InterPartner
Grabchenko's International Conference on Advanced Manufacturing Processes 2024

6th Grabchenko's International Conference on Advanced Manufacturing Processes (InterPartner-2024)

September 10–13, 2024 | Odesa, Ukraine

Conference Agenda

InterPartner-2024 is organized by Odesa Polytechnic National University, National Technical University "Kharkiv Polytechnic Institute", Sumy State University, and International Association for Technological Development and Innovations, in partnership with Poznan University of Technology, Springer Nature, iThenticate, and International Innovation Foundation.

Joining the Conference

As a Speaker

The conference will be held in a hybrid format. You can join us in a Conference Hall at Odesa Polytechnic National University or Virtual Hall.

Google Meet is used for InterPartner Virtual Hall. You can use a browser version or a mobile application.

The link to the Virtual Hall is **https://meet.google.com/snc-xzim-trh.**

Ukrainian time (GMT+3) is used for all sessions.

As a Listener

InterPartner-2024 will be broadcast via the YouTube channel of the IATDI. Please visit the following link **https://www.youtube.com/c/IATDIngo**. You can subscribe to the channel and be notified regarding the planned sessions.

Agenda

Day 1 – **September 10, 2024** – Tuesday	
9^{30}–10^{00}	Registration (for in-person participants)
10^{00}–10^{15}	Opening Ceremony
10^{15}–12^{00}	Keynote Session
12^{00}–13^{00}	Time for Lunch
13^{00}–14^{45}	Session 1 – Design Engineering
14^{45}–15^{00}	Technical Break
15^{00}–17^{00}	Session 2 – Machining Processes
Day 2 – **September 11, 2024** – Wednesday	
10^{00}–12^{00}	Session 3 – Manufacturing Technology
12^{00}–13^{00}	Time for Lunch
13^{00}–14^{45}	Session 4 – Manufacturing Processes
14^{45}–15^{00}	Technical Break
15^{00}–17^{00}	Session 5 – Manufacturing Engineering
18^{00}–22^{00}	Gala Dinner
Day 3 – **September 12, 2024** – Thursday	
10^{00}–12^{00}	Session 6 – Mechanical Engineering I
12^{00}–13^{00}	Time for Lunch
13^{00}–14^{45}	Session 7 – Process Engineering & Engineering Education
14^{45}–15^{00}	Technical Break
15^{00}–17^{00}	Session 8 – Advanced Materials
Day 4 – **September 13, 2024** – Friday	
10^{00}–11^{45}	Session 9 – Mechanical Engineering II
11^{45}–12^{00}	Technical Break
12^{00}–13^{15}	Session 10 – Quality Assurance
13^{15}–13^{25}	Technical Break
13^{25}–13^{45}	Closing Ceremony

Ukrainian time (GMT+3) is used for all sessions.

Day 1: September 10, 2024, Tuesday

9^{30}–10^{00}	**Registration**
10^{00}–10^{15}	**Opening Ceremony**

Volodymyr Tonkonogyi
General Chair of the Conference
Gennadii Oborskyi
Rector of Odesa Polytechnic National University
Vitalii Ivanov
Co-Chair of the Conference

10^{15}–12^{00}	**Keynote Session** *Chair: Volodymyr Tonkonogyi* Odesa Polytechnic National University, Ukraine

Experimental Studies of Vibration Excitation Conditions During Cutting with Cutting Tools
Yuriy Vnukov
Independent scientist, USA

Non-Stationary Dynamic Systems of Machine Tools: Computational and Experimental Analysis of Stability and Oscillations
Alexandr Orgiyan
Odesa Polytechnic National University, Ukraine

12^{00}–13^{00}	**Time for Lunch**
13^{00}–14^{45}	**Session 1 – Design Engineering** *Chair: Olaf Ciszak* Poznan University of Technology, Poland

Heuristic Analysis of the Accident on the Ship's Rudder-Propeller Columns: Case Study
Viktor Ivanov, Tetiana Melenchuk, Svitlana Ivanova, Dimitar Karaivanov and Mariia Volkova

Economic Justification of High-Rotational Submersible Pumps Development for Water Supply Facilities
Vladyslav Kondus, Vladyslav Andrusiak, Mykola Sotnyk, Oleksandr Ratushnyi and Serhii Antonenko

