms. If you are using Mac, please check compatibility with Microsoft Office 2010 package or use your own Mac computer if your presentation is created in Apple's "Keynote" presentation application. Videos handed in as an independent file must be coded under standard codec. Users are recommended to preview them in standard universal software, such as VLC Player or Quicktime.

## IMaNEE23 CONFERENCE SECTIONS

**S1** - *Advanced Manufacturing Process;*

**S2** - *Surface Engineering;*

**S3** - *Advanced Materials;*

**S4** - *Development of Mechanical Transmissions;*

**S5** - *CAD/CAE/CAM/CAPP Systems for Design Manufacturing and Assembling;*

**S6** - *Automation and Robotics;*

**S7** - *Green Manufacturing – Renewable Energy*

## CONFERENCE PROGRAM

### 12 October 2023

**18:00 – 21:00** Accommodation, Registration, Distribution of the Conference materials

**WELCOME RECEPTION** (only for guest from abroad – restaurant terrace Hotel Institutul Muncii)

### 13 October 2023

*Microsoft Teams access link: [Plenary session](#)*

<b>08:00 – 09:00</b>	<b>Registration</b>
<b>09:00 – 09:10</b>	<b>IManEE23 Conference Opening Inauguration of the Henri Coandă Lecture Hall Opening Speech – TUM Rector: BOSTAN Viorel</b>
	<b>Greetings and Welcome speeches:</b>
<b>09:10 – 09:40</b>	<b>Prime Minister of Republic Moldova RECEAN Dorin President of the Academy of Sciences of Moldova TIGHINEANU Ion President Advisor for Education and Research CHICU Valentina Extraordinary and Plenipotentiary Ambassador of Romania in the Republic of Moldova ȚURCANU Cristian-Leon Department for Relations with the Republic of Moldova – Romanian State Secretary DUPU Adrian Ministry of Education, Culture and Research of Republic Moldova PERCIUN Dan ASTR (Technical Sciences Academy of Romania) Vice President GOLOVANOV Nicolae</b>
<b>09:40 – 10:00</b>	<b>Inauguration of the Henri Coandă Lecture Hall Plenary report: <i>THE SECURITATE IN THE FOOTSTEPS OF ROMANIAN EXILE: HENRI COANDA IN THE SIGHTS OF THE COMMUNISTS</i> <b><i>SALCA Horia</i></b> - Research Fellow, INTI International University, Putra Nilai, Malaysia</b>

10:00 – 10:20	Coffee Break
10:20 – 10:40	<p><b>IManEE23 Plenary Session</b>  <b>Plenary report:</b> <i>A PARTICULAR OPERATION OF THE SYNCHRONOUS MACHINE AND ITS TECHNICAL IMPLICATIONS</i>  <u><b>CÂMPEANU Aurel</b></u> – Professor, University of Oradea, România</p>
10:40 – 11:00	<p><b>IManEE23 Plenary Session</b>  <b>Plenary report:</b> <i>PRECESSIONAL TRANSMISSIONS WITH MULTIPLE CONVEX-CONCAVE GEARS: STRUCTURAL SYNTHESIS, KINEMATICS AND CONTACT BEARING, GENERATION OF SURFACES</i>  <u><b>BOSTAN Ion</b></u> – Academician, Technical University of Moldova</p>
11:00 – 11:20	<p><b>IManEE23 Plenary Session</b>  <b>Plenary report:</b> <i>SOME ASPECTS REGARDING THE ETHICS OF CARE AND UNIVERSITY</i>  <u><b>MUNTEANU RADU</b></u> - Honoric President of the Technical University of Cluj-Napoca, România</p>
11:20 – 11:40	<p><b>IManEE23 Plenary Session</b>  <b>Plenary report:</b> <i>CONTRIBUTIONS TO THE DESIGN AND IMPLEMENTATION OF AN ADVANCED ELECTRONIC SYSTEM FOR CONTROLLING THE ELONGATION OF THE VERTEBRAL COLUMN</i>  <u><b>TÎTU Aurel-Mihail</b></u> – Professor, Lucian Blaga University of Sibiu, România</p>
11:40 – 12:00	<p><b>IManEE23 Plenary Session</b>  <b>Plenary report:</b> <i>NANOSATELLITE DEVELOPMENT, CHALLENGES AND EXPERIENCE WITHIN TECHNICAL UNIVERSITY of MOLDOVA</i>  <u><b>BOSTAN Viorel</b></u> –Prof. univ., Dr. hab., Technical University of Moldova</p>
12:00 – 12:30	<b>Departure to Hotel Institutul Muncii</b>
12:30 – 14:00	<b>CONFERENCE LUNCH - Hotel Restaurant „Curtea Casei”</b>
14:00 – 18:00	<p><b>VISIT Technical University facilities for ONSITE participants:</b></p> <ul style="list-style-type: none"> <li>- <b>Foucault Pendulum – Technical University Administrative Block</b></li> <li>- <b>TUM Planetarium - Technical University Park</b></li> <li>- <b>Night of European Researchers – RUBE GOLDBERG Competition 2023 – Technical University Park</b></li> </ul>
18:00 – 20:00	<b>CONFERENCE DINNER - Hotel Institutul Muncii Restaurant „Curtea Casei”</b>

