

INNOVATIVE MANUFACTURING ENGINEERING & ENERGY INTERNATIONAL CONFERENCE

Program

ONLINE ONLY





Thursday, 17th November 2022

- 9:00 9:30 Welcome
- 9:30 10:30
 Plenary session
- 10:30 13:00
 Section sessions
- 13:00 15:00 Break
- 15:00 16:00
 Plenary session
- 16:00 18:00 Section sessions

Summary

Friday, 18th November 2022

- 9:00 10:30
 Plenary session
- 10:30 13:00 Section sessions
- 13:00 15:00 Break
- 15:00 18:00 Section session

*all access links are also available online under the **Program** tab of www.imane.ro



Conference Chair

• Gheorghe CREŢU, PhD.

Program Chair

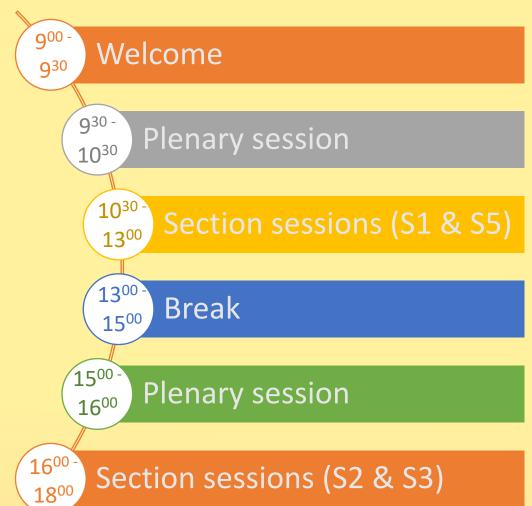
- Laurențiu SLĂTINEANU, PhD.
- Margareta COTEAȚĂ, PhD.
- Andrei MIHALACHE, PhD.

Organizing Committee

- Petru DUŞA, PhD.
- Gheorghe NAGÎŢ, PhD.
- Oana DODUN, PhD.
- Dumitru NEDELCU, PhD.
- Vasile MERTICARU, PhD.
- Constantin CĂRĂUȘU, PhD.
- Eugen AXINTE, PhD.
- Lucian TĂBĂCARU, PhD.
- Viorel COHAL, PhD.
- Florin NEGOESCU, PhD.
- Marius RÎPANU, PhD.
- Mihai BOCA, PhD.
- Daniel MÎNDRU, PhD.
- Simona MAZURCHIEVICI, PhD.











9:00 **–** 9:30

- IManEE2022 Welcome
- Thursday, November 17 · 9:00
 9:30am
- Google Meet joining info
- Video call link: <u>https://meet.google.com/bwc</u> -ibfe-bku
- Or dial: (RO) +40 31 227 7527
 PIN: 381 861 585#
- More phone numbers: https://tel.meet/bwc-ibfebku?pin=2957768170186

*all access links are also available online under the **Program** tab of **www.imane.ro**



9:00 - 9:10

Welcome speech

• PhD. Seghedin Neculai, Gheorghe Asachi Technical University, Vice-Rector of Gheorghe Asachi Technical University, Iasi, Romania

9:10 - 9:20

Welcome speech

 PhD. Dumitraș Cătălin, Gheorghe Asachi Technical University, Dean of Faculty of Machine Manufacturing Technology and Industrial Management, Iasi, Romania

9:20 - 9:30

Welcome speech

• PhD. Creţu Gheorghe, Gheorghe Asachi Technical University, Head of Machine Manufacturing Technology Department, Faculty of Machine Manufacturing Technology and Industrial Management, Iasi, Romania



https://meet.google.com/bwc-ibfe-bku





Plenary Session

- IManEE2022 Plenary session
- Thursday, November 17 · 9:30 10:30am
- Google Meet joining info
- Video call link: <u>https://meet.google.com/b</u> <u>wc-ibfe-bku</u>
- Or dial: (RO) +40 31 227
 7527 PIN: 381 861 585#
- More phone numbers: https://tel.meet/bwc-ibfebku?pin=2957768170186



*all access links are also available online under the **Program** tab of <u>www.imane.ro</u>

9:30 – 10:30



9:30 -10:00

Laser Technology for Separation of Hybrid Structures.