Analysis of Power Consumption of a Wheeled Platform Actuated by a Centrifugal Vibration Exciter
Vitaliy Korendiy, Oleksandr Kachur, Olena Lanets and Rostyslav Predko

Increasing the Service Life of the Pressure Block of the Planetary Hydraulic Motor
Anatolii Panchenko, Angela Voloshina, Mykola Pryhodii, Viktor Drankovskiy and Irina Tynyanova

Optimal Geometrical Dimensions of Drainless Vortex Chamber Ejector of Homogeneous Medium
Andrii Rogovyi, Sergey Krasnikov, Oleksandr Lomeiko, Lyidmila Kiurcheva and Maksim Svynarenko

Substantiation of the Spring-Cam Retarder Brake Design and its Main Parameters Determination
Volodymyr Semenyuk, Oleksandr Vudvud and Valeriy Lingur

Application of Modified Kinematic Graphs to Analyze the Structures of Passive Relaxation Shock Absorbers
Ihor Sydorenko, Victor Kurgan, Volodymyr Semenyuk, Valeriy Lingur and Vladyslav Borysov

14^{45}–15^{00}	**Technical Break**
15^{00}–17^{00}	**Session 2 – Machining Processes** *Chair: Vasily Larshin* Odesa Polytechnic National University, Ukraine

Modeling the Dynamics of Centerless Mortise Grinding on Rigid Supports
Vasyl Chalyj, Serhii Moroz, Anatolii Tkachuk, Valentyn Zablotskyi and Oleg Zabolotnyi

Increasing The Continuous Operation Time of the Diamond Cutting Disk When Using Various Cooling Media
Tetiana Chumachenko, Alla Bespalova, Olha Dashkovska, Oleksij Knush and Tatiana Nikolaeva

Development of a Simulator Program for Studying the Effect of Cutting Modes on Cutting Temperature
Vladimir Gugnin, Liudmyla Perperi, Gennadii Oborskyi, Ganna Goloborodko and Volodymyr Goloborodko

Day 2: September 11, 2024, Wednesday

10^{00}–12^{00} Session 3 – Manufacturing Technology

Chair: Vitalii Ivanov
Sumy State University, Ukraine

A Combined Approach for Determining Tool Cutting Part States Using Machine Learning Models
Oleksandr Derevianchenko, Oleksandr Fomin, Natalya Volkova, Oleksiy Tataryn and Isak Karabegovich

Increasing the Accuracy of Part Obtained by Selective Laser Sintering by Shrinkage Compensation
Yaroslav Garashchenko, Vladimir Fedorovich, Andrii Poharskyi, Nataliia Kozakova and Nataliia Riazanova-Khytrovska

A Simulation Study of DDMRP and MRP Manufacturing Planning and Control Systems
Nelson Guedes, Luís Pinto Ferreira, Francisco Silva, Nuno Fernandes and Sílvio Carmo Silva

Analysis of the Surface Layer of Aluminium Alloy Castings at their Machining by the Surface Homogeneity Criterion
Yaroslav Kusyi, Olha Kostiuк, Andrij Kuk, Iryna Taras and Tetiana Lukan

Strain in ANSYS Simulation and Real Testing
Natalia Lishchenko, Garret O'Donnell, William Dempsey, Vasily Larshin and Victor Marchuk

Vacuum Technology for Magnesium Alloys During Die Casting of Radiators
Oleg Stalnichenko, Tatiana Lysenko, Olga Ponomarenko, Kyryll Kreitser and Evgeny Kozishkurt

Reliability Prediction for Robotic Machines with Parallel Kinematics
Valentin Tikhenko, Gennadii Oborskyi, Aleksandr Volkov and Raul Turmanidze

Study of the Roughness of A36 Steel with TiAlN Coated Inserts
Sandino Torres, Cristian Redroban, Edisson Calderon, Alex Barrionuevo and Roberto Ortega

12^{00}–13^{00} Time for Lunch

13^{00}–14^{45} Session 4 – Manufacturing Processes

Chair: Oleh Onysko
Ivano-Frankivsk National Technical University of Oil and Gas, Ukraine

Strengthening of Aerospace Inconel 718 Alloy Fabricated by LPBF: Hardening Mechanisms Induced by HIP, Heat Treatments and Surface Peening Treatment
Dmytro Lesyk, Silvia Martinez, Aitzol Lamikiz, Oleksii Pedash and Bohdan Mordyuk