**13 October 2023**

**1<sup>st</sup> ONLINE ROOM - Advanced Manufacturing Process**  
**14:00 – 17:00**

Microsoft Teams access link: [1st online room](#)

**Section Chair:** Professor TAMÁS BÁNYAI - University of Miskolc, Hungary

**Section Chair:** Student BODNARIUC VLAD, Eindhoven University of Technology, Netherlands

<p><b>1.</b> <b>14:00 – 14:15</b></p>	<p><b>ID-15:</b> Implementation project management of a robotic manufacturing cell using the critical path method                  Authors: <b><u>INDRE Claudiu-Ioan</u></b>, BLAGA Florin-Sandu, NEGRĂU Dan-Claudiu, HULE Voichița-Ionela, GROZA Mihai-Dan</p>
<p><b>2.</b> <b>14:15 – 14:30</b></p>	<p><b>ID-16:</b> Integrated lean manufacturing and its application at workstation level                  Authors: <b><u>FRUMUȘANU Gabriel</u></b>, EPUREANU Alexandru</p>
<p><b>3.</b> <b>14:30 – 14:45</b></p>	<p><b>ID-22:</b> Recent advances and future prospects in advanced manufacturing processes: review                  Authors: PĂDURARU Iulian, <b><u>PĂDURARU-GRAUR Iulia</u></b>, BĂLĂNICĂ-DRAGOMIR Carmelia Mariana</p>
<p><b>4.</b> <b>14:45 – 15:00</b></p>	<p><b>ID-25:</b> Optimization of ann used to predict the surface roughness in dry turning of uns A97075 aeronautical aluminum alloy                  Authors: <b><u>REPISO Ignacio</u></b>, MARTÍN-BEJAR Sergio, Javier TRUJILLO Francisco, SEVILLA Lorenzo</p>
<p><b>5.</b> <b>15:00 – 15:15</b></p>	<p><b>ID-38:</b> Influence of fused filament fabrication raster parameters over the top surface topography                  Authors: <b><u>ERMOLAI Vasile</u></b>, SOVER Alexandru</p>
<p><b>6.</b> <b>15:15 – 15:30</b></p>	<p><b>ID-50:</b> Determination of eigenfrequencies for some ultrasonic horns specific to hybrid electrochemical machining                  Authors: <b><u>ENCIU Cornel-Cristian</u></b>, GHICULESCU Liviu-Daniel</p>

<p>7. 15:30 – 15:45</p>	<p><b>ID-53:</b> An overview of existing statistic methods for selecting optimal process planning Authors: <b><u>AVRAMOVA Tanya</u></b>, VASILEVA Dimka, PENEVA Teodora</p>
<p>8. 15:45 – 16:00</p>	<p><b>ID-54:</b> Some aspects regarding the recycling of composite materials used in automotive Authors: <b><u>ILEA Sandu</u></b>, POP Petru-Adrian</p>
<p>9. 16:00 – 16:15</p>	<p><b>ID-55:</b> Contributions to increasing the quality of outer threads obtained through 3d printing Authors: <b><u>RIZEA Alin-Daniel</u></b>, ANGHEL Daniel-Constantin, BANICA Cristina-Florena</p>
<p>10. 16:15 – 16:30</p>	<p><b>ID-57:</b> Utilizing modern methods and technologies in concrete design products Authors: <b><u>TODOROVA Tsveta</u></b>, DOVRAMADJIEV Tihomir, MURZOVA Tsena, MURZOVA Mariana, DOBREVA Darina</p>
<p>11. 16:30 – 16:45</p>	<p><b>ID-59:</b> Simulation and practical investigations of inductively assisted machining using the example of turning operations Authors: <b><u>ARNOLD Frank</u></b>, MANUR KRISHNAMUTHY Niranjan, PRASSE Johannes, PENTER Lars, IHLENFELDT Steffen</p>
<p>12. 16:45 – 17:00</p>	<p><b>ID-66:</b> Digital twin in blending technologies: integration of technology and logistics using internet of things solutions Author: <b><u>BÁNYAI Ágota</u></b></p>
<p><b>13 October 2023</b> <b>2<sup>nd</sup> ONLINE ROOM - Advanced Materials &amp; Advanced Manufacturing Process</b> <b>14:00 – 17:00</b></p> <p>Microsoft Teams access link: <a href="#"><u>2nd online room</u></a></p> <p><b>Section Chair:</b> Professor, PhD Eng. GHICULESCU LIVIU-DANIEL, National University of Science and Technology POLITEHNICA Bucharest, România <b>Section Chair:</b> Associate professor, GUȚU MARIN, Technical University of Moldova</p>	
<p>1. 14:00 – 14:15</p>	<p><b>ID-04:</b> Surface quality assessment for end-milled AL7136 parts using PCA Authors: <b><u>POP Alina-Bianca</u></b>, ȚÎȚU Aurel-Mihail</p>