• PhD. Alexandru Sover, Hochschule Ansbach / University of Applied Sciences, Germany

10:00 -10:30

An introduction on a methodology for the modeling and simulation of SLM process.

 PhD. Angelos Markopoulos, National Technical University of Athens, School of Mechanical Engineering, Greece



https://meet.google.com/bwc-ibfe-bku



*all access links are also available online under the **Program** tab of www.imane.ro



Advanced
Manufacturing
Processes

- IManEE2022 S1_Advanced Manufacturing Processes
- Thursday, November 17 ·
 10:30am 1:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/ug</u> <u>c-fbyi-pwt</u>
- Or dial: (RO) +40 31 227 7315 PIN: 471 549 265#
- More phone numbers: https://tel.meet/ugc-fbyipwt?pin=2907919380698

ROOM 01 10:30 — -13:00

Chairs:

Markopoulos Angelos Slătineanu Laurențiu







Secretary:
Ermolai Vasile







https://meet.google.com/ugc-fbyi-pwt

10:30 -10:45

Improved approach to designing the vacuum channels for additively manufactured thermoforming moulds



Marius-Andrei Boca and Alexandru Sover

10:45 -11:00

Study of shaft-hub assembly technology using adhesive



 Sandor Ravai-Nagy, Nicolae Medan and Iacob Eden Ormenisan

11:00 -11:15

Towards global digital modeling of manufacturing



Gabriel Frumusanu and Alexandru Epureanu

11:15 -11:30

FFM thermo-mechanical simulation of cutting force, torque and temperatures in high speed drilling process of AISI 4140



• Patricia Bondor, Dan Ovidiu Rusu, Florin Milas, Glad Contiu and Marcel Sabin Popa









https://meet.google.com/ugc-fbyi-pwt

11:30 – 11:45 Correlation of printing speed and layer height with the geometrical accuracy of FDM-fabricated PETG resolution ribs



 Ioannis Christodoulou, Vasiliki Alexopoulou and Angelos Markopoulos

11:45 – 12:00 Use of shielding gas combinations in automotive welding processes



 Richard Molnar, Anamaria Ioana Feier, Felicia Veronica Banciu and Margareta Coteață

12:00 – 12:15 Topology optimization as a design tool - an industrial example of spray tank bracket



 Sebastian Sobocki, Stanisław Legutko, Jarosław Mac, Jacek Wojciechowski, Sebastian Szymczyk

12:15 – 12:30 Influence of the tool path strategy on the process vibrations during milling of composite material



 Uwe Teicher, Petr Kolar, Erik Selbmann, Jörg Münzner, Steffen Ihlenfeldt







Coffee Break 13:00 - 15:00





Plenary Session

- IManEE2022 Plenary session
- Thursday, November 17 · 3:00 - 4:00pm
- Google Meet joining info
- Video call link: https://meet.google.com/h xb-hutg-rbp
- Or dial: (RO) +40 31 227 7548 PIN: 531 346 605#
- More phone numbers: https://tel.meet/hxb-hutgrbp?pin=3220966259107



15:00 16:00

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15:00 -15:30

Out of autoclave molding of thermoplastic composites.

• PhD.s Denise Bellisario, Loredana Santo, and Fabrizio Quadrini, University of Rome Tor Vergata, Italy

15:30 -16:00

The materials of the future are manufactured today **Composite** materials, applications and perspectives.