Formation of Coatings on Titanium Alloys Saturated with Biocomponents by the PEO Method
Nataliia Imbirovych, Oleksandr Povstyanoy, Inna Boiarska, Tamara Nykoliuk and Nazar Redko

Calculation and Study of the Stress State of the Antifriction Coating Applied to the Working Surface of The Car Cylinder Liner
Ihor Shepelenko, Yakiv Nemyrovskyi, Mykhailo Krasota, Sergii Mahopets and Ivan Vasylenko

Corrosion, Electrochemical and Cavitation-Erosion Properties of Titanium and Its Alloys
Myroslav Stechyshyn, Aleksandr Dykha, Viktor Oleksandrenko, Myroslav Kindrachuk and Andrii Martyniuk

Stress-Strain State During Deforming Broaching of Workpieces Made of Plastic Materials
Yakiv Nemyrovskyi, Valentin Otamanskyi, Oleksandr Melnik, Ihor Shepelenko and Volodymyr Nochvai

Influence of Stochastically Distributed Defects on Crack Formation on Grinding Surfaces of Materials Prone to Cracking
Anatoly Usov, Vitalii Ivanov, Maksym Kunitsyn and Yulia Sikirash

The Use of Plasma Coatings to Increase the Reliability of Equipment at Agribusiness Enterprises
Mikhailo Mushtruk, Volodymyr Vasyliv, Igor Stadnyk, Andriy Derkach and Yuriy Boyko

14^{45}–15^{00}	**Technical Break**
15^{00}–17^{00}	**Session 5 – Manufacturing Engineering** *Chair: Yaroslav Kusyi* Lviv Polytechnic National University, Ukraine

Modeling of the Process of Single-Pass Multi-Point Turning of the NC12 Tapered Thread
Oleh Onysko, Volodymyr Kopei, Lubomyr Borushchak, Volodymyr Pavlyk and Oleksandr Lukan

Development of a Six-Spindle Turret Head of a Multioperational Machine with a Modernized Drive
Oleg Krol, Vladimir Sokolov and Oleksandr Logunov

Composite Impeller for Centrifugal Compressors
Vasyl Martsynkovskyy, Kostyantyn Liubchenko, Andrii Prokopenko, Genadii Nezhibetskiy and Andrii Lazarenko

The Concept of Digital Description of Structural Elements of Technical Systems
Borys Prydalnyi

Contribution of Artificial Intelligence and Simulation to Building Evacuation
Luis Pinto Ferreira, Catarina Costa, Ana Luísa Ramos and Maria Valero

Efficiency Improvement of the Jet-Slit Homogenizer in the Food Engineering
Kyrylo Samoichuk, Alexandr Kovalyov, Vitalii Koshulko, Dmytro Tymchak and Nataliia Sova

Experimental Verification of the Impact of Phase Shift Between Neighboring Waves on the Intensity of Regenerative Oscillations During Continuous Cutting
Pavlo Tryshyn, Yuriy Vnukov, Serhiy Dyadya and Olena Kozlova

Experimental Research on Regenerative Self-Oscillations During Turning
Yuriy Vnukov, Pavlo Tryshyn, Serhiy Dyadya and Olena Kozlova

Day 3: September 12, 2024, Thursday

10^{00}–12^{00} Session 6 – Mechanical Engineering I

Chair: Milan Edl
University of West Bohemia, Czech Republic

Simulation of the Shaft Surface Strengthening as a Result of Discrete Electro-Mechanical Processing
Kostyantyn Holenko, Aleksandr Dykha, Volodymyr Dytyniuk, Maksym Dykha and Orest Horbay

Dynamics Analysis of Elevator Winches with Thyristor Control System
Andrii Boiko, Elena Naidenko, Oleksandr Besarab and Oleksandr Bondar

Qualitative States of Operating Fluid in the Chamber of the Auto-balancing Device
Ilona Drach, Maksym Dykha and Dmytro Marchenko

Method of Accelerated Tests of Axial Piston Pumps by Intensification of Fatigue Damage Accumulation Process
Oleksandr Fatyeyev, Nadiia Fatieieva, Serhii Sushko, Vasil Mitkov and Valerii Poliakov

