

**IDCW2023** **LUBLIN 7-10 XI 2023**  
**1 st INTERDISCIPLINARY DOCTORAL CONFERENCE & WORKSHOP**  
**1 INTERDYSCYPLINARNA KONFERENCJA DOKTORANTÓW & WARSZTAT**

POLITECHNIKA LUBELSKA LUBLIN UNIVERSITY OF TECHNOLOGY  
 NAWA POLISH NATIONAL AGENCY FOR ACADEMIC EXCHANGE  
 POLITECHNIKA LUBELSKA SZKOŁA DOKTORSKA W POLITECHNICIE LUBELSKIEJ  
 STER PROGRAMME

Programme

Tuesday - November 7		
Faculty of Electrical Engineering and Computer Science		
14:00-15:00	Registration	
15:00-15:30	<b>Invited Lecture 1</b> prof. Kruno MILICEVIC: <i>Digital Transformation of Metrology</i>	Chairman: T. Kołtunowicz Aula E201
15:30-16:00	<b>Invited Lecture 2</b> prof. Anton TRNIK: <i>Non-destructive measurement of Young's modulus</i>	Chairman: T. Kołtunowicz Aula E201
16:00-18:00	Visit Laboratory	
18:00-19:00	Steering Committee Meeting-part 1	Aula E212
19:00-20:00	Steering Committee Meeting-part 2	Aula E212

Wednesday - 8 November 2023		
Faculty of Mechanical Engineering - Aula A1		
8:00-9:00	Registration	
9:00-9:30	Welcome Speech	
9:30-10:00	<b>Invited Lecture 3</b> prof. Ivana MILICEVIC: <i>Application of recycled materials in construction: From Structural Elements to Electromagnetic Shielding</i>	Chairman: A. Trnik
<b>Session 1 - Mechanical Engineering - A</b>		Chairman: A. Trnik
10:00-10:15	P. R. Koczan <i>Thermal conditions of 3D prints created using the FDM method</i>	
10:15-10:30	M. Lelań <i>Analysis of geometric features of double-layer structure after water jet cutting</i>	
10:30-10:45	K. Ludziak <i>Application hydrotreated vegetable oils (HVO) in low-temperature combustion systems.</i>	
10:45-11:00	W. Okuniewski <i>Effect of shot peening treatment on Ti-6AL-4V: Comparison of additive manufacturing to conventional methods</i>	
11:00-11:15	P. Podolak <i>Multiple impact response of titanium-based FMLs in numerical simulations</i>	
11:15-11:30	M. Rodziewicz <i>The Effect of Filler Size on the Structure and Selected Functional Properties of Silorane-based Powder Composites</i>	
11.30-12.00	Coffee Break	

<b>Session 2 - Electrical Engineering</b>		Chairman: K. Milicevic
12:00-12:15	M. Lech <i>Analysis of the phenomenon of vacuum, low-voltage electric arc</i>	
12:15-12:30	A. Zielonka <i>The impact of renewable energy sources on power grids in Poland</i>	
12:30-12:45	P. Gałaszkiwicz <i>Electrical properties of Mo-W-C nanocomposites.</i>	
12:45-13:00	J. Kowalska <i>The impact of PV sources on the SAIDI and SAIFI indicators</i>	
13:00-13:15	D. Kostyla <i>Fiber optic pressure gauge in medium-voltage vacuum devices</i>	
13:15-13:30	A. Wilczyńska <i>The influence of constructional and technological parameters on AC measurements and surface morphology of multilayered NiFe-SiO<sub>2</sub> nanocomposites</i>	
13.30-14.30	<b>LUNCH - restaurant "Lanczomania"</b>	
14.30-15.00	<b>Invited Lecture 4</b> prof. Igor MEDVED: <i>Determination of moisture diffusivity in porous materials</i>	Chairman: Z. Suchorab
<b>Session 3 - Interdisciplinary</b>		Chairman: I. Medved
15:00-15:15	E. Osmólska <i>Innovative Strategies to Increase Safety in the Fruit and Vegetable Juice Production Process</i>	
15:15-15:30	P. Tymińska-Wójcik <i>Innovative Cheneau brace as an optimised alternative to static orthosis improving idiopathic scoliosis therapy</i>	
15.30-16.00	Coffee Break	
16.00-18.00	Poster Session - PS	
19.00-22.00	<b>Gala Dinner - restaurant "Za Kulisami"</b>	

