

Venue: Kazalnica Family & Conference Resort

10⁰⁰ – 12⁰⁰ **Participants registration** Place – Hall of the Main Building

12⁰⁰ – 13⁰⁰ **Lunch** Place – Tarasola Room (Main Building)

13⁰⁰ – 13³⁰ **OPENING OF THE CONFERENCE** Place – Auditorium Hall (Conference Building)

Chairman – Zygmunt DOMAGAŁA, Jarosław STRYCZEK

- **Welcome of Honorary Guests, Sponsors and Participants** Zygmunt DOMAGAŁA
- **Speech by the Chairman of the Scientific Committee** Jarosław STRYCZEK
- **Presentation of the Mechanical Engineering Faculty of WUST** Celina PEZOWICZ
- **Presentation of the Mechanical and Power Engineering Faculty of WUST** Piotr SZULC

13³⁰ – 15⁰⁰ **SESSION I – APPLICATIONS IN FLUID POWER AND ROTARY SYSTEMS**

Place – Auditorium Hall (Conference Building)

Chairman – Urszula WARZYŃSKA, Piotr SZULC

- **Research in Fluid Power Technology and its fit to EU Goals** Katharina SCHMITZ
- **Fluid power elements and systems from plastics** Jarosław STRYCZEK, Michał BANAŚ, Piotr STRYCZEK
- **An approach to CFD simulation of asymmetric impellers** Matej VACH, Branislav KNÍŽAT, Marek MLKVIK, Róbert OLŠIAK
- **Tightness and stress analysis of GRP flange connections of an extraction column** Alexander RIEDL, Manfred SCHAAF, Gottfried NONNHOF, Thomas HUBER, Bernd SCHWETHELM
- **Discussion**

15⁰⁰ – 15¹⁵ **Coffee break** Place – Coffee Room (Conference Building)

15¹⁵ – 16⁴⁵ **SESSION II – HYDRAULIC ACTUATORS AND SYSTEMS**

Place – Auditorium Hall (Conference Building)

Chairman – Katharina SCHMITZ, Jarosław STRYCZEK

- **State estimation of the hydraulic actuator using the Kalman filter** Petr NOSKIEVIC
- **Recent developments on mobile machine research - electrification, connectivity, sustainable pressure media** Katharina SCHMITZ, Sebastian DEUSTER, Felix FIGGE, Bernhard SENDER, Johannes SPRINK
- **Comparative study of scissor lift drive systems** Andrzej KOSUCKI, Łukasz STAWIŃSKI, Justyna SKOWROŃSKA, Tatiana MINAV
- **High-pressure water mini-hydraulics. Problems of experimental research into the flow in pipes in the range of large pressure drops** Paweł ŚLIWIŃSKI, Kamil URBANOWICZ
- **Discussion**

16⁴⁵ – 17⁰⁰ **Coffee break** Place – Coffee Room (Conference Building)

17⁰⁰ – 18³⁰ **SESSION III – SEALINGS** Place – Auditorium Hall (Conference Building)

Chairman – Alexander RIEDL, Przemysław JASZAK

- **Creep effects of thermoplastic flanges** Finn BARTMANN, Alexander RIEDL, Elmar MORITZER
- **Tribological properties of polymeric materials used in 3D printing technology in the context of their application for prototype technical seals** Wojciech WIELEBA, Piotr KOWALEWSKI, Mariusz OPAŁKA
- **Experimental studies of bidirectional-groove dry gas seal for water turbine** Łukasz NORZYMBERCZYK
- **Comprehensive repair service for hydraulic cylinders supported by the modern Seal CAM(R) production system** Kinga MAJCHRZAK
- **Discussion**

18⁴⁵ – 19⁴⁵ **Meeting of the Scientific/Organizing Committee** Place – Szrenica Room (Conference Building)

Chairman – Zygmunt DOMAGAŁA, Jarosław STRYCZEK

20⁰⁰ – 24⁰⁰ **Gala Dinner** Place – Szyszka Restaurant (Seidorf Hotel)

8⁰⁰ – 9⁰⁰ **Breakfast** Place – Tarasola Room (Main Building)

9⁰⁰ – 10⁴⁵ **SESSION IV – SPONSORS** Place – Auditorium Hall (Conference Building)
Chairman – Ryszard JARON, Janusz RAJDA