• PhD. Paul Bere, Calin Neamtu, Cristian Dudescu, Technical University of Cluj-Napoca, Romania



https://meet.google.com/hxb-hutg-rbp



*all access links are also available online under the **Program** tab of www.imane.ro



Surface Engineering

- IManEE2022 S2_Surface Engineering
- Thursday, November 17 ·
 4:00 6:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/rvt</u> <u>-deyf-wao</u>
- Or dial: (RO) +40 31 227
 7235 PIN: 812 707 870#
- More phone numbers: https://tel.meet/rvt-deyfwao?pin=7132830152748

ROOM 02 16:00 — -18:00

Chairs:

Legutko Stanisław Coteață Margareta







<u>Secretary</u>: Boca Marius







https://meet.google.com/rvt-deyf-wao

16:00 -16:15

RSM-based surface roughness modelling during AISI-H13 slot milling



• Anastasios Tzotzis, Konstantinos Kakoulis, Nikolaos **Efkolidis and Panagiotis Kyratsis**

16:15 – 16:30

Comparative assessment experimental and numerical simulation of ablation depth in PMMA multipass laser cutting



 Abdulhafiz Shaikh, Md Azharuddin Ali and Aakif **Anjum**

Finite element modelling of droplet impact on surfaces with different wetting characteristics and morphology



• Dimitrios Skondras-Giousios, Marina Gounari, Maria Balanou and Angelos P. Markopoulos

16:45 – 17:00

A tool for ball burnishing with ability for wire and wireless monitoring of the deforming force values



Stoyan Slavov and Oleksandr Markov











https://meet.google.com/rvt-deyf-wao

17:00 -17:15

Research on the internal cylindrical surfaces roughness heights processed by a tool with combined effect



Tanya Avramova, Stoyan Slavov and Dimka Vasileva

17:15 – 17:30

Effects of tool type and adaptive milling on the surface topography and the dimensional accuracy of thinwalled components from Ti6Al4V



Szymon Kurpiel, Krzysztof Zagórski and Jacek Cieślik

The sequence of phases in the process of transforming a usual CNC into a hybrid CNC machine for 3D additive manufacturina



• Dan Negrau, Alin Negrau, Gavril Grebenisan and Claudiu Indre

17:45 – 18:00

Software application for determining the surface roughness using image processing with particle classification



Vlad Gheorghita



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- IManEE2022 S3_Advanced Materials
- Thursday, November 17 ·
 4:00 6:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/yz</u> <u>d-qgzw-yna</u>
- Or dial: (RO) +40 31 227 7028 PIN: 136 880 887#
- More phone numbers: https://tel.meet/yzd-qgzwyna?pin=5090035208738

ROOM 03 16:00 — -18:00

Chairs:

Cimpoeșu Nicanor Cărăușu Constantin







<u>Secretary</u>:
Mîndru Daniel









https://meet.google.com/yzd-ggzw-yna

16:00 -16:15

Highlighting the presence of residual stresses in ring-shaped metallic test samples



• Ionel Iulian Hurja, Paul Bârsănescu, Adriana Munteanu, Andrei-Marius Mihalache, Adelina Hrituc, Dragos-Cristian Achitei and Laurentiu Slătineanu

16:15 – 16:30

Shape recovery properties multimaterial 3D printed samples



• Vasile Ermolai, Alexandru Sover, Gheorghe Nagîţ and Alexandru Ionut Irimia

CHI-IRON emerging material CARBIDE.



Elisabeth Bauer Grosse

16:45 -17:00

Experimental results on specific heat capacity of MWCNT nanoenhanced PEG fluid



• Elena-Ionela Chereches, Marius-Ionut Chereches and Alina Adriana Minea









17:00 – 17:15 Mechanical characteristics of ARBOBLEND V2 nature coated with silver nanoparticles



 Justina Georgiana Motas, Simona-Nicoleta Mazurchevici and Dumitru Nedelcu

17:15 – 17:30 Identification of a technology to obtain DAMASCUS steel workpieces



• Ioan Surugiu and Laurențiu Slătineanu

17:30 – 17:45 Analysis of Electrical Discharge Machining (EDM) cut of ceramic layers obtain through Atmospheric Plasma Spraying (APS) on steel substrate



