CONFERENCE PROGRAMME
CONFERENCE VENUE – HOTEL PREZYDENT

SUNDAY, JANUARY 11, 2015

17:00 – 20:00	**Registration (Main Hall)**
18:00 – 21:00	**Reception (Magnolia Restaurant)**

MONDAY, JANUARY 12, 2015

08:00 – 16:00	**Registration (Main Hall)**
08:50 – 09:00	Conference opening (Piłsudski Room)

09:00 – 10:20	**PLENARY LECTURES** **(PIŁSUDSKI ROOM)** CHAIR: **ZBIGNIEW GRONOSTAJSKI**
09:00 – 09:40	Materials modelling in industrial bulk metal forming processes and process chains (5) *Gerhar Hirt, Markus Bambach, Johannes Lohmar, Onur Güvenc, Thomas Henke, Giedon Schwich*
09:40 – 10:20	A description of plastic flow and strain hardening anisotropy suitable for sheet metal forming simulations *Frédéric Barlat, Niko Manopulo*

10:20 – 10:50	Coffee/tea (Main Hall)

10:50 – 12:40	**ROLLING** **(MOŚCICKI ROOM I)** CHAIR: **MONIKA HYRCZA-MICHALSKA**	**GENETIC ALGORITHMS IN MATERIALS DESIGN AND PROCESSING** **(MOŚCICKI ROOM II)** CHAIR: **NIRUPAM CHAKRABORTI, JACEK JACKIEWICZ**	**ARTIFICIAL INTELLIGENCE AND METAMODELLING** **(VIP ROOM)** CHAIR: **BARTEK WIERZBA**
10:50 – 11:20	Numerical model of residual stresses in hot-rolled sheets with taking into account the relaxation process *Andrzej Milenin, Roman Kuziak, Valery Pidvysotskyy, Piotr Kustra, Dorota Byrska-Wójcik*	Optimization of geometrical structures of modern materials by using a hybrid evolution strategy (94) *Jacek Jackiewicz*	Multi-criteria optimization strategy for graph structured production chains *Łukasz Sztangret, Piotr Oprocha, Piotr Jarosz, Stanisław Małecki, Jan Kusiak*

11:20 – 11:40	Concept of thermal modelling for hot strip rolling of magnesium (23) *Alexander Nam, Uwe Prüfert, Michael Eiermann, Rudolf Kawalla*	Multiobjective evolutionary algorithms to optimize the process parameters of high strength ratio tailor welded blanks *Hariharan Krishnaswamy, Ngoc-Trung Nguyen, Nirupam Chakraborti, Myoung-Gyu Lee, Frédéric Barlat*	Application of inverted Artificial Neural Network to design of metallurgical production processes *Grzegorz Górecki, Łukasz Rauch, Jan Kusiak, Maciej Pietrzyk*
11:40 – 12:00	Thermal-mechanical-microstructural model of rolling and cooling of rails *Grzegorz Smyk, Mateusz Ambroziński, Monika Pernach, Maciej Pietrzyk*	Hybrid parallel evolutionary algorithm (103) in optimization of 2D grapehene-like materials *Adam Mrozek, Wacław Kuś, Tadeusz Burczyński*	Intelligent interface for decision support system in metallurgical domain (71) *Krzysztof Regulski, Gabriel Rojek, Dorota Wilk-Kołodziejczyk, Stanisława Kluska-Nawarecka, Edward Nawarecki, Grzegorz Dobrowolski*
12:00 – 12:20	Modelling the flow stress evolution during the cold and hot rolling of an AA6082 *Romain Bureau, Cecilia Poletti, Christof Sommitsch*	Multi-objective optimization of (111