



## Programme

### Tuesday, 24<sup>th</sup> November 2020

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**9.00-9.30** Opening of the conference

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**9.45-11.15** Session I

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**11.30-13.00** Session II

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**13.00-14.00** Lunch break

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**14.00-15.30** Session III

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**15.45-17.00** Session IV – e-poster session

### Wednesday, 25<sup>th</sup> November 2020

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**10.00-11.00** Session V - e-poster session

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**11.15-12.45** Session VI

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**13.00-14.15** Session VII - e-poster session

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**14.15-14.30** Conference summary

# Tuesday 24.11.2020

09.00 – 09.30	<b>Opening of Conference and Welcome Speeches</b>	
	<i>Special Lecture – Grzegorz Łagód</i>	
09.45 – 11.15	<b>Session I</b>	
	<u>K. Urbanowicz</u> A. Bergant H.-F. Duan U. Karadzic D. Sobków	Alternative numerical solution of transient flow in viscoelastic pipes
	<u>Ł. Guz</u> M. Grzesik E. Guz	Simulation of flames and smoke spreading in an underground garage under different ventilation condition
	A. Sieradzki B. Lukasik	Influence of the limited room space on inlet conditions and fan operation at the rotating test rig
	<u>K. Urbanowicz</u> A. Bergant U. Karadzic H. Jing A. Kodura	Numerical investigation of the cavitation flow for constant water (hydraulic) hammer number
	<u>M. Mohammed</u> A. Kamal Ahmad	Finite element modeling of independent core propagation in multicore photonic crystal fibers resulting from anisotropy in structure
	<u>A. Bastarrachea Almodóvar</u> Q. Estrada Barbosa J. Zubrzycki V. Torres Argüelles E. Reynoso A. Rodriguez Mendez E. Coutiño	Mechanical design of a low-cost ABS hand prosthesis using the finite element method
11.30-13.00	<b>Session II</b>	
	P. Podulka	Reduction of end-effect in surface texture analysis
	P. Podulka	Detection of measurement noise in surface topography analysis
	T. Nowicki	Virtual therapy using type 1 diabetes direct simulator
	M. Widomski <u>G. Łagód</u> Z. Suchorab M. Pavlikova Z. Pavlik	Application of the Darcy and Richards equations for modelling of water capillary rise in building materials
	<u>B. Stachura-Terlecka</u> A. Ligeza	Epidemic modeling with cellular automata
	<u>S. Przyłucki</u> P. Powroźnik	Management of fair allocation of network resources in stream services based on SDN principles
13.00-14.00	<b>Lunch break</b>	
14.00-15.30	<b>Session III</b>	
	<u>B. Paszkiewicz</u> Ł. Gierz	Pseudo-bulk SAW transducers fabricated in GaN epitaxial layers grown on sapphire substrate
	<u>Ł. Semkło</u> Ł. Gierz	Research on the measurement of spraying time with seed treatment agent using an innovative valve
	Ł. Jedliński	Analysis of the influence of gear tooth friction on dynamic force in a spur gear
	<u>P. Krakowski</u> R. Karpinski J. Jonak R. Maciejewski	Evaluation of diagnostic accuracy of physical examination and MRI for ligament and meniscus injuries
	M. Garbacz <u>A. Malec</u> Z. Suchorab Ł. Guz	Comparison of the degree of microbiological contamination of selected closed rooms using the method of fast detection with a multi-sensor matrix
	<u>M. Szala</u> <u>M. Awtoniuk</u> L. Łatka W. Macek R. Branco	Artificial neural network model of hardness, porosity and cavitation erosion wear of APS deposited Al <sub>2</sub> O <sub>3</sub> -13 wt % TiO <sub>2</sub> coatings
15.45-17.00	<b>Session IV - e-poster session</b>	
P – 1	<u>I. Miturska</u> A. Rudawska	Structural factors influence on strength properties of S235JR steel welded joints
P – 2	T. Miłek	Evaluation of the possibility of deep drawing of aluminium cylindrical drawpieces from sheets at different relative rolling reductions
P – 3	<u>B. Šarkan,</u> J. Hudec, M. Sejkorova, A. Kuranc	Calculation of the production of exhaust emissions in the laboratory conditions

	M. Kiktova	
<b>P – 4</b>	M. Plechawska-Wójcik	A tool supporting primers generation in the study of DNA methylation
<b>P – 5</b>	Ł. Gałka J. Machowski K. Żyła	Performance of App Inventor in image classification
<b>P – 6</b>	<u>J. Słonec</u> A. Kaczorowska	Considerations on the ethics of artificial intelligence
<b>P – 7</b>	<u>G. Winiarski</u> T. Bulzak M. Szala	Numerical analysis of a two-stage forming process for a hollow part with external flange
<b>P – 8</b>	<u>Ł. Wójcik</u> G. Winiarski	A comparative analysis of a four-stage and five-stage cold forging of a hollow element
<b>P – 9</b>	T. Ronkiewicz <u>J. Aleksiejuk-Gawron</u> M. Awtoniuk J. Kurek	Neural modelling of solar radiation variability
<b>P – 10</b>	<u>R. Raczyński</u> K. Siadkowska	Numerical analysis issues in the evaluation of the helicopter's main rotor stability
<b>P – 11</b>	<u>M. Kulisz</u> I. Zagórski J. Korpysa	Surface quality simulation with statistical analysis after milling AZ91D magnesium alloy using PCD tool
<b>P – 12</b>	M. Majewska G. Wałek T. Ciupa <u>A. Musz-Pomorska</u> M. K. Widomski	Influence of rainfall dynamics uncertainty on sensitivity analyses results in hydrodynamic models of large urbanised catchments
<b>P – 13</b>	D. Majerek <u>G. Łagód</u> B. Szeląg F. Sabba	Use of multidimensional testing to evaluate the impacts of treated wastewater discharge on river water quality – Hotelling test case
<b>P – 14</b>	<u>M. Kaczorowska</u> M. Tokovarov	User experience driven assessment of perspectives of instant messaging development
<b>P – 15</b>	<u>J. Pizoń</u> M. Kulisz J. Lipski	Matrix Profile implementation perspective in Industrial Internet of Things production maintenance application

