



26th
edition of

**SLAVA
UKRAINI**

INNOVATIVE
MANUFACTURING
ENGINEERING & ENERGY
INTERNATIONAL
CONFERENCE
Program

ONLINE ONLY





Welcome

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

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www.imane.ro



Conference Chair

- Gheorghe CREȚU, PhD.

Program Chair

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

Organizing Committee

- Petru DUȘA, PhD.
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- Mihai BOCA, PhD.
- Daniel MÎNDRU, PhD.
- Simona MAZURCHIEVICI, PhD.





17th November

9⁰⁰ -
9³⁰

Welcome

9³⁰ -
10³⁰

Plenary session

10³⁰ -
13⁰⁰

Section sessions (S1 & S5)

13⁰⁰ -
15⁰⁰

Break

15⁰⁰ -
16⁰⁰

Plenary session

16⁰⁰ -
18⁰⁰

Section sessions (S2 & S3)





Welcome

9:00 –
9:30

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

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Invited Speakers

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. Crețu 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

9:30 –
10:30

- *IManEE2022 - Plenary session*
- *Thursday, November 17 .
9:30 – 10:30am*
- *Google Meet joining info*
- *Video call link:
<https://meet.google.com/bwc-ibfe-bku>*
- *Or dial: (RO) +40 31 227
7527 PIN: 381 861 585#*
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Keynote Speakers

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>



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Advanced Manufacturing Processes

ROOM 01
10:30 –
13:00

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

Chairs:

Markopoulos Angelos
Slătineanu Laurențiu



Secretary:
Ermolai Vasile



Advanced
Manufacturing
Processes

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

10:30 –
10:45

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

01

- Marius-Andrei Boca and Alexandru Sover

10:45 –
11:00

*Study of shaft-hub assembly
technology using adhesive*

06

- Sandor Ravai-Nagy, Nicolae Medan and Iacob Eden Ormenisan

11:00 –
11:15

*Towards global digital
modeling of manufacturing*

12

- Gabriel Frumusanu and Alexandru Epureanu

11:15 –
11:30

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

13

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





Advanced
Manufacturing
Processes



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

***Correlation of printing speed
and layer height with the geometrical
accuracy of FDM-fabricated PETG
resolution ribs***

11:30 –
11:45

26

- Ioannis Christodoulou, Vasiliki Alexopoulou and Angelos Markopoulos

***Use of shielding gas
combinations in automotive welding
processes***

11:45 –
12:00

49

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

***Topology optimization as a
design tool - an industrial example of
spray tank bracket***

12:00 –
12:15

54

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

***Influence of the tool path
strategy on the process vibrations
during milling of composite material***

12:15 –
12:30

69

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





Coffee Break
13:00 - 15:00





Plenary Session

15:00

—

16:00

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



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Keynote Speakers

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-hutq-rbp>



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Surface Engineering

ROOM 02
16:00 –
18:00

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

Chairs:

Legutko Stanisław
Coteață Margareta



Secretary:
Boca Marius



Surface
Engineering



<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 Efklidis and Panagiotis Kyratsis

04

16:15 –
16:30

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

- Abdulhafiz Shaikh, Md Azharuddin Ali and Aakif Anjum

70

16:30 –
16:45

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

25

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

31





Surface
Engineering



<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

43

17:15 –
17:30

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

- Szymon Kurpiel, Krzysztof Zagórski and Jacek Cieřlik

83

17:30 –
17:45

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

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

58

17:45 –
18:00

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

- Vlad Gheorghita

14



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Advanced Materials

ROOM 03
16:00 –
18:00

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

Chairs:

Cimpoeșu Nicanor
Cărașu Constantin



Secretary:
Mîndru Daniel



Advanced
Materials



<https://meet.google.com/yzd-qgzw-yna>

16:00 –
16:15

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

93

- Ionel Iulian Hurja, Paul Bârsănescu, Adriana Munteanu, Andrei-Marius Mihalache, Adelina Hrițuc, Dragoș-Cristian Achiței and Laurențiu Slătineanu

16:15 –
16:30

Shape recovery properties of multimaterial 3D printed samples

16

- Vasile Ermolai, Alexandru Sover, Gheorghe Nagiț and Alexandru Ionuț Irimia

16:30 –
16:45

CHI-IRON CARBIDE, an emerging material

68

- Elisabeth Bauer Grosse

16:45 –
17:00

Experimental results on specific heat capacity of MWCNT nanoenhanced PEG fluid

71

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





Advanced
Materials

17:00 –
17:15

Mechanical characteristics of ARBOBLEND V2 nature coated with silver nanoparticles

88

- Justina Georgiana Motas, Simona-Nicoleta Mazurchevici and Dumitru Nedelcu

17:15 –
17:30

Identification of a technology to obtain DAMASCUS steel workpieces

90

- 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

92

- 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

15

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



<https://meet.google.com/yzd-qqzw-yna>





18th November

9⁰⁰ -
10³⁰

Plenary session

10³⁰ -
13⁰⁰

Section sessions (S6_1 &
S4)

13⁰⁰ -
15⁰⁰

Break

15⁰⁰ -
18⁰⁰

Section session (S6_2)





Plenary Session

9:00 –
10:30

- *IManEE2022 - Plenary session*
- *Friday, November 18 · 9:00 – 10:30am*
- *Google Meet joining info*
- *Video call link:*
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Keynote Speakers

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/bqq-bqto-poa>



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

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:*
<https://meet.google.com/xaq-bggu-zrb>
- *Or dial: (RO) +40 31 227 7097 PIN: 561 980 599#*
- *More phone numbers:*
<https://tel.meet/xaq-bggu-zrb?pin=2180045105845>