 Marian Lutcanu, Bogdan Istrate, Margareta Coteata, Ioan Stirbu, Irina Teodora Birnoveanu, Mihai Popa, Vasile Manole and Nicanor Cimpoesu

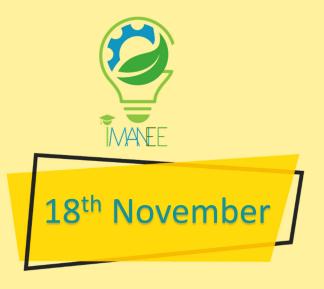
17:45 – 18:00 Importance of the basic reactions in the manufacture of synthetic resins



 Iulia P. Graur, Carmelia Mariana Bălănică Dragomir and Iulian Păduraru







Plenary session

10^{30 -} Section sessions (S6_1 & S4)

13^{00 -} Break

15⁰⁰ Section session (S6_2)





Plenary Session

- IManEE2022 Plenary session
- Friday, November 18 · 9:00– 10:30am
- Google Meet joining info
- Video call link: <u>https://meet.google.com/b</u> <u>qq-bqto-poa</u>
- Or dial: (RO) +40 31 227 7121 PIN: 282 321 286#
- More phone numbers: https://tel.meet/bqq-bqtopoa?pin=1841202144831



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9:00 **–** 10:30



9:00 – 9:30

Geometric Modeling of Complex Curves and Surfaces in Solving Manufacturing Engineering Problems.

 PhD. Merticaru Vasile, Gheorghe Asachi Technical University of Iasi, Romania

9:30 – 10:00 Risk Assessment of Cyber and IoT Threats in Health Care Devices.

 PhD. Arik Sadeh, Industrial Engineering and Technology Management Faculty, HIT Holon Institute of Technology, Israel

10:00 **–** 10:30

Sandvik COROMANT digital workshop.

• Eng. Maricel Chirica, Sandvik COROMANT



https://meet.google.com/bgg-bgto-poa



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ROOM 04

10:30 – 13:00 IManEE2022 - S4_CAD/CAE/CAPP/CAM
 Systems for Design, Manufacturing and Assembling

- Friday, November 18 · 10:30am 1:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/xaq-bggu-zrb</u>
- Or dial: (RO) +40 31 227 7097 PIN: 561 980 599#
- More phone numbers: https://tel.meet/xaq-bgguzrb?pin=2180045105845

Chairs:

Kyratsis Panagiotis Merticaru Vasile







<u>Secretary</u>: Boca Mihai







10:30 – 10:45 Coding in PYTHON for mathematics, science and engineering



Iulian Malcoci, Oleg Ciobanu and Radu Ciobanu

10:45 – 11:00 Generating curved teeth in CAD software



Dinel Popa, Claudia-Mari Popa and Sorin Marcu

11:00 – 11:15

Simulation of car cam processing



• Claudia-Mari Popa, Dinel Popa and Sorin Marcu



Computer-aided process planning for product launching in manufacturing by the AVAL method



 Florin Susac, Gabriel Radu Frumusanu and Cezarina Afteni











11:30 – 11:45 Modelling, simulation and analysis a process flow for a machining part using FLEXSIM software



Nicolae Medan and Sandor Ravai Nagy

11:45 – 12:00 3D positioning device for simulating the operation of wind systems



 Besnea Daniel, Spanu Alina, Elena Dinu, Edgar Moraru and Victor Florin Constantin

12:00 – 12:15 Creation of vacuum-forming matrices for making art-design products from concrete

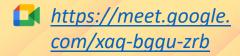


 Tsveta Todorova, Martin Todorov, Tihomir Dovramadjiev, Tsena Murzova, Mariana Murzova and Darina Dobreva

12:15 – 12:30 Analysis and allocation of dimensional tolerances using GEOGEBRA software