<p>2. 14:15 – 14:30</p>	<p><b>ID-30:</b> Conceptual design of multifunctional reconfigured architectures for electromagnetic nondestructive evaluation Authors: <b><u>IFTIMIE Nicoleta</u></b>, SAVIN Adriana, STEIGMANN Rozina, FABO Peter, FAKTOROVA Dagmar</p>
<p>3. 14:30 – 14:45</p>	<p><b>ID-31:</b> Research on evaluating mechanical performances of CFRP materials Authors: <b><u>MITITELU Ionuț</u></b>, IFTIMIE Nicoleta, SAVIN Adriana, DOBRESU Gabriel-Silviu, BARSANESCU Paul-Doru</p>
<p>4. 14:45 – 15:00</p>	<p><b>ID-69:</b> Characterisation of printing conditions of powder-reinforced resin by LCD technology Authors: <b><u>BOCA Marius-Andrei</u></b>, SOVER Alexandru, SLĂTINEANU Laurențiu, ERMOLAI Vasile</p>
<p>5. 15:00 – 15:15</p>	<p><b>ID-72:</b> The elaboration of a research and development process within the headquarters and implementation in the subsidiary Authors: <b><u>GHENA Marian-Florentin</u></b>, GHICULESCU Liviu-Daniel</p>
<p>6. 15:15 – 15:30</p>	<p><b>ID-73:</b> Study on the cutting forces during face milling of a hard steel Authors: <b><u>MALEA Claudiu-Ionuț</u></b>, NIȚU Eduard-Laurențiu, BĂDULESCU Claudiu, IORDACHE Daniela-Monica</p>
<p>7. 15:30 – 15:45</p>	<p><b>ID-76:</b> Device for milling circular arc tooth trace cylindrical gear Authors: GRĂMESCU Traian, SLĂTINEANU Laurențiu, <b><u>HRIȚUC Adelina</u></b></p>
<p>8. 15:45 – 16:00</p>	<p><b>ID-113:</b> The influence of 3d printing parameters and heat treatment on tribological behavior Authors: PORTOACĂ Alexandra-Ileana, RÎPEANU George-Răzvan, NAE Ion, <b><u>TĂNASE Maria</u></b></p>
<p>9. 16:00 – 16:15</p>	<p><b>ID-120:</b> Contributions regarding the solution of the automatic on-the-fly adjustment during the working process with chip probe over the values of the cutting regimes at CNC machining centers and flexible cells, based on the principles of fuzzy sets Authors: <b><u>MIZGAN Horea</u></b>, BLAGA Florin Sandu</p>
<p>10. 16:15 – 16:30</p>	<p><b>ID-121:</b> Tool wear prediction by deep learning from visibility graph representation of time series data Authors: <b><u>TÜRKER İlker</u></b>, TAN Serhat Orkun, KUTLUANA Gökhan</p>

<p>11. 16:30 – 16:45</p>	<p><b>ID-125:</b> Experimental study on multipass AWJ performance on Hardox 500 workpieces Authors: DEKSTER Lisa, KARKALOS Nikolaos, KUDELSKI Rafał, <b><u>KARMIRIS-OB RATANSKI Panagiotis</u></b></p>
<p>12. 16:45 – 17:00</p>	<p><b>ID-134:</b> Transport properties of cerium oxide doped in gadolinium used for electrical batteries manufacture Authors: <b><u>BĂILĂ Diana</u></b>, TONOIU Sergiu</p>
<p><b>13 October 2023</b> <b>3<sup>rd</sup> ONLINE ROOM - Surface Engineering &amp; Green Manufacturing – Renewable Energy</b> <b>14:00 – 17:00</b></p> <p>Microsoft Teams access link: <a href="#"><u>3rd online room</u></a></p> <p><b>Section Chair:</b> Professor, PhD Eng. OANCEA GHEORGHE, Transilvania University of Braşov, România <b>Section Chair:</b> Lecturer, PhD Eng. EFREMOV CRISTINA, Technical University of Moldova</p>	
<p>1. 14:00 – 14:15</p>	<p><b>ID-08:</b> Nanostructured layers deposition for self-cleaning glass Authors: ILIESCU Mihaela, BEŞLEAGĂ Cristina, NIŢU Cristina, TOMULESCU Andrei, PINTILIE Ioana, MELINTE Octavian, <b><u>ROŞU Maria-Magdalena</u></b></p>
<p>2. 14:15 – 14:30</p>	<p><b>ID-39:</b> Experimental analysis of the rheological properties of hydraulic oils Authors: <b><u>TELEASA Andreea-Mirela</u></b>, RADULESCU Alexandru Valentin</p>
<p>3. 14:30 – 14:45</p>	<p><b>ID-63:</b> Impact of the parameters of the rail damper upon the frequency response function of the rail Authors: <b><u>FOLOGEA Dorina</u></b>, MAZILU Traian, APOSTOL Ioana Izabela</p>
<p>4. 14:45 – 15:00</p>	<p><b>ID-75:</b> Considerations on professional risks and preventive measures in the green technologies sector Authors: <b><u>SMIDU Eduard</u></b>, CHIVU Oana Roxana, NIŢOI Dan, GHEORGHE Marinela, BUTU Larisa, BORDA Claudia, BUJOR Constantin</p>

