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**energia**

**INSTAL**



Komitet Termodynamiki i Spalania  
Polskiej Akademii Nauk



**DETAILED SCHEDULE OF 13<sup>th</sup> INTERNATIONAL  
CONFERENCE ON BOILER TECHNOLOGY ICBT POLAND 2018**  
Poland, Szczyrk, October 23 – 26, 2018

**Monday 22 October 2018**

- 17<sup>00</sup> - Opening of Conference Bureau and Reception  
18<sup>00</sup> - 24<sup>00</sup> - Dinner  
18<sup>00</sup> - 24<sup>00</sup> - Installation of commercial and exhibition stands

**Tuesday 23 October 2018**

- 8<sup>00</sup> - 9<sup>00</sup> - Registration  
8<sup>00</sup> - 9<sup>30</sup> - Breakfast

**10<sup>00</sup> CONFERENCE OPENING CEREMONY**

Hall A

- Welcome and Opening - Chairman of the Organizing Committee
- Silesian University of Technology Vice-Rector's Speech
- ENERGOPROJEKT-Katowice SA General Director's Speech
- RAFAKO SA General Director's Speech
- Sumitomo SHI FW Energia Polska President's Speech

**Prof. Marek PRNOBIS**  
**Prof. Janusz KOTOWICZ**  
**Łukasz GRELA**  
**Agnieszka WASILEWSKA - SEMAIL**  
**dr inż. Jarosław MLONKA**

**Historical Ceremonies**

- Prof. Marek Pronobis 50-year academic activity - presentation
- Granting of St. Ochęduszek Medal - Board of the ME and EaEE Faculties Graduates
- Miles Energeticae Awards.

- 11<sup>40</sup> - 12<sup>00</sup> - Coffee break

**12<sup>00</sup> - 13<sup>00</sup> I PLENARY SESSION**  
**Chairman: Prof. dr hab. inż. Marek PRNOBIS**

Hall A

- 12<sup>00</sup> - 12<sup>20</sup> - **Tadeusz CHMIELNIAK**  
*Fuel and technology development of Polish energy sector against the background of the global changes*

- 12<sup>20</sup> - 12<sup>40</sup> - **Jerzy WAWRZYŃCZYK, Tadeusz GRUCZA**  
*Polish energy sector issues over the past years within CBKK (Tarnowskie Góry), RAFAKO (Racibórz), Silesian University of Technology (Gliwice), Polish Society of Mechanical Engineers and Technicians (Katowice), Energoprojekt (Katowice), SEFAKO (Sędziszów), FPM (Mikołów) cooperation – general, short historical overview*

- 12<sup>40</sup> - 13<sup>00</sup> - **Janusz RYDZAK – Rafako SA**  
*Review of Rafako CFB technology*

- 13<sup>00</sup> - 13<sup>20</sup> - **Halina PAWLAK-KRUCZEK, Michał CZEREP, Michał OSTRYCHARCZYK, Łukasz NIEDŹWIECKI, Zbigniew PLUTECKI**  
*Potential and methods for increasing the power energy unit flexibility and efficiency*

- 13<sup>30</sup> - 14<sup>30</sup> - Lunch

**Tuesday 23 October 2018**

**II THEMATIC SESSION**

**Hall A**

**Chairman:**

- 15<sup>00</sup> – 15<sup>20</sup> - **Andrzej RUSIN, Adam WOJACZEK**  
*Application of the criterion of avoided risk for the planning of diagnostic tests of boiler pipes*
- 15<sup>20</sup> – 15<sup>40</sup> - **Wiesław ZIMA**  
*Simulations of fast increases in thermal loading of supercritical power boiler*
- 15<sup>40</sup> – 16<sup>00</sup> - **Tomasz GOLEC, Beata GLOT, Robert LEWTAK, Jarosław JUŚCIŃSKI, Marek KOWALSKI**  
*Optimisation of the BP-1150 boiler in the range of low loads*
- 16<sup>00</sup> – 16<sup>20</sup> - **Henryk RUSINOWSKI, Marcin PLIS**  
*Mathematical modelling for thermal diagnostic and performance optimization of boilers with application of Data Reconciliation Algorithm*
- 16<sup>20</sup> – 16<sup>40</sup> - **Łukasz RUTKOWSKI, Norbert MODLIŃSKI, Hubert SMORAĞ**  
*Modelling and analysis of a OG55 gas boiler working at technical minimum and a hot reserve*
- 16<sup>40</sup> – 17<sup>00</sup> - **Marcin SZEGA, Tomasz CZYŻ**  
*Problems of calculation the energy efficiency of a dual-fuel steam boiler fired with industrial waste gases*
- 17<sup>00</sup> – 17<sup>20</sup> - Coffee break