# Wednesday 25.11.2020

10.00 - 11.00	Session V - e-poster session	
P - 1	T. Krakowski S. Molski H. Ruta P. Lonkwic A. Tofil	Diagnostics of operational wear in hybrid load-carrying cables
P - 2	W. Macek Z. Marciniak R. Branco M. Szala A. Rehmus-Forc	The crack surface morphology investigation of S355J2 steel after bending-torsion fatigue
P - 3	J. Kujawska H. Wasąg	Biochar: a low-cost adsorbent of Methylene Blue from aqueous solutions
P - 4	H. Wasąg J. Kujawska	Application of chitosan for the removal of heavy metals from the spent drilling fluid
P - 5	G. Żukowska M. Chomczyńska M. Myszzura	Influence of diversified anthropogenic pressure on heavy metals contents in soils and plants of garden allotments
P - 6	W. Cel	Assessment of influence of addition of potassium drilling fluid on potassium content in activated sludge in wastewater treatment process in SBR reactors
P - 7	A. Staszowska	Assessment of the effectiveness of the air purifier under model conditions
P - 8	M. Kirichenko-Babko Y. M. Danko J. M. Danylkiv D. Majerek	Comparison of the use of species abundance and presence-absence data for diversity assessment
P - 9	J. Drewnowski M. Sharif Shourjeh P. Kowal W. Cel	Modelling AOB-NOB competition in shortcut nitrification compared with conventional nitrification-denitrification process
P - 10	R. Bąbel K. Sawicki M. Gąsiorowski	Obtaining the 3D geometry of the blade in a training aircraft
P - 11	P. Krakowski R. Karpinski R. Maciejewski J. Jonak	Evaluation of the diagnostic accuracy of MRI in detection knee cartilage lesions using Receiver Operating Characteristic curves
P - 12	K. Dubeński J. Czarnigowski P. Durakiewicz Sz. Szewc	The test-bed research of a low power low temperature PEM fuel cell
11.15 - 12.45	Session VI	
	Ł. Gierz, P. Markowski B. Chmielewski	Validation of an image-analysis-based method of measurement of the overall dimensions of seeds
	M. Uliczka I. Smykła	Determining aircraft aerodynamic characteristics of regular and non-linear airframes and evaluating the efficiency of the applied methods
	S. Skulimowski J. Montusiewicz	Optimization methods of searching algorithms for 2D elements matching
	W. Waheed X. Qingshan M. P. Abdullah	An enhanced fuzzy logic based strategy for non-disruptive load shedding and predictive energy management system
	J. Mielniczuk M. Mazurek M. Badurowicz	Comparison of algorithms for pothole detection based on vehicle acceleration
	G. Litak B. Ambroziewicz P. Wolszczak	Dynamics of a nonlinear energy harvester with subharmonic responses
13.00-14.15	Session VII - e-poster session	
P - 1	Z. Czyż P. Karpiński K. Skiba	Numerical analysis of the airflow around the Gyro-One autogyro
P - 2	I. Smykła I. Kopeć M. Wolski	Analysis of the impact of trailing-edge wing flaps on the aerodynamic characteristics and performance of the Diamond DA-20 aircraft
P - 3	Z. Czyż P. Karpiński K. Skiba	CFD investigation of the aerodynamic characteristics of the autogyro with a double tail stabilizer
P - 4	C. Królak Z. Czyż K. Siadkowska R. Kliza	CFD investigation of the main rotor for an unmanned helicopter

<b>P – 5</b>	<u>T. Bulzak</u> Ł. Wójcik M. Szala	Numerical modelling of forming load on pre-stressed dies
<b>P – 6</b>	K. Cygnarowska Z. Czyż P. Karpiński <u>K. Skiba</u>	Strength analysis of the rotor hub of an unmanned helicopter
<b>P – 7</b>	<u>M. Rogala</u> J. Gajewski	Numerical analysis of porous materials subjected to oblique crushing force
<b>P – 8</b>	<u>M. Rogala</u> J. Gajewski D. Głuchowski	Crushing analysis of energy absorbing materials using artificial neural networks
<b>P – 9</b>	K. Falkowicz	Buckling numerical analysis of composite plate element in asymmetrical configuration
<b>P – 10</b>	K. Falkowicz	Effect of cut-out radius for behaviour of symmetrically laminated plates
<b>P – 11</b>	<u>K. Skiba</u> R. Raczyński R. Kliza M. Wendeker	Strength analysis of a propulsion shaft dedicated for the main rotor test bench
<b>P – 12</b>	<u>K. Siadkowska</u> P. Borowiec	Strength analysis of the conceptual model of a main rotor blade spar with actuators
<b>P – 13</b>	<u>M. Gilewski</u> M. Wypychowski J. Czarnigowski K. Mitrus P. Różyło W. Górski Sz. Trocha	Strength analysis of the drive wheel hub of a hydrogen-powered prototype hyper-light vehicle
<b>P – 14</b>	<u>O. Orynycz</u> A Wasiak K Tucki K Wiszowata	Management of the atmospheric pollution mitigation through investment into modernization of heat generation units
<b>14.15 – 14.30</b>	Conference summary	