<p>5. 15:00 – 15:15</p>	<p><b>ID-77:</b> Current trend, concepts and challenges in remanufacturing of the industrial products Authors: <b><u>DIACONESCU Alexandru-Eugen</u></b>, OANCEA Gheorghe</p>
<p>6. 15:15 – 15:30</p>	<p><b>ID-84:</b> Tribological characteristics of Digital Light Processing (DLP) additive manufactured components Authors: <b><u>MACOVEI Gheorghe</u></b>, STAMATE Ciprian Vasile, PALEU Viorel</p>
<p>7. 15:30 – 15:45</p>	<p><b>ID-91:</b> Influence of clearances on the quality of the metal cages window of radial bearings with cylindrical rollers Authors: <b><u>RIPANU Marius Ionuț</u></b>, MIHALACHE Marius Andrei, VASILEVA Dimka, AVRAMOVA Tanya, PANEVA Teodora</p>
<p>8. 15:45 – 16:00</p>	<p><b>ID-107:</b> A review of the sustainability concept in manufacturing engineering and civil engineering Authors: FLORICA Cosmina, <b><u>FEIER Anamaria</u></b>, VIȘESCU Mircea, HERNEA Silvia</p>
<p>9. 16:00 – 16:15</p>	<p><b>ID-111:</b> Environmental, social, and governance factors influencing supply chain management: a systematic literature review Authors: <b><u>UNGUREANU Cristina-Elena</u></b>, FLEACĂ Bogdan</p>
<p>10. 16:15 – 16:30</p>	<p><b>ID-118:</b> Information system evaluation from a green production management perspective in an automotive sector company Authors: <b><u>POHONȚU-DRAGOMIR Ștefana-Cătălina</u></b>, HERGHILIGIU Ionuț-Viorel, VÎLCU Adrian</p>
<p>11. 16:30 – 16:45</p>	<p><b>ID-131:</b> Segmentation and reconstruction of abdominal aortic aneurysm surface models towards the creation of in silico patient cohorts Authors: MANOPOULOS Christos, PLAVOUKOS Christos, KRINI Evangelia, PERIVOLIOTI Vasiliki, KARAGIORGOU Vayia-Despina, MOULAKAKIS Konstantinos, KAKISIS Ioannis, <b><u>RAPTIS Anastasios</u></b>, VAXEVANIDIS Nikolaos</p>
<p>12. 16:45 – 17:00</p>	<p><b>ID-133:</b> Influence of wind turbine blades rotation on the proper functioning of terrestrial radars Author: <b><u>RĂDULESCU Victorita</u></b></p>

**13 October 2023**

**4<sup>th</sup> ONLINE ROOM - CAD/CAE/CAM/CAPP Systems for Design,  
Manufacturing and Assembling**

**14:00 – 17:00**

Microsoft Teams access link: [4th online room](#)