**I COMMERCIAL SESSION**

**Hall A**

**Chairman:**

- 17<sup>20</sup> – 17<sup>30</sup> - **DURAG Holding AG. Hamburg, Germany**
- 17<sup>30</sup> – 17<sup>45</sup> - **Mariola KOBYLAŃSKA–PAWLISZ, Jarosław BAZAK – Rafako SA**  
*Meeting the emission standards after 2021 by coal-fired boilers - practical point of view*
- 17<sup>45</sup> – 18<sup>00</sup> - **Grzegorz BARDZIŃSKI– Rafako SA**  
*Design, main components and operation parameters of 2450 t/h pulverized fuel fired, once through, steam boiler in 910 MWe unit*
- 18<sup>00</sup> – 18<sup>10</sup> - **Paweł GAWRON – Ecol Sp. z o.o.**  
*Consequences of boilers and ancillary equipment idleness in the light of the new guidelines*

**Thematic exhibitions**

**III THEMATIC SESSION**

**Hall B**

**Chairman:**

- 15<sup>00</sup> – 15<sup>20</sup> - **Krzysztof FILIPOWSKI, Maciej JAKUBIAK**  
*Steam leak detection systems in the boilers – selected examples of applications in Polish energy system*
- 15<sup>20</sup> – 15<sup>40</sup> - **Tomasz HARDY, Krzysztof MOŚCICKI**  
*Electric resistance probe for diagnostic of high temperature corrosion in pulverized boilers*
- 15<sup>40</sup> – 16<sup>00</sup> - **G. GOLAŃSKI, A. MERDA, A. ZIELIŃSKI, P. URBAŃCZYK, J. SŁANIA, M. KIERAT**  
*Microstructure and mechanical properties of the HR6W alloy dedicated for the manufacturing of pressure elements in power units for supercritical and ultra-supercritical parameters*
- 16<sup>00</sup> – 16<sup>20</sup> - **Dominika BANDOŁA, Robert ŻMUDA, Sergiusz MANDRELA, Łukasz LELEK, Wojciech ADAMCZYK, Magdalena WDOWIN, Marcin PICHURA**  
*Hybrid technology for the flue gas mercury emission reduction*
- 16<sup>20</sup> – 16<sup>40</sup> - **Grzegorz WICIAK, Krzysztof GRZYWNOWICZ, Leszek REMIORZ**  
*Method for aiding power-unit exhaust gasses treatment process with use of thermoacoustic cooling phenomenon – selected issues*
- 16<sup>40</sup> – 17<sup>00</sup> - **Agata MLONKA-MĘDRALA, Paulina BUK, Ewelina CIEŚLIK, Wojciech NOWAK**  
*High-temperature corrosion of steel under low-melting eutectic mixtures*
- 17<sup>00</sup> – 17<sup>20</sup> - Coffee break
- 19<sup>30</sup> - **- KNIGHTS' BANQUET (outdoor)**

**Wednesday 24 October 2018**8<sup>00</sup> - 9<sup>00</sup> - Breakfast**IV THEMATIC SESSION****Hall A****Chairman:**

9<sup>00</sup> - 9<sup>20</sup> - **Jan Christoffel VAN DER MERWE, Sandile PETA, Louis JESTIN, Preeya SUKDEO**  
*Pulverized coal burner erosion management using CFD modelling through collaboration between utility and OEM*

9<sup>20</sup> - 9<sup>40</sup> - **Dewan SMIT, Walter SCHMITZ, Reshendren NAIDOO, Sandile PETA, Louis JESTIN**  
*Low NO<sub>x</sub> coal burner temperature profile evaluation*