Aurel Tulcan, Felicia Veronica Banciu and Ion Grozav









CAD/CAE/CAPP/CAM Systems for Design, Manufacturing and Assembling

12:30 -12:45

Brand identity for product design design through computational techniques



 Athanasios Manavis, Konstantinos Kakoulis, Nikolaos Efkolidis and Panagiotis Kyratsis



https://meet.google.com/xaq-bggu-zrb



Coffee Brea 13:00 - 15:00



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Machinery
and
Machine Elements

- IManEE2022 S5_Machinery and Machine Elements
- Thursday, November 17 ·
 10:30am 1:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/szg</u> -eqfw-fwh
- Or dial: (RO) +40 31 227 6647 PIN: 954 512 500#
- More phone numbers: https://tel.meet/szg-eqfwfwh?pin=7683340060688

ROOM 05 10:30 -13:00

Chairs:

Sover Alexandru Nagîţ Gheorghe



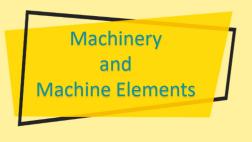




<u>Secretary</u>: Rîpanu Marius









https://meet.google.com/szg-egfw-fwh

10:30 -10:45

Buffer testing in order to evaluate the longitudinal forces through collision of two railway vehicles



Dan Mihail Costescu si Camil Ion Craciun

10:45 -11:00

Estimation of components cost comparative assessment method in of bearings with case interchangeable construction



 Mitica Afteni, Cezarina Afteni, Gabriel-Radu Frumusanu and Florin Susac

11:00 -11:15

Real-time adaptive suspension used for lower limb prosthesis



 Alina Rodica Spanu, Daniel Besnea and Edgar Moraru

11:15 -11:30

usage of Alternative maximum likelihood method to estimate the railwav reliability wheelset probabilistic model

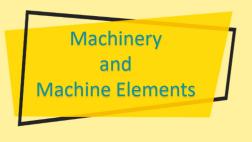


• Marius-Adrian Spiroiu, Sorin Arsene











https://meet.google.com/szg-egfw-fwh

11:30 -11:45

Detection of defects in the railway track that can influence traffic safety using the method of vibration analysis of the vehicle-rail system



Ioana Mihailescu, Gabriel Popa and Razvan Oprea

11:45 – 12:00

Modelling a biped monomobile mechanical system additive manufactured



Ileana Dugăeșescu and Vlad Enache

12:15

An outlook on the transmission errors of non-circular gears designed by supershape centrode hypothesis



• Mihai-Cătălin Radu, Paul-Adrian Pascu, Laurenția Andrei, Gabriel Andrei

12:15 -12:30

Parameterising the geometry curved diffusers and expansion vanes using logarithmic spirals



Alexander Baron von Hohenhau











https://meet.google.com/szg-eqfw-fwh

12:30 -12:45

Structural analysis of an electric car chassis by numerical and experimental methods



Cristian Dudescu, Paul Bere and Călin Neamtu

12:45 – 13:00

Testing a modified weigh-in-motion sensor crossed by different vehicle



• Marius Mihaila, Ciprian Ionut Moraras, Igor Blanari, Paul Doru Barsanescu and Viorel Goanta



Coffee Bre 13:00 - 15:00



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Green manufacturing and Management

- IManEE2022 S6-1_Green manufacturing and Management
- Friday, November 18 · 10:30am 1:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/yvs-vfii-pes</u>
- Or dial: (RO) +40 31 227 7226
 PIN: 753 187 420#
- More phone numbers: https://tel.meet/yvs-vfiipes?pin=2082693261312

ROOM 06 10:30 — < 13:00

Chairs:

Banciu Felicia Mihalache Andrei







<u>Secretary</u>:
Mîndru Daniel









https://meet.google.com/yvs-vfii-pes

10:30 -10:45

Traceability and relations of the process documents in automotive industry



Georgian Udvuleanu

10:45 -11:00

The practical application of TPM principles in the case an electrostatic painting department