**Section Chair:** Professor, PhD PANAGIOTIS KYRATSIS, University of Western Macedonia

**Section Chair:** Associate Professor, MALCOCI IULIAN, Technical University of Moldova

<p><b>1.</b> <b>14:00 – 14:15</b></p>	<p><b>ID-21:</b> Experimental investigation and Taguchi analysis on the drilling parameters of a structural Aluminium alloy Authors: <b><u>TZOTZIS Anastasios</u></b>, EFKOLIDIS Nikolaos, MANAVIS Athanasios, KYRATSIS Panagiotis</p>
<p><b>2.</b> <b>14:15 – 14:30</b></p>	<p><b>ID-27:</b> Holistic product design for the fur fabric industry: a floor lamp design approach according to brand principles Authors: MANAVIS Athanasios, <b><u>LIOKOS Thomas</u></b>, EFKOLIDIS Nikolaos, KYRATSIS Panagiotis</p>
<p><b>3.</b> <b>14:30 – 14:45</b></p>	<p><b>ID-61:</b> Finite element models for the analysis of the effectiveness of the vertical vibration reduction method of the railway vehicle carbody with anti-bending system - Applications for an experimental scale model Authors: <b><u>DUMITRIU Mădălina</u></b>, SOROHAN Ștefan, APOSTOL Ioana Izabela</p>
<p><b>4.</b> <b>14:45 – 15:00</b></p>	<p><b>ID-62:</b> Data acquisition software application dedicated to the demonstrative experimental system for functionality testing of a new method of reducing vertical vibration of the railway vehicle car body Authors: <b><u>GHEȚI Marius Alin</u></b>, DUMITRIU Mădălina</p>
<p><b>5.</b> <b>15:00 – 15:15</b></p>	<p><b>ID-64:</b> Dynamic behaviour of a freight wagon with wheel flat when running on the track Authors: <b><u>DINU Vlăduț-Marian</u></b>, MAZILU Traian, DINU Ana-Maria</p>
<p><b>6.</b> <b>15:15 – 15:30</b></p>	<p><b>ID-71:</b> The development of an innovative product to reach the current trends in the power tools industry Authors: <b><u>GHENA Marian-Florentin</u></b>, GHICULESCU Liviu-Daniel</p>
<p><b>7.</b> <b>15:30 – 15:45</b></p>	<p><b>ID-86:</b> Cost optimisation for assigned tolerance to a 2D dimensional chain using GeoGebra software Authors: TULCAN Aurel, <b><u>BANCIU Felicia Veronica</u></b>, GROZAV Ion</p>

<p>8. 15:45 – 16:00</p>	<p><b>ID-94:</b> The influence of cutting milling parameters on surface roughness for pretreated mold steels Authors: <b><u>POPESCU Cristian-Eusebiu</u></b>, BUT Adrian</p>
<p>9. 16:00 – 16:15</p>	<p><b>ID-95:</b> Optimization of the CNC processing function of requirements and capabilities Authors: <b><u>BUT Adrian</u></b>, POPESCU Cristian-Eusebiu</p>
<p>10. 16:15 – 16:30</p>	<p><b>ID-101:</b> Simulation of ballast transfer for pontoons Authors: <b><u>HALUS Andrei</u></b>, SEVERIN Irina, ACOMI Nicoleta</p>
<p><b>13 October 2023</b> <b>5<sup>th</sup> ONLINE ROOM - CAD/CAE/CAM/CAPP Systems for Design, Manufacturing and Assembling &amp; Automation and Robotics</b> <b>14:00 – 17:00</b></p> <p>Microsoft Teams access link: <a href="#"><u>5th online room</u></a></p> <p><b>Section Chair:</b> Associate Professor, PhD Eng. <b>SPIROIU MARIUS-ADRIAN</b>, National University of Science and Technology POLITEHNICA Bucharest, România <b>Section Chair:</b> Assistant professor, <b>RABEI IVAN</b>, Technical University of Moldova</p>	
<p>1. 14:00 – 14:15</p>	<p><b>ID-36:</b> Technological aspects of 3d printing of mechanical gears: 3d printing accuracy of surfaces and dimensional chain Authors: <b><u>CANDRAMAN Sergiu</u></b>, GLADÎȘ Vitalie</p>
<p>2. 14:15 – 14:30</p>	<p><b>ID-52:</b> Experimental research on positioning accuracy of educational robots Authors: <b><u>CHITARIU Dragos-Florin</u></b>, AGACHE Teodora-Maria, DUMITRAS Cătălin Gabriel, EDUTANU Florin-Daniel, CHIRIAC George-Gabriel, HORODINCĂ Mihaiță</p>
<p>3. 14:30 – 14:45</p>	<p><b>ID-87:</b> Design of virtual hand to improve proprioceptive feedback for upper-limb prosthetics applications Authors: <b><u>RĂDUICĂ Florin-Felix</u></b>, SIMION Ionel, ENACHE Ioana-Cătălina, CHIVU Oana Roxana</p>
<p>4. 14:45 – 15:00</p>	<p><b>ID-89:</b> Algorithm for anticipating the growth kinetics of nitrided layers Authors: <b><u>COJOCARU Mihai-Ovidiu</u></b>, BRANZEI Mihai, BOGDAN Florea, CALIN Florentina-Georfiana, GHINEA Andrei-Mihai, DRUGA Leontin-Nicolae, LAPTOIU Ștefan</p>