9<sup>40</sup> - 10<sup>00</sup> - **Ayodimeji BIOBAKU, Walter SCHMITZ, Reshendren NAIDOO**  
*Wall roughness modification of a standard Lagrangian model for the prediction of saltation velocities in gas-solid flows*

10<sup>00</sup> - 10<sup>20</sup> - **Andre GOVENDER, Walter SCHMITZ, Reshendren NAIDOO, Louis JESTIN**  
*Numerical and experimental studies of a pulverised fuel vertical spindle mill*

10<sup>20</sup> - 10<sup>40</sup> - **Gerto PRINSLOO, Priyesh GOSAI, Pieter ROUSSEAU**  
*Application of data analysis algorithms for performance monitoring of boiler heat exchangers*

10<sup>40</sup> - 11<sup>00</sup> - Coffee break**V THEMATIC SESSION****Hall A****Chairman:**

11<sup>00</sup> - 11<sup>20</sup> - **Norbert MODLIŃSKI, Krzysztof SZCZEPANEK, Daniel NABAGŁO, Paweł MADEJSKI, Zbigniew MODLIŃSKI**  
*Mathematical Procedure for Predicting Tube Metal Temperature in the Second Stage Reheater of the Operating Flexibly Steam Boiler*

11<sup>20</sup> - 11<sup>40</sup> - **Ayodimeji BIOBAKU, Walter SCHMITZ, Reshendren NAIDOO**  
*Evaluation and comparison of saltation velocity correlations in the context of Pulverised Fuel transportation*

11<sup>40</sup> - 12<sup>00</sup> - **Kyle ENSLIN, Walter SCHMITZ, Chris van ALPHEN**  
*Estimation of surface moisture in a composite coal stockpile*

12<sup>00</sup> - 12<sup>20</sup> - **Reshendren NAIDOO, Walter SCHMITZ**  
*Using computational fluid dynamics to develop practical boiler tube erosion mitigation strategies*

12<sup>20</sup> - 12<sup>40</sup> - **Pieter ROUSSEAU, Lethukuthula VILAKAZI, Alfayo ALUGONGO**  
*Analysis of measured process parameters and metal temperatures on a coal-fired boiler final superheater at different loads*

13<sup>30</sup> - 14<sup>30</sup> - Lunch**Wednesday 24 October 2018**8<sup>00</sup> - 9<sup>00</sup> - Breakfast**VI THEMATIC SESSION****Hall B****Chairman:**

9<sup>00</sup> - 9<sup>20</sup> - **Tomasz GOLEC, Beata GLOT, Grzegorz NEHRING, Marcin RAZUM, Bartosz ŚWIĄTKOWSKI**  
*Bio-dust power station*

9<sup>20</sup> - 9<sup>40</sup> - **Franciszek STRZELCZYK, Andrzej WAWSZCZAK**  
*Biomass boilers operating in high efficiency distributed cogeneration*

9<sup>40</sup> - 10<sup>00</sup> - **Jacek KALINA, Andrzej SACHAJDAK, Rafał STRZAŁKA, Mateusz ŚWIERZEWSKI, Jerzy CWIĘKA**  
*Operational experience and modelling of biomass combustion process in cogeneration systems with ORC units*

10<sup>00</sup> - 10<sup>20</sup> - **Michał GANDOR**  
*Cofiring of RDF with coal, slurry and biomass in a modern, flexible and sustainable CHP on an example of Fortum Zabrze project – 203 MWth CFB with CFB scrubber*

10<sup>20</sup> - 10<sup>40</sup> - **Katarzyna KACZYŃSKA, Konrad KACZYŃSKI, Piotr PEŁKA**  
*Experimental determination a mass loss of biomass pellets at different temperatures of the combustion chamber burned in the stream of inert material*

