CADMD 2018

CONFERENCE PROGRAMME

**XXVIth International
Ukrainian-Polish Scientific
and Technical Conference**

CAD IN MACHINERY DESIGN
IMPLEMENTATION AND
EDUCATIONAL ISSUES

organized by:

**Department of Computer
Aided Systems**

**Lviv Polytechnic
National University**

**The Institute of Machine
Design Fundamentals**

**Warsaw University
of Technology**

19-20 October 2018, Lviv, Ukraine

CADMD 2018 Timetable

Friday 19.10.2018

10^{00}	Opening of the conference
$10^{20} – 11^{30}$	**Plenary Session**
$11^{30} – 11^{45}$	coffee break
$11^{45} – 12^{45}$	**Session A**
$13^{00} – 14^{00}$	Lunch
$14^{15} – 15^{15}$	**Session B**
$15^{15} – 15^{30}$	coffee break
$15^{30} – 16^{45}$	**Session C**
17^{00}	Conference Dinner

Saturday 20.10.2018

$10^{00} – 12^{00}$	**Final Session**
$12^{00} – 12^{20}$	**Conference Closing**
$12^{20} – 18^{00}$	Sightseeing. Free program

International Organizing Committee

Chairmen:

Prof. Mykhailo Lobur
Head of CAD Department of Lviv Polytechnic
National University, Ukraine

Prof. Roman Kaczyński
Vice Rector of Development and Cooperation
of Technical University of Białystok, Poland

Prof. Robert Zalewski
Vice-Dean of Faculty of Automotive and Construction Machinery
Engineering of Warsaw University of Technology, Poland

Conference Secretary:

Dr. Nazariy Jaworski
CAD Department of Lviv Polytechnic
National University, Ukraine

Members of Organizing Committee:

Dr inż. Stefan Tomaszek
The Institute of Machine Design Fundamentals
of Warsaw University of Technology, Poland

Dr. Uliana Marikutsa
Dr. Mykhaylo Melnyk
Dr. Konstantin Kolesnyk
MSc. Oleg Faitas
CAD Department of Lviv Polytechnic
National University, Ukraine

CADMD 2018, October 19-20, 2018, Lviv, UKRAINE

International Program Committee

Prof.	A. Aboltins	Latvia University of Life Sciences and Technologies
Prof.	J. Bajkowski	Warsaw University of Technology
Prof.	W. Batko	AGH University of Science and Technology
Prof.	L. Hloba	National Technical University of Ukraine "Kyiv Polytechnic Institute"
Prof.	I. Hrytsay	Lviv Polytechnic National University
Dr.	J. Jozwik	Lublin University of Technology
Prof.	R. Kaczyński	Bialystok University of Technology
Prof.	Y. Kharchenko	Lviv Polytechnic National University
Prof.	P. Krawiec	Poznan University of Technology
Prof.	I. Kuzo	Lviv Polytechnic National University
Prof.	M. Lobur	Lviv Polytechnic National University
Dr.	A. Łukaszewicz	Bialystok University of Technology
Prof.	I. Malujda	Poznan University of Technology
Prof.	O. Matviykiv	Lviv Polytechnic National University
Dr.	M. Melnyk	Lviv Polytechnic National University
Dr.	G. Mieczkowski	Bialystok University of Technology
Prof.	J. Pokojski	Warsaw University of Technology
Dr.	R. Sheremeta	Lviv Polytechnic National University
Prof.	N. Sidenko	Riga Technical University
Prof.	P. Skawiński	Warsaw University of Technology
Prof.	Z. Stotsko	Lviv Polytechnic National University
Prof.	E. Świtoński	The Silesian University of Technology
Prof.	W. Tarełko	Gdynia Maritime University
Prof.	V. Teslyuk	Lviv Polytechnic National University
Prof.	A. Tylikowski	Warsaw University of Technology
Prof.	R. Zalewski	Warsaw University of Technology