<p>5. 15:00 – 15:15</p>	<p><b>ID-100:</b> Needs analysis for design and development of an educational humanoid robot                  Authors: <u><b>DUGĂEȘESCU Ileana</b></u>, NEACȘU Angela Miruna, ENACHE Vlad-Cristian, NICOLESCU Alexandru Ionuț, ULMEANU Mihaela-Elena, DOICIN Cristian Vasile</p>
<p>6. 15:15 – 15:30</p>	<p><b>ID-104:</b> Pantograph–catenary dynamics simulation for high-speed trains                  Author: <u><b>SPIROIU Marius-Adrian</b></u></p>
<p>7. 15:30 – 15:45</p>	<p><b>ID-105:</b> Study on the aerodynamics of freight trains used in container transport                  Authors: <u><b>ARSENE Sorin</b></u>, SPIROIU Marius-Adrian</p>
<p>8. 15:45 – 16:00</p>	<p><b>ID-112:</b> Integrated CAE/CAD system for parametric design of mechanical assemblies                  Authors: <u><b>TĂMĂȘAN Mihai</b></u>, PRADA Gabriel, POP Florin Alin, BLAGA Florin</p>
<p>9. 16:00 – 16:15</p>	<p><b>ID-116:</b> Automation and robotics for efficient container handling in port terminal: review                  Author: <u><b>BACIOIU Alexandru Ștefan</b></u></p>
<p>10. 16:15 – 16:30</p>	<p><b>ID-130:</b> Enhancing speed regulation in pneumatic systems with electric flow control valves                  Author: <u><b>ENACHE Florin</b></u>, AGUD Mihai, VELICU Ștefan</p>

14 October 2023

**1<sup>st</sup> ONSITE Section – Room 4 – Hotel Institutul Muncii**

*Advanced Manufacturing Process  
&  
Surface Engineering*

**09:00 – 12:00**

**Section Chair:** Associate Professor COTEAȚĂ MARGARETA, Technical University „Gh. Asachi”, Iași, România

**Section Chair:** Associate Professor CROITORESCU VALERIAN, National University of Science and Technology POLITEHNICA Bucharest, România

<p><b>1.</b> <b>09:00 - 09:15</b></p>	<p><b>ID-09:</b> Contributions on the design of techno-economic indicators in the framework of integrated service of local and regional interest Authors: <b>DEAC-SUTEU Dorin-Vasile</b>, ȚÎȚU Aurel-Mihail</p>
<p><b>2.</b> <b>09:15 - 09:30</b></p>	<p><b>ID-17:</b> Elaboration of steels in electric arc furnaces (EAF) and environmental protection Authors: <b>IOANA Adrian</b>, CONSTANTIN Nicolae, MARCU Dragoș Florin, PASARE Vili, POLIFRONI Massimo, NICOLICESCU Claudiu</p>
<p><b>3.</b> <b>09:30 - 09:45</b></p>	<p><b>ID-18:</b> Contributions on gears manufacturing for precessional transmissions by injection molding and additive methods Authors: <b>BREGNOVA Alina</b>, BUGA Alexandru</p>
<p><b>4.</b> <b>09:45 - 10:00</b></p>	<p><b>ID-34:</b> Considerations regarding the optimal dimensional design of machining technologies Authors: <b>STRONCEA Aurel</b>, TOCA Alexei, NIȚULENCO Tatiana</p>
<p><b>10:00 - 10:20</b></p>	<p><b>Coffee Break</b></p>
<p><b>5.</b> <b>10:20 - 10:35</b></p>	<p><b>ID-85:</b> Evaluation of savitzky-golay filtering applied to vibroartographic signals acquired at the knee level and its impact on the crest factor Authors: <b>SMADICI Denisa</b>, PALEU Viorel</p>
<p><b>6.</b> <b>10:35 - 10:50</b></p>	<p><b>ID-98:</b> Possibilities of obtaining complex geometries using additive manufacturing with liquid photopolymers Authors: BESNEA Daniel, <b>MORARU Edgar</b>, SPANU Alina, <b>CONSTANTIN Victor</b>, DINU Elena, PANAIT Iolanda</p>