Development and Substantiation of Proposals for Modernization of Plate Rolling Mill
Oleksandr Kurpe and Volodymyr Kukhar

Stability of Arched Rod Structural Elements of Machines
Viktor Orobey, Oleksandr Lymarenko, Anastasia Bazhanova, Vadim Khamray and Andrii Ponomarenko

Method for Variation of Deformations and Stress Under Natural Vibrations
Taisiia Pokhlebina, Oleksandr Lymarenko, Anna Balaniuk, Anastasia Bazhanova and Vadim Khamray

Dynamics of Nonlinear Vibration Isolator: Parametric Analysis
Volodymyr Puzyrov, Nataliya Losyeva and Nina Savchenko

12^{00}–13^{00}	**Time for Lunch**
13^{00}–14^{45}	**Session 7 – Process Engineering & Engineering Education** *Chair: Natalia Lishchenko* Trinity College Dublin, Ireland

The Camberline Optimization Procedure for Mixed Inflow Turbine Rotor
Mohammed Amine Chelabi, Yevheniia Basova, Sergey Dobrotvorskiy, Dmytro Trubin and Oleksandr Kharchenko

Modeling of Gas-Dynamic Processes of Wave Low-Temperature Heat Generators Dynamic Gas Distribution
Dmytro Dymertsov

Use a Vibration Machine to Obtain Ammonia Water for Plant Feeding
Anatolyi Hordeev, Ihor Sydorenko, Oleksii Matvieiev, Victor Kurgan and Yurii Yeputatov

The Use of Vibromechanical Intensification to Optimize Heat Exchange in Transport and Technological Machines
Igor Palamarchuk, Mikhailo Mushtruk, Yuriy Boyko, Igor Stadnyk and Andriy Derkach

Professional Situations Modeling for Bachelors in Information Technology Training
Serhii Kulieshov, Muhaiyo Alamshoeva and Anna Ostapenko

Diagnostic Assessment of Professional Competence Levels of Engineering Teachers
Petro Luzan, Olena Titova, Iryna Mosia, Tetiana Pashchenko and Tetiana Ishchenko

Quality Management of Training of Engineering Personnel in the Conditions of Developing their Management Competence
Viktor Nagayev, Nataliia Moisieieva, Viktoriia Novikova, Tetiana Mitiashkina and Sergii Chervonyi

14^{45}–15^{00}	**Technical Break**
15^{00}–17^{00}	**Session 8 – Advanced Materials** *Chair: Mykola Melnychuk* Lutsk National Technical University, Ukraine

Ensuring Heat Resistance of Aviation Materials Through the Use of Protective Coatings Based on ZrO2

Nataliia Zaichuk, Oleksandr Umanskyi, Sergiy Shymchuk, Ruslan Kostunik and Oleksandr Terentiev

Calculation of the Electrical Resistance of a Cone Microelectrode for Electrochemical Studies of Coatings

Andriy Bandura, Liubomyr Ropyak and Mykola Romaniv

RF Magnetron Sputtering of Biocompatible Coatings

Khrystyna Berladir, Tetiana Hovorun, Oleksandr Oleshko and Svetlana Radchenko

Composite Powder Materials and Coatings with Self-Sharpening Effect for Strengthening, Restoring, and Manufacturing Parts and Working Bodies of Agricultural Machinery

Mykola Denisenko, Olena Deviatko, Roman Yakovenko and Nataliia Kanivets

Physical and Chemical Processes in the Surface Layers of Metal Materials in Contact with an Oxidizing Environment

Olena Deviatko, Mykola Denisenko, Nataliia Kanivets, Ievgenii Petrychenko and Anatoliy Holovatyuk

Analysis of the Casting Methods Influence on the Microstructure of High-Speed Steel

Tatiana Lysenko, Oleksandr Derevianchenko, Vadym Dotsenko, Maksim Tur and Kirill Kiselyov

Architecture of Online Laboratory for Modeling and Studying the Properties of Structurally Heterogeneous Materials

Volodymyr Serhieiev and Viktor Rud

Investigation of ZhS3dk-VI Alloy as a Material of Gas Turbine Engines Cast Blades

Dmytro Tomkin, Oleksii Pedash, Olena Naumyk, Valeriy Naumyk and Eduard Kondratiuk