10<sup>40</sup> - 11<sup>00</sup> - Coffee break

**Wednesday 24 October 2018****VII THEMATIC SESSION****Hall B****Chairman:**

- 11<sup>00</sup> – 11<sup>20</sup> - **Tomasz HARDY, Maciej JAKUBIAK, Krzysztof FILIPOWSKI**  
*Prevention of chlorine corrosion in biomass boilers by means of SO<sub>3</sub> injection*
- 11<sup>20</sup> – 11<sup>40</sup> - **Krzysztof GŁÓD, Janusz LASEK, Krzysztof SŁOWIK, Jarosław ZUWAŁA**  
*Combustion of coal water slurry – technology enabling the achievement of a reduced technical minimum of the boiler*
- 11<sup>40</sup> – 12<sup>00</sup> - **Halina PAWŁAK-KRUCZEK, Amit ARORA, Krzysztof MOŚCICKI, Krystian KROCHMALNY, Shalvin SHARMA, Łukasz NIEDŹWIECKI**  
*Combustion of raw and torrefied palm kernel shells in a domestic scale boiler – emissions and operating parameters*
- 12<sup>00</sup> – 12<sup>20</sup> - **Joanna WNOROWSKA, Mateusz TYMOSZUK, Sylwester KALISZ**  
*Internal structure of pellets with additive and effect of moisture content before the pelletising process for the finished product*
- 12<sup>20</sup> – 12<sup>40</sup> - **Andrzej KWICZAŁA, Robert WEJKOWSKI, Katarzyna JAGODZIŃSKA**  
*Hybrid technology of flue gas denitrification system. Part 2 – Numerical model of rotary air preheater with SCR module in semi-technical scale*
- 12<sup>40</sup> – 13<sup>00</sup> - **Marek PRNOBIS, Sylwester KALISZ, Kazimierz MROCZEK, Andrzej WALEWSKI, Robert WEJKOWSKI, Wacław WOJNAR, Waldemar GADEK, Tomasz KRESS, Mateusz TYMOSZUK, Izabella MAJ**  
*Studies on the effectiveness of SCR catalysts during combustion of pulverized coal*
- 13<sup>30</sup> - 14<sup>30</sup> - Lunch

**VIII THEMATIC SESSION****Hall A****Chairman:**

- 15<sup>00</sup> – 15<sup>20</sup> - **Udo HELLWIG**  
*Standardisation of industrial boilers*
- 15<sup>20</sup> – 15<sup>40</sup> - **Udo HELLWIG**  
*How to minimise or avoid fouling of heating surfaces of industrial boilers*
- 15<sup>40</sup> – 16<sup>00</sup> - **Paweł MADEJSKI, Norbert MODLIŃSKI**  
*Numerical investigation of pulverized-coal combustion process characteristic in a combustion chamber of an industrial power plant boiler*
- 16<sup>00</sup> – 16<sup>20</sup> - **Katarzyna JAGODZIŃSKA, Kazimierz MROCZEK, Katarzyna NOWIŃSKA, Sylwester KALISZ**  
*Impact of additives on heavy metals retention in the bottom ash – Part 1. RDF incineration*
- 16<sup>20</sup> – 16<sup>40</sup> - **Michał KOŁEK, Marek PAWLIK**  
*Design phase of two CFB biomass boilers including FGT and FGC installations and external biomass installation for the Wilno project*
- 16<sup>40</sup> – 17<sup>00</sup> - Coffee break

**II COMMERCIAL SESSION****Hall A****Chairman:**

- 17<sup>00</sup> – 17<sup>15</sup> - **Damian KLINOS – Rafako SA**  
*Jaworzno J910 Project – The degree of realisation*
- 17<sup>15</sup> – 17<sup>30</sup> - **Jerzy MAZUREK – Rafako SA**  
*Low-cost method of wet scrubbers (FGD) effectiveness improvement*
- 17<sup>30</sup> – 17<sup>45</sup> - **Jarosław KARKOCHA – Rafako SA**  
*Fluidised bed reactor integrated with fabric filter as a complete flue gas cleaning system (SO<sub>x</sub>, halogens, PM) for the small scale boiler units*
- 17<sup>45</sup> – 18<sup>00</sup> - **Edyta DOMIN, Tomasz KOPIEC**  
*Flue gas denitrification methods – overview, comparison and operation experiences*
- Thematic exhibitions**
- 20<sup>00</sup> - **CONFERENCE BANQUET**