7. 10:500 – 11:05	<b>ID-108:</b> Ni-Ti Multifunctional materials sintered via concentrated solar energy Authors: <b><u>CROITORU Catalin</u></b> , ROATĂ Ionuț Claudiu
8. 11:05 – 11:20	<b>ID-109:</b> Multifunctional Ni-Cr-Al-Y coatings via thermal spraying Authors: <b><u>ROATĂ Ionuț Claudiu</u></b> , PLAMADEALA Ioan, UNCU Ionuț
9. 11:20 – 11:35	<b>ID-110:</b> Mechanical properties of PETG-Based Materials Destined for 3D-Printing Authors: <b><u>PLAMADEALA Ioan</u></b> , ROATĂ Ionuț Claudiu, POP Mihai Alin
10. 11:35 – 11:50	<b>ID-123:</b> Piston scraper ring lifetime prediction by modeling and numerical analysis Authors: FATIHI Sophia, <b><u>CROITORESCU Valerian</u></b> , OUABIDA Elhoussaine, MHARZI Hassan
11. 11:50 – 12:05	<b>ID-127:</b> Spectral and sem electron microscopy analysis of graphite film, deposited by the procedure of electrical discharges in impulse in under-excitation regime, using pyrolytic graphite cathode Author: <b><u>MARIN Laurentiu</u></b>
12. 12:05 – 12:20	
<p><b>2<sup>nd</sup> ONSITE Section – Room 5 – Hotel Institutul Muncii</b></p> <p><i>Advanced Materials</i></p> <p>&amp;</p> <p><i>CAD/CAE/CAM/CAPP Systems for Design, Manufacturing and Assembling</i></p> <p>&amp;</p> <p><i>Green Manufacturing – Renewable Energy</i></p> <p><b>09:00 – 12:00</b></p> <p><b>Section Chair:</b> Associate Professor GUTU Marin, Technical University of Moldova  <b>Section Chair:</b> Student BODNARIUC VLAD, Eindhoven University of Technology, Netherlands</p>	
1. 09:00 - 09:15	<b>ID-01:</b> Modern approach for design and manufacturing of products using FDM process Authors: CIOBANU Radu, CIOBANU Oleg, <b><u>MALCOCI Iulian</u></b> , KROMA Arkadiusz

2. 09:15 – 09:30	<b>ID-07:</b> Minimizing blade-fluid energy losses in centrifugal hydraulic pump impellers Authors: BOSTAN Viorel, <b><i>PETCO Andrei</i></b>
3. 09:30 – 09:45	<b>ID-13:</b> A case study of the tool paths strategies applicable for milling complex surfaces on a three coordinates CNC machines Author: <b><i>BÎCIOC Mihail</i></b>
4. 09:45 – 10:00	<b>ID-58:</b> Design and analysis of 3d modeled soft pneumatic actuators for use in hand rehabilitation devices Authors: <b><i>ARNĂUȚ Felix Liviu</i></b> , DEACONESCU Tudor
10:00 – 10:20	<b>Coffee Break</b>
5. 10:20– 10:35	<b>ID-67:</b> 3D Modeling and fem analysis on metal coin embossed edge lettering dies Authors: <b><i>GAVRILĂ Cornel Cătălin</i></b> , LATEȘ Mihai Tiberiu
6. 10:35 – 10:50	<b>ID-74:</b> Aspects regarding operation predictability of wind turbines Authors: DULGHERU Valeriu, <b><i>GUȚU Marin</i></b> , ZAPOROJAN Sergiu, MUNTEANU Eugeniu
7. 10:50 – 11:05	<b>ID-80:</b> Computational thermodynamics approach for phase prediction of Ni-based alloy Authors: BALANOU Maria, <b><i>MARKOPOULOS Angelos</i></b>
8. 11:05 – 11:20	<b>ID-90:</b> Current trends in designing and manufacturing of electrical Vtol aircraft Authors: <b><i>MUNTEAN Serafim</i></b> , OANCEA Gheorghe
9. 11:20 – 11:35	<b>ID-93:</b> Overview of nanoparticles enhanced with thermal oils for heat transfer applications Authors: <b><i>CHERECHES Elena Ionela</i></b> , COJOCARIU Nicoleta, MINEA Alina Adriana
10. 11:35 – 11:50	<b>ID-115:</b> Effect of the infill pattern on sound absorption properties of the 3d printed parts Authors: <b><i>POP Mihai-Alin</i></b> , COȘNIȚĂ Mihaela, ZAHARIA Sebastian Marian, MATEI Simona Corina, SPÎRCHEZ Cosmin
11. 11:50 – 12:05	<b>ID-128:</b> The application of specialized software in design for the creation of complex shapes Authors: <b><i>FRUNZE Valentina</i></b> , FLOREA-BURDUJA Elena, RARU Aliona, IROVAN Marcela
12. 12:05 – 12:20	