Chairs:

Kyratsis Panagiotis
Merticaru Vasile



Secretary:
Boca Mihai



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

10:30 –
10:45

***Coding in PYTHON for mathematics,
science and engineering***

05

- Iulian Malcoci, Oleg Ciobanu and Radu Ciobanu

10:45 –
11:00

***Generating curved teeth in CAD
software***

09

- Dinel Popa, Claudia-Mari Popa and Sorin Marcu

11:00 –
11:15

Simulation of car cam processing

10

- Claudia-Mari Popa, Dinel Popa and Sorin Marcu

11:15 –
11:30

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

17

- Florin Susac, Gabriel Radu Frumusanu and Cezarina Afteni



<https://meet.google.com/xaq-bqqu-zrb>





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

11:30 –
11:45

Modelling, simulation and analysis a process flow for a machining part using FLEXSIM software

20

- Nicolae Medan and Sandor Ravai Nagy

11:45 –
12:00

3D positioning device for simulating the operation of wind systems

24

- 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

28

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

12:15 –
12:30

Analysis and allocation of dimensional tolerances using GEOGEBRA software

32

- Aurel Tulcan, Felicia Veronica Banciu and Ion Grozav



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

12:30 –
12:45

*Brand identity for product design
through computational design
techniques*



- Athanasios Manavis, Konstantinos Kakoulis,
Nikolaos Efkolidis and Panagiotis Kyratsis



<https://meet.google.com/xaq-bqgu-zrb>



Coffee Break
13:00 - 15:00



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Machinery and Machine Elements

ROOM 05
10:30 –
13:00

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

Chairs:
Sover Alexandru
Nagîț Gheorghe



Secretary:
Rîpanu Marius



Machinery and Machine Elements



<https://meet.google.com/szq-egfw-fwh>

10:30 –
10:45

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

45

- Dan Mihail Costescu si Camil Ion Craciun

10:45 –
11:00

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

11

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

11:00 –
11:15

Real-time adaptive suspension used for lower limb prosthesis

29

- Alina Rodica Spanu, Daniel Besnea and Edgar Moraru

11:15 –
11:30

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

42

- Marius-Adrian Spiroiu, Sorin Arsene





Machinery and Machine Elements



<https://meet.google.com/szq-eqfw-fwh>

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

11:30 –
11:45

08

- Ioana Mihailescu, Gabriel Popa and Razvan Oprea

Modelling a biped monomobile mechanical system additive manufactured

11:45 –
12:00

52

- Ileana Dugăeşescu and Vlad Enache

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

12:00 –
12:15

60

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

Parameterising the geometry of curved diffusers and expansion vanes using logarithmic spirals

12:15 –
12:30

78

- Alexander Baron von Hohenhau





Machinery
and
Machine Elements



<https://meet.google.com/szq-egfw-fwh>

12:30 –
12:45

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

- Cristian Dudescu, Paul Bere and Călin Neamțu

81

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

85



Coffee Break
13:00 - 15:00



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Green manufacturing and Management

ROOM 06
10:30 –
13:00

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

Chairs:


Banciu Felicia
Mihalache Andrei



Secretary:
Mîndru Daniel



Green manufacturing and Management

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

10:30 –
10:45

Traceability and relations of the process documents in automotive industry

18

- Georgian Udvuleanu

10:45 –
11:00

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

19

- Felicia Veronica Banciu, Anamaria Feier, Silviu Leordean

11:00 –
11:15

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

21

- 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

27

- Zoya Tsoneva, Penka Zlateva and Aleksandrina Bankova





Green manufacturing and Management



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

11:30 –
11:45

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

30

- Ionut Herghiligu, 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

33

- Alexander Baron von Hohenhau and Vasile Nasui

12:00 –
12:15

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

34

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

12:15 –
12:30

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

36

- Adelina Hrițuc, Oana Dodun, Gheorghe Nagit and Andrei Marius Mihalache





Green manufacturing
and
Management



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

12:30 –
12:45

*Management of technical flux of
information in dental practice*

38

- Diana Pavlova

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

12:45 –
13:00

41

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



Coffee Break
13:00 - 15:00



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Green manufacturing and Management

ROOM 07

15:00 –
18:00

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

Chairs:

Sadeh Arik

Dușa Petru



Secretary:

Boca Mihai



Green manufacturing and Management



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15:00 –
15:15

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

44

- Ágota Bányai

15:15 –
15:30

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

47

- Adrian Ciprian Firu, Anamaria Ioana Feier and George Drăghici

15:30 –
15:45

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

65

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

15:45 –
16:00

The feasibility of using a problem-solving methodology in the manufacturing and public interest sectors

66

- Aurel-Mihail Țițu, Vasile Gusan, Dorin-Vasile Deac-Șuteu





Green manufacturing
and
Management



<https://meet.google.com/ydq-fuih-avj>

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

16:00 –
16:15

- Vasile Gusan, Aurel-Mihail Țițu, Dorin-Vasile Deac-Șuteu

67

16:15 –
16:30

Management through processes in SMEs using Quality 4.0

- Flory Vlad and Irina Severin

74

16:30 –
16:45

Risk factors and occupational health in office activity

- Irina Severin and Gabriela Nalbitoru

76

16:45 –
17:00

Analyzes and economic strategies regarding the reduction of preventive maintenance costs

- Ioan Craciun and Catalin Gabriel Dumitras

80





Green manufacturing
and
Management

17:00 –
17:15

Big data role in smart manufacturing

- Alin Ion Tapirdea and George Draghici



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Thank you