- **Electrifying mobility: Innovations and challenges in future mobile machinery design (Parker Hannifin)**
Filip KOZIOŁ
- **Cost-effective solutions for innovative industry (Bosch Rexroth)** Arkadiusz GIERCZAK
- **Seals tailored to customer needs (ANGA Uszczelnienia Mechaniczne)** Łukasz NORZYMBERCZYK
- **Research and development capacity of White Drive Motors and Steering Sp. z o.o.** Marcin ŁADZIAK
- **Supplier of aviation components today and in the future (Collins Aerospace)** Ryszard JARON, Wojciech STRAMA

10⁴⁵ – 11⁰⁰ **Coffee break** Place – Coffee Room (Conference Building)

11⁰⁰ – 12³⁰ **SESSION V – VALVES** Place – Auditorium Hall conference Building)
Chairman – Tatiana MINAV, Andrzej MILECKI



- **Analysis of a control valve flow resistance in the application of switching the hydraulic motor circuits**
Janusz RAJDA, Edward LISOWSKI, Grzegorz FIŁO
- **The influence of the type of valve poppet material on the flow characteristics of the lift valve**
Urszula WARZYŃSKA, Michał BANAS
- **Air flow control using electro-pneumatic proportional valve with application in air network** Carmen A. SAFTA, Valentin N. COCOCI, Constantin CALINOIU, Alexandru MARIN
- **Durability and tightness of safety valves** Janusz ROGULA, Robert WOJTYNEK
- **Discussion**

11⁰⁰ – 12³⁰ **SESSION VI – PNEUMATICS** Place – Szrenica Room (Conference Building)
Chairman – Edward LISOWSKI, Kamil URBANOWICZ

- **Comprehensive computational model of a pneumatic propulsion system with interconnected components**
Ryszard DINDORF, Jakub TAKOSOGU, Piotr WOŚ, Łukasz CHŁOPEK
- **Energetic efficiency and dynamic requirements analysis of new semi-open recuperation system for pneumatic circuits of vehicles** Michał KALISZUK, Tomasz SIWULSKI
- **Comparative evaluation of quasi-static force-stroke characteristics of gas-hydraulic buffers before and after endurance testing** Patryk GACKOWSKI, Paweł ŚLIWIŃSKI
- **Evaluation of the vibration isolation properties of an air suspension system with adjustable stiffness in the seats of a working machine** Piotr WOŚ, Ryszard DINDORF, Jakub TAKOSOGU, Zbigniew DZIOPA
- **Discussion**

13⁰⁰ – 14⁰⁰ **Lunch** Place – Tarasola Room (Main Building)

14⁰⁰ – 15⁴⁵ **SESSION VII – FLUID DYNAMICS AND NOISE** Place - Auditorium Hall (Conference Building)
Chairman – Ryszard DINDORF, Krzysztof KĘDZIA



- **Initial theoretical research on cavitation severity during water hammer in metal pipes operating under sub-atmospheric pressures** Kamil URBANOWICZ, Paweł ŚLIWIŃSKI, Michał KUBRAK, Apoloniusz KODURA
- **Experimental study of the effect of a magnetic field on hydrodynamic cavitation accompanied by luminescence** Ihor NOCHNICHENKO, Dmytro KOSTIUK, Vladyslav KRYVOSHEIEV
- **Analysis of wet dust gas flow in the particulate filter** Krzysztof PATRALSKI
- **The methodology for noise reduction in fluid power systems** Wiesław FIEBIG
- **Safety valves - the use of CFD for numerical tests of valves and experimental verification on the test bench in the "Zetkama" laboratory**
Grzegorz ROMANIK, Agnieszka ZGONDEK
- **Discussion**

14⁰⁰ – 15⁴⁵ **SESSION VIII – SYSTEMS** Place – Szrenica Room (Conference Building)
Chairman – Petr NOSKIEVIC, Piotr OSIŃSKI

- **Exploring fuzzy logic for the semi-active suspension system control** Waldemar SRADOMSKI
- **Changing the hydraulic motors control signal generated on the low-pressure line of the CB4-20/24TB haul truck system** Szymon ZAGÓRSKI, Mateusz WOLTER, Tomasz SIWULSKI, Zuzanna WALCZAK
- **Method of effective use of the concept of digital hydraulics in multi-source hydrostatic drive systems**
Ahmed Z. JAN, Krzysztof KĘDZIA
- **Project of reducing energy consumption on a constant pressure hydraulic power supply** Maciej ŁABIK
- **UNITE! - Fluid Power courses** Michał BANAS
- **Discussion**

15⁴⁵ – 16⁰⁰ **Coffee break** Place - Coffee Room (Conference Building)

20⁰⁰ – 24⁰⁰ **Friendly evening** Place - Tarasola Room (Main Building)

8⁰⁰ – 9⁰⁰ **Breakfast** Place – Tarasola Room (Main Building)