**3<sup>rd</sup> ONSITE Section – Room 6 – Hotel Institutul Muncii**

*Development of Mechanical Transmissions  
&  
Automation and Robotics*

**09:00 – 12:00**

**Section Chair:** Professor, Dr. hab., MAZURU Sergiu, Technical University of Moldova

**Section Chair:** Associate Professor, CUJBA RODICA, Technical University of Moldova

<p><b>1.</b> <b>09:00 - 09:15</b></p>	<p><b>ID-41:</b> Relative sliding in multipair convex concave contact of teeth, within precessional gearing Authors: BOSTAN Viorel, <b><u>BOSTAN Ion</u></b>, VACULENCO Maxim, ȚOPA Mihai</p>
<p><b>2.</b> <b>09:15 - 09:30</b></p>	<p><b>ID-14:</b> Experimental investigation of precession transmissions with multipair convex-concave gears: data acquisition, experimental samples and results Authors: <b><u>VACULENCO Maxim</u></b>, BODNARIUC Ion, CIOBANU Radu, CIOBANU Oleg, MALCOCI Iulian, <b><u>TRIFAN Nicolae</u></b>, <b><u>VENGHER Dumitru</u></b></p>
<p><b>3.</b> <b>09:30 - 09:45</b></p>	<p><b>ID-06:</b> Some aspects of the technology for manufacturing precessional gears with non-standard profile Authors: <b><u>MAZURU Sergiu</u></b>, SCATICAILOV Serghei</p>
<p><b>4.</b> <b>09:45 - 10:00</b></p>	<p><b>ID-05:</b> The contact problem in multipare convex-concave precessional gearing Authors: <b><u>BALAN VICTOR</u></b>, KULEV Mihail</p>
<p><b>10:00 - 10:20</b></p>	<p><b>Coffee Break</b></p>
<p><b>5.</b> <b>10:20 - 10:35</b></p>	<p><b>ID-19:</b> Automation, control and monitoring of the rotation oscillation plane within Foucault pendulum Authors: MUNTEANU Eugeniu, <b><u>SECRIERU Vitalie</u></b>, DOROGAN Andrei</p>
<p><b>6.</b> <b>10:35 - 10:50</b></p>	<p><b>ID-28:</b> The role of automation in data-driven science Author: <b><u>CUJBA Rodica</u></b></p>
<p><b>7.</b> <b>10:50 - 11:05</b></p>	<p><b>ID-45:</b> Design and optimal modeling of unconventional worm gear with bearings Authors: <b><u>NINACS Roland</u></b>, HARAGÂȘ Simion</p>

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<b>8.</b> <b>11:05 – 11:20</b>	<b>ID-46:</b> Determination of the tribotechnical characteristics of the materials used for precessional transmissions design Authors: POȘTARU Gheorghe, STOICEV Petru, POȘTARU Andrei, BODNARIUC Ion, <b><u>BUGA Alexandru</u></b> , PLATON Andrei
<b>9.</b> <b>11:20 – 11:35</b>	<b>ID-48:</b> Evaluation of seed flow uniformity distributed by seed drill inclined fluted roller at computer aided installation Author: <b><u>GHEORGHITA Andrei</u></b>
<b>10.</b> <b>11:35 – 11:50</b>	<b>ID-70:</b> The role of automation in the formation of the research competence of gift students in the framework of extra-school astronomy activities Authors: TERCU Jan-Ovidiu, <b><u>CHISTOL Vitalie</u></b>
<b>11.</b> <b>11:50 – 12:05</b>	<b>ID-81:</b> Numerical calculation of the multipare convex-concave precession gear Author: <b><u>LEALIN Stanislav</u></b>
<b>12.</b> <b>12:05 – 12:20</b>	<b>ID-126:</b> Automating the procedure for charging and equalizing the level of charge of accumulators in an electric car battery Author: <b><u>PETROV Oleg</u></b>
<b>12:30 – 14:00</b>	<b>CONFERENCE LUNCH - Hotel Institutul Muncii Restaurant „Curtea Casei”</b>
<b>14:00</b>	<b>Departure to CRICOVA Winery</b>
<b>15:00 – 18:00</b>	<b>VISIT the CRICOVA Winery</b>
<b>19:00 – 22:00</b>	<b>CLOSING CEREMONY – Conference Festive DINNER – Hotel Restaurant „Curtea Casei”</b>











AGA TECH SRL was founded recently, in 2021, by a group of Italian engineers and entrepreneurs devoted to quality and focused on providing its customers with affordable, yet reliable and sustainable solutions for industrial and commercial laundries.

Together with the young Moldovan engineers, we managed to combine the knowledge and experience of over 65 years with the innovative minds of the young generation, thanks to this fact we obtained the perfect combination of experience and technological innovations.

At the moment, the main products of the company are clothes dryers with load capacity from 18 kg to 75 kg, with gas, electric or steam heating systems and washing machines with loads from 16 kg to 52 kg per suspension and hard mounted. This range of products allows our customers to choose the most optimal solution to cover their needs in different business environments.

I assure you that although AGA TECH SRL was recently established, it has successfully continued the traditions of the Italian engineering school established more than 65 years ago.

We constantly work to achieve the best results by providing support and assistance, confident that our team will provide you with cutting-edge and innovative ideas backed by solid skills acquired over years and years of experience with professionalism and great enthusiasm.



## **AGA LAUNDRY (AGA TECH SRL)**

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