Plenary Session

Friday 19.10.2018 $10^{20} – 11^{30}$

Chairman: Mykhailo Lobur

1. **Numerical Simulation of Separated currents and Heat Transfer in a Channel with Discrete Roughness**
Natalia Sidenko, Egils Dzelzitis

2. **Designing of Z-Axis Comb-Drive MEMS Accelerometer**
Cezary Maj, Michał Szermer

3. **Modeling MEMS Membranes Characteristics**
Igor Nevliudov, Viktoriia Bortnikova,
Olena Chala, Svitlana Maksymova

4. **Simulation of the Structure of Proton-Exchange Membrane Fuel Cell by Microlevel Cellular Models**
Nazariy Jaworski, Uliana Marikutsa,
Ihor Farmaha, Volodymyr Karkulovskyy

5. **Definition of the Path with Minimum Total Length on Base the Flows between Nodes of the Network**
Vitaliy Mazur

Session A

Friday 19.10.2018 $11^{45} - 12^{45}$

Chairman: Viktoriia Bortnikova

1. **Magneto-Rheological Materials Dynamic Properties Investigation Using Refined Layer-Wise Theory**
   Bohdan Diveyev, Orest Horbay,
   Ihor Konyk, Ihor Velhan

2. **About Some Statistical Laws of the Processing of Experimental Data of Complex Systems**
   Petro Kosobutskyy, Mykhailo Lobur,
   Natalya Nestor, Alla Morgulis

3. **Different Control of the Semi-Active Vibration Absorber**
   Bohdan Diveyev, Mykhajlo Hlobchak,
   Ivan Kernytskyy , Gennadij Cherchyk

4. **Temperature Distribution on Continuous-Drive Friction Welding Involving Plastic Deformation**
   Andrzej Łukaszewicz

5. **Finite Element Type and the Features of the I-Beam Simulation Influence on the Calculation Results**
   Igor Nevliudov, Vladyslav Yevsieiev,
   Konstantin Kolesnyk, Veliade Saliieva

Session B

Friday 19.10.2018 $14^{15} - 15^{15}$

Chairman: Cezary Maj

1. **Software for the Study of Three-Dimensional Assemblies by Using Cellular Automata**
    Yaroslav Sokolovskyy, Oleksiy Sinkevych

2. **Basic Principles of Functioning of the Hybrid Cryptographic System**
    Olexander Belej

3. **Possibilities of Modelling Overvoltage Protection Systems in Electrical Networks**
    Michał Borecki, Yuriy Khanas

4. **Improvement of the Method of Transformation of Numerical Matrices by Algorithm of their Balancing**
    Yuriy Khanas, Roman-Andriy Ivantsiv

5. **Mathematical Modeling of the Phase Transitions in the Process of Heat-and-Mass Transfer in Anisotropic Materials**
    Yaroslav Sokolovskyy, Bogdana Gayvas,
    Iryna Boretska, Igor Kroshnyy

Session C

Friday 19.10.2018 $15^{30} - 16^{45}$

Chairman: Pavlo Tymoshchuk

1. **Analysis of Steady-States of Continuous-Time Impulse K-Winners-Take-All Neural Network**
   Pavlo Tymoshchuk

2. **Electrical Model of Vibratory Micro Angular Velocity Sensor**
   Jacek Nazdrowicz, Mariusz Jankowski

3. **Architecture of Memory Blocks for Hardware Implementation of Partially Parallel Fuzzy ART Neural Network**
   Serhii Shatnyi, Pavlo Tymoshchuk

4. **The Method and Algorithm for Increasing Diversity in Recommendation Systems**
   Mykhailo Lobur, Mykhaylo Shvarts,
   Yuriy Stekh

5. **Coventor MEMS+ Application for Simulation Rotational Motion Microsensor**
   Jacek Nazdrowicz

Final Session

Saturday 20.10.2018 $10^{00} – 12^{00}$

Chairman: Mykhailo Lobur

1. **Concluding reports of Section's Chairmen**

2. **Discussion**

3. **Conference summary**

Conference Closing

Saturday 20.10.2018 $12^{00} – 12^{20}$