**Thursday 25 October 2018**8<sup>00</sup> - 9<sup>30</sup> - Breakfast**IX THEMATIC SESSION****Hall A****Chairman:**9<sup>40</sup> - 10<sup>00</sup> - **Udo HELLWIG***Comparison of Gasifiers with fluidised bed combustors and water cooled inclined grates at industrial size*10<sup>00</sup> - 10<sup>20</sup> - **Norbert MODLIŃSKI***Numerical simulation of SNCR process in coal fired grate boiler*10<sup>20</sup> - 10<sup>40</sup> - **Jan TALER, Piotr DZIERWA, Magdalena JAREMKIEWICZ, Dawid TALER, Karol KACZMARSKI, Marcin TROJAN***Thermal stress monitoring in thick walled pressure components of steam boilers*10<sup>40</sup> - 11<sup>00</sup> - **Sławomir GRĄDZIEL, Karol MAJEWSKI***Experimental determination of the heat transfer coefficient in internally rifled tubes*11<sup>00</sup> - 11<sup>20</sup> - Coffee break**X THEMATIC SESSION****Hall A****Chairman:**11<sup>20</sup> - 11<sup>40</sup> - **Paweł MADEJSKI, Dawid TALER, Jan TALER***Modeling of superheater transient operation in CFB boiler*11<sup>40</sup> - 12<sup>00</sup> - **Paweł MIREK***Experimental investigation of the flow characteristics of low pressure drop air nozzles working with CFB boilers*12<sup>00</sup> - 12<sup>20</sup> - **Stanisław ŁOPATA, Paweł OCŁOŃ, Tomasz STELMACH, Paweł MARKOWSKI***Heat transfer coefficient at the constant heat flux in elliptical tube*12<sup>20</sup> - 12<sup>40</sup> - **Zoltan TEUBER***Similar boilers, different locations comparison of several SNCR applications at lignite fired boilers larger than 300 MWe*12<sup>40</sup> - 13<sup>00</sup> - **Andrzej KRUPA, Arkadiusz T. SOBCZYK, Artur MARCHEWICZ, Tadeusz CZECH, Anatol JAWOREK***Small residential boilers PM emission control – a brief review*13<sup>30</sup> - 14<sup>30</sup> - Lunch**Thursday 25 October 2018**8<sup>00</sup> - 9<sup>30</sup> - Breakfast**XI THEMATIC SESSION - Innovative solutions for industrial boilers****Hall B****Chairman: Dr hab. inż. Sylwester KALISZ, prof. Pol. Śl.**9<sup>40</sup> - 10<sup>00</sup> - **Piotr OSTROWSKI, Marek PRONOBIS, Robert WEJKOWSKI, Sylwester KALISZ***Heat recovery and flue gas cleaning using EWHR installation*10<sup>00</sup> - 10<sup>20</sup> - **Izabella MAJ, Piotr OSTROWSKI***Recommendations for the process of biomass and waste gasification in a rotary reactor*10<sup>20</sup> - 10<sup>40</sup> - **Piotr OSTROWSKI, Marek PRONOBIS, Robert WEJKOWSKI, Sylwester KALISZ***Cogeneration cycle in hot-water boilers*10<sup>40</sup> - 11<sup>00</sup> - **Przemysław GARBACZ, Robert WEJKOWSKI***Numerical study of FJBS system in grate boiler*11<sup>00</sup> - 11<sup>20</sup> - Coffee break**XII THEMATIC SESSION****Hall B****Chairman:**11<sup>20</sup> - 11<sup>40</sup> - **Piotr OSTROWSKI, Marek PRONOBIS, Bartłomiej HERNIK***Co-firing coal suspension in boilers*11<sup>40</sup> - 12<sup>00</sup> - **Piotr OSTROWSKI, Filip SZELEJEWSKI***Estimation of the coal fired heat plant energy efficiency increase after heat recovery from flue gases cooling down below dew point*12<sup>00</sup> - 12<sup>20</sup> - **Izabella MAJ, Sylwester KALISZ, Waldemar GADEK***Ammonia desorption from fly ash*

**Thursday 25 October 2018**

Hall B

- 12<sup>20</sup> – 12<sup>40</sup> - **Mirosław KABACIŃSKI, Janusz POSPOLITA, Janusz POLAK, Piotr ADAMUS, Antoni SALIJ, Kazimierz SUMARA**  
*Application of numerical modelling in stream metrology on the example of primary air installation*
- 12<sup>40</sup> – 13<sup>00</sup> - **Daniel CZAJA**  
*Energy market in a change – operational experience from coal fired CFB boiler located at Tychy CHP, Poland*
- 13<sup>30</sup> - 14<sup>30</sup> - Lunch