Day 4: September 13, 2024, Friday

10^{00}–11^{45} Session 9 – Mechanical Engineering II

Chair: Yevheniia Basova
National Technical University "Kharkiv Polytechnic Institute", Ukraine

Design of a Helical Shredding Drum Blade and Determination of its Unfolding
Serhii Pylypaka, Vyacheslav Hropost, Tetiana Kresan, Tetiana Volina and Svitlana Semirnenko

Contact Interaction of a Ball with a Toroidal Running Track with a Closely Shaped Power Law Profile
Mykola Tkachuk, Andrey Grabovskiy, Mykola Tkachuk, Iryna Hrechka and Hanna Tkachuk

Modeling Dynamic Response and Stability of the Combined Mechanical System with Two Degrees of Freedom
Milica Tufegdzic, Sergiy Kovalevskyy, Predrag Dašić and Aleksandar Miskovic

A Fundamental Solution of the Dynamics of Thin Isotropic Plates Lying on an Elastic Base
Oleh Vietrov, Olha Trofymenko and Vira Trofymenko

Superconductivity of Friction Pairs of Brake Devices
Dmytro Volchenko, Vasyl Skrypnyk, Dmytro Zhuravlov, Iryna Bekish and Serhiy Nikipchuk

Superconductivity of Metal Friction Elements of Brakes
Oleksandr Vudvud, Mykola Ostashuk, Volodymyr Malyk, Tetiana Volobueva and Kateryna Kostrubina

Stress and Strain State of Bar in the Space Between the Stands of a Continuous Shape Rolling Mill
Maksym Shtoda

11^{45}–12^{00} Technical Break

12^{00}–13^{15}	**Session 10 – Quality Assurance** *Chair: Slawomir Luscinski* Kielce University of Technology, Poland

Application of the Dynamic Programming Method in Process Measurement Problems When Assessing Interoperability

Kostiantyn Dyadyura, Igor Prokopovich, Vitalii Khamitov, Tetiana Sikach and Oleksandr Vershkov

Monitoring the Accuracy of Manufacturing Elements of the End Distribution System of a Hydraulic Motor Planetary Type

Sergey Kiurchev, Volodymyr Kyurchev, Oleksandr Radkevych, Oleksandr Fatyeyev and Iryna Hrechka

Improvement of the Technology of Production of Packaged Mineral Sodium Chloride Water Using the Principles of Risk Management

Alona Kysylevska, Igor Prokopovich, Tatiana Bezverkhniuk, Aleksandr Levinskiy and Predrag Dašić

Improving the Quality of Emulsions Dispersion in the Pulsation Homogenizer Using Computer Simulation

Nadiia Palianychka, Kyrylo Samoichuk, Valentyna Verkholantseva, Nataliia Sova and Iryna Kholobtseva

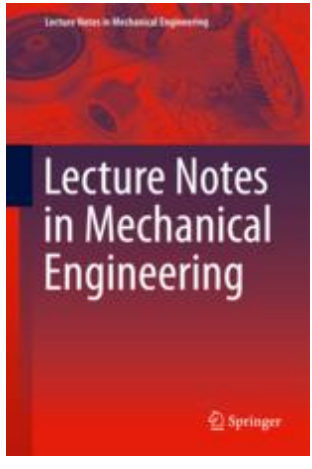
Simulation of Processes in Composite Materials Under Thermometrical Control Taking into Account Their Heterogeneity

Volodymyr Tonkonogyi, Maryna Holofieieva, Yurii Morozov, Anatoly Usov and Isak Karabegovich

13^{15}–13^{25}	**Technical Break**
13^{25}–13^{45}	**Closing Ceremony** *Chair: Volodymyr Tonkonogyi* General Chair of the Conference

Advanced Manufacturing Processes VI

Selected contributions of InterPartner-2024 will be published in Lecture Notes in Mechanical Engineering series (ISSN 2195-4356), Springer Nature under the title **"Advanced Manufacturing Processes VI. Selected Papers from the 6th Grabchenko's International Conference on Advanced Manufacturing Processes (InterPartner-2024), September 10-13, 2024, Odesa, Ukraine"**. The books of this series are indexed by Scopus and EI Compendex, as well as submitted to the Web of Science Core Collection (Conference Proceedings Citation Index).



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The previous conference proceedings of InterPartner Conference Series can be found here **https://link.springer.com/conference/interpartner**.