Thursday - 9 November 2023		
Faculty of Civil Engineering and Architecture - Aula AIII		
9:00-9:30	<b>Invited Lecture 5</b> Hakim ABDELGADER: <i>How to choose concrete mix design methods in hot weather climates</i>	Chairman: R. Rusinek
9:30-10:00	<b>Invited Lecture 6</b> Andjelka HEDRIH: <i>Sperm-oocyte interaction as an oscillatory phenomenon</i>	Chairman: R. Rusinek
<b>Session 4 - Mechanical Engineering - B</b>		Chairman: P. Valvo
10:00-10:15	D. Salamacha <i>Impact of measurement conditions and measurement strategy on the accuracy and repeatability of positioning of a milling plotter</i>	
10:15-10:30	M. Sowa <i>Effect of the oral environment on the degradation of dimethacrylate resins blends modified with liquid rubber</i>	
10:30-10:45	A. Świetlicki <i>Effects of heat treatment and shot peening on 17-4PH steel manufactured using DMLS technology.</i>	
10:45-11:00	M. Trendak <i>Oil quality testing as a basis for warranty claims</i>	
11:00-11:15	K. Vasiukov <i>Wet vacuum impregnation as a modification of the malting process of barley grains of different varieties</i>	
11:15-11:30	R. Zablotni <i>Examining the Effect of Double Excitation in a Lumped Parameter Model for the Implanted Human Middle Ear</i>	
11.30-12.00	Coffee Break	

Session 5 - Civil Engineering		Chairman: Z. Suchorab
12:00-12:15	A. Alsharif- ONLIE <i>The effects of polyethylene and polypropylene fiber additions on the mechanical properties of self-compacting concrete</i>	
12:15-12:30	M. Budka <i>Mechanical properties and mechanical erosion resistance of polymer composites with a quartz protective layer</i>	
12:30-12:45	M. Grzegorzcyk-Frańczak <i>Investigation of the possibility to improve the frost resistance of concrete using polymer microspheres</i>	
12:45-13:00	M. Janek <i>Self-healing of cementitious composites by microbial precipitation of carbonates</i>	
13:00-13:15	A. Szewczak <i>Adhesion of modified epoxy glue to concrete</i>	
13:15-13:30	W. Zbyszyński <i>Evaluation of the interface layer impact on fracture energy of the 3D printed multi-layered mortar composite</i>	
<b>13.30-14.30 LUNCH - restaurant "Lanczomania"</b>		
14.30-15.00	<b>Invited Lecture 7</b> prof. Paolo VALVO: <i>The Finite Element Method in Solid and Structural Mechanics</i>	Chairman: A. Hedrih
15:00-15:30	<b>Invited Lecture 8</b> prof. Daniele FANTERIA: <i>Differences and potential synergies between science, technology and engineering: the perspective of an aeronautical structural engineer</i>	Chairman: A. Hedrih
16.00-18.00	Visit Lublin	
<b>19.00-22.00 Dinner - restaurant "Trybunalska"</b>		

Friday - 10 November 2023		
Faculty of Environmental Engineering		
9:00-9:30	<b>Invited Lecture 9</b> prof. Stefano LENCI: <i>1:1 internal resonance in wind turbines towers</i>	Chairman: R. Rusinek
9:30-10:00	<b>Invited Lecture 10</b> prof. Tamas KALMAR-NAGY: <i>A mechanistic model for turbulence</i>	Chairman: R. Rusinek
<b>Session 6 - Mechanical Engineering - C</b>		Chairman: T. Kalmar-Nagy
10:00-10:15	M. Drożdziel-Jurkiewicz <i>Interlaminar fracture toughness analysis of carbon-fiber titanium laminates – effect of surface modification</i>	
10:15-10:30	S. Kapyś <i>Selected properties of PHB modified by nigella oil cake</i>	
10:30-10:45	J. Brzozowska <i>Problems of forecasting the length of the assembly cycle of complex products realized in the mto (make-to-order) model</i>	
10:45-11:00	K. Cybul <i>Improving relative measurement uncertainty by developing and implementing a new force reference standard up to 100 kN into the national metrology infrastructure</i>	
11:00-11:15	B. Czajka <i>Compressed composite columns - experimental and numerical research</i>	
11:15-11:30	F. Longwic <i>Highly filled polymers as a method of plant waste management</i>	
11.30-12.00	Coffee Break	

**Session 7 - Environmental Engineering**

Chairman: Z. Suchorab

12:00-12:15	G. Sadowska <i>Development of a method for short-term forecasting of energy yield in solar-powered systems</i>
12:15-12:30	K. Wrzesińska <i>Application of HPLC-ICP-MS Coupled Technique for Direct Determination of Iodinated Contrast Media (ICM) in Hospital Wastewater</i>
12:30-12:45	M. Staniszewski <i>Application of machine learning to identify activated sludge organisms</i>
12:45-13:00	N. Marchelina <i>Non-ureolytic pathway of MICP for improvement of loose sandy soil</i>
13:00-13:15	D. Mikušová <i>Monitoring of water transport using reflectometric technique</i>
13:15-13:45	Closing Ceremony