**Thursday 25 October 2018**

Hall A

**XIII THEMATIC SESSION**

Chairman:

- 15<sup>00</sup> – 15<sup>20</sup> - **Christian LECHNER**  
*DeNO<sub>x</sub> technology leader Retrofit of SCR & NH<sub>3</sub> Storage with high concentrated & erosive ash*
- 15<sup>20</sup> – 15<sup>40</sup> - **Łukasz MALINOWSKI**  
*Petroleum coke-fired CFB boilers' technology. First experience and results from the latest European petroleum coke-fired CFB boiler located at Solvay Sodi in Devnya, Bulgaria*
- 15<sup>40</sup> – 16<sup>00</sup> - **Michał MAĆZKO**  
*CFB Scrubber – an efficient and flexible flue gas cleaning technology meeting the latest emission standard*
- 16<sup>00</sup> – 16<sup>20</sup> - Coffee break
- 16<sup>20</sup> – 16<sup>40</sup> - **Piotr PLAZA, Jörg MAIER, Izabella MAJ, Waldemar GADEK, Sylwester KALISZ**  
*Potassium and chlorine distributions in high temperature halloysite formed deposits*
- 16<sup>40</sup> – 17<sup>00</sup> - **Kazimierz MROCZEK, Mateusz TYMOSZUK, Katarzyna JAGODZIŃSKA, Sylwester KALISZ**  
*Comparison between Biomass Grindability (BGI) Index and specific grinding energy for beater mills*
- 17<sup>00</sup> – 17<sup>20</sup> - **Ryszard PARYS, Tomasz PARYS**  
*Measurement results during operation of MKM-25 ball-ring mills with dynamic classifier*
- 17<sup>00</sup> – 17<sup>20</sup> - Coffee break

**III COMMERCIAL SESSION**

Hall A

Chairman:

- 17<sup>20</sup> – 17<sup>30</sup> - **IP&S Sp zoo, Stare Babice, Poland**
- 17<sup>30</sup> – 17<sup>40</sup> - **POWER Sp zoo Sp. k.**
- 17<sup>40</sup> – 17<sup>50</sup> - **STEAG Energy Services GmbH, Essen, Germany**
- 17<sup>50</sup> – 18<sup>05</sup> - **Marek ANDRZEJCZYK**  
*Coal-fired power plants in the course of renewable energy sources implementation – conclusions after the first part of the boiler modernization in Turów Power Plant*
- 18<sup>05</sup> – 18<sup>20</sup> - **Paweł RĄCZKA**  
*Enhancement of power unit flexibility using heat accumulation process*
- Thematic exhibitions
- 18<sup>30</sup> – 19<sup>30</sup> - Dinner

**Friday 26 October 2018**

8<sup>00</sup> - 9<sup>30</sup> - Breakfast

**XIV THEMATIC SESSION****Hall A****Chairman:**

9<sup>30</sup> - 9<sup>50</sup> - **Maciej BUJALSKI, Maciej ŻYRKOWSKI, Daniel NABAGŁO, Krzysztof SZCZEPANEK**  
*Algorithm for sootblowers optimization based on monitoring of fouling factors of coal-fired boiler heat exchangers under operating conditions*

9<sup>50</sup> - 10<sup>10</sup> - **Henryk KAR CZ, Michał GRABOWICZ**  
*Impact of coal morphology and carbonisation degree on pulverized-coal combustion process*

10<sup>10</sup> - 10<sup>30</sup> - **Łukasz FELKOWSKI, Jakub MĘDRALA**  
*Analysis of superheater tubes failure*

10<sup>30</sup> - 10<sup>50</sup> - **Kazimierz MROCZEK, Mateusz TYMOSZUK, Sylwester KALISZ, Henryk KUBICZEK**  
*Biomass grindability index determination*

10<sup>50</sup> **CLOSING CEREMONY**  
**Summary and conclusions**

12<sup>30</sup> - 13<sup>30</sup> Coffee break

12<sup>30</sup> - 13<sup>30</sup> Lunch