9⁰⁰ – 10⁰⁰ **Automation 4.0 (BCU)**

Place – Auditorium Hall (Conference Building)

Chairman – **Michał BANAŚ**

10⁰⁰ – 10¹⁵ **Coffee break** Place – Coffee Room (Conference Building)

10¹⁵ – 11⁴⁵ **SESSION IX – SEALING TECHNOLOGY**

Place - Auditorium Hall (Conference Building)

Chairman – **Marek MLKVIK, Przemysław SZULC**



- **The influence of the microgeometry of the external sealing surface on the leakage rate from the bolted flange joint** Anna PIWOWAR, Przemysław JASZAK, Marcin BIEGANOWSKI
- **The impact of seal clearance on sealing performance in the single-wall-hole honeycomb seal** Huzhi DU, Xiang ZHANG, Yinghou JIAO, Runchao ZHAO, Renwei CHE, Paolo PENNACCHI
- **Prediction of the operating work life of gaskets in flow pipe systems in E10 gasoline environment** Janusz ROGULA
- **The Influence of the cross-sectional shape of the spiral wound gasket on its sealing and mechanical properties** Konrad ADAMEK, Janusz SKRZYPACZ, Przemysław JASZAK
- **Discussion**

10¹⁵ – 11⁴⁵ **SESSION X – GEAR PUMPS** Place – Szrenica Room (Conference Building)

Chairman – **Paweł ŚLIWIŃSKI, Michał BANAŚ**



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- **Radial compensations in internal gear pumps** Krzysztof TOWARNICKI, Tadeusz LEŚNIEWSKI, Justyna KRAWCZYK
- **Moulding technology of cycloidal gears made of Polyoxymethylene POM** Krzysztof BIERNACKI
- **Evaluation of operating parameters and efficiency of the 3PW-SEW-08-28-2-776 gear pump - analytical foundations for decision modeling** Adam DEPTUŁA, Piotr OSIŃSKI, Marian A. PARTYKA, Anna M. DEPTUŁA
- **Development trends in compensation methods for external gear pumps** Piotr OSIŃSKI, Paweł BURY, Rafał CIEŚLICKI, Krzysztof TOWARNICKI
- **Discussion**

11⁴⁵ – 12⁰⁰ **Coffee break**

Place – Coffee Room (Conference Building)

12⁰⁰ – 13³⁰ **SESSION XI – TESTING** Place - Auditorium Hall (Conference Building)

Chairman – **Wojciech WIELEBA, Andrzej KOSUCKI**



- **The measuring method of the air content in oil on the test stand for the tests of the return chambers used in the oil lubrication system tanks** Cezary EDLING
- **Analysis of a hydraulic system flow rate measurement accuracy using lowcost flowmeters** Edward LISOWSKI, Grzegorz FILO
- **The influence of applied surface modifications of a double-acting hydraulic actuator on the sealing condition** Justyna SKOWROŃSKA, Andrzej KOSUCKI, Łukasz STAWIŃSKI
- **Experimental studies of a damper thrust bearing with a hydrostatic leveling system to determine improved parameters of its structural design** Vasyi MARTSYNKOVSKYY, Kostiantyn LIUBCHENKO, Andrii PROKOPENKO, Andrii LAZARENKO
- **Discussion**

12⁰⁰ – 13³⁰ **SESSION XII – PUMPS AND ROTARY SYSTEMS** Place - Szrenica Room (Conference Building)

Chairman – **Branislav KNÍŽAT, Janusz ROGULA**

- **Influence of hydraulic components wear on the performance of a sewage pump** Oleksandr MOLOSHNYI, Grzegorz MOLIŃSKI, Anna CHERNOBROVA
- **Increase in hydraulic head of centrifugal pumps through modification of drilled-type impeller geometry** Przemysław SZULC
- **Analysis of radial forces in centrifugal pumps with a standard multi-blade impeller, a vortex impeller, and a two-blade impeller** Mikołaj SITNIEWSKI, Marcin JANCZAK, Janusz SKRZYPACZ
- **Structuring the surfaces of an impeller as a method to increase the efficiency of a centrifugal pump** Janusz SKRZYPACZ, Bartłomiej CHOMIUK, Aneta NYCZ, Marcin BIEGANOWSKI, Przemysław SZULC
- **Discussion**

13³⁰ – 14⁰⁰ **CLOSING CEREMONY** Place – Auditorium Hall (Conference Building)

Chairman – **Zygmunt DOMAGAŁA, Jarosław STRYCZEK**

14⁰⁰ – 15⁰⁰ **Lunch** Place- Tarasola Room (Main Building)