 Felicia Veronica Banciu, Anamaria Feier, Silviu Leordean

11:15

Management system adaptation to ISO 45001 requirements: Implementation of the guidelines for continuous improvement



 Adam Górny, Paulina Dziegielewska and Olga Konarkowska

11:15 -11:30

Comparative analysis of the geometry of the envelope design elements of buildings with simple and complex forms of structure



 Zoya Tsoneva, Penka Zlateva and Aleksandrina Bankova











https://meet.google.com/yvs-vfii-pes

Manufacturing companies' sustainability profile: Identification based on multiple correspondence analysis

11:45

11:30 -

• Ionut Herghiligiu, Adrian Vilcu, Ioan-Bogdan Robu and Ștefana Cătălina Pohontu-Dragomir

11:45 -12:00

Turning vanes, curved diffusers and their role in compact wind and water tunnels



Alexander Baron von Hohenhau and Vasile Nasui

12:00 -12:15

Methods used to gain a competitive advantage in the power tool industry



• Marian-Florentin Ghena, Alexandru-Mihai Iamandi, Liviu-Daniel Ghiculescu

12:15 -12:30

Equipment requirements for investigation of sound insulation properties of 3D printed polymeric materials



 Adelina Hriţuc, Oana Dodun, Gheorghe Nagit and Andrei Marius Mihalache









https://meet.google.com/yvs-vfii-pes

12:30 -12:45

12:45 – 13:00

Management of technical flux of information in dental practice



Diana Pavlova

Risk management in the cement industry - Improving the assessment outcomes by developing of a new methodology for prioritizing the treatment options



 Constantin-Cristian Deopale, Liviu-Daniel Ghiculescu and Bogdan-Ionut Cristea



Coffee Brea 13:00 - 15:00



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Green manufacturing and Management

- IManEE2022 S6-2_Green manufacturing and Management
- Friday, November 18 · 3:00 –
 6:00pm
- Google Meet joining info
- Video call link: <u>https://meet.google.com/ydg-fuih-avj</u>
- Or dial: (RO) +40 31 227 7482
 PIN: 541 635 053#
- More phone numbers: https://tel.meet/ydg-fuihavj?pin=4964711682272

ROOM 07 15:00 — 18:00

<u>Chairs</u>: Sadeh Arik

Dușa Petru







Secretary:

Boca Mihai









https://meet.google.com/ydg-fuih-avj

15:00 -15:15

New models and methods of disrupted supply chains in the Industry 4.0 era

Ágota Bányai

15:15 – 15:30

A new approach on Industry 4.0 - A platform to integrate customer in the design decision



 Adrian Ciprian Firu, Anamaria Ioana Feier and George Drăghici

Drafting a security concept for middleware integration environments in the manufacturing enterprise



 Dorin Vasile Deac Suteu, Alina Bianca Pop and Aurel Mihail Titu

15:45 -16:00

The feasibility of using a problemmethodology in solving manufacturing and public interest sectors



• Aurel-Mihail Ţiţu, Vasile Gusan, Dorin-Vasile Deac-Suteu











https://meet.google.com/ydg-fuih-avj

16:00 -16:15

Application of FMEA in the context of organizations providing integral services of local and regional interest in Romania



 Vasile Gusan, Aurel-Mihail Titu, Dorin-Vasile Deac-**Şuteu**

16:15 – 16:30

Management through processes **SMEs using Quality 4.0**



Flory Vlad and Irina Severin

Risk factors and occupational health in office activity



Irina Severin and Gabriela Nalbitoru

16:45 – 17:00

Analyzes and economic strategies regarding the reduction of preventive maintenance costs



Ioan Craciun and Catalin Gabriel Dumitras









17:00 – 17:15

Big data role in smart manufacturing



• Alin Ion Tapirdea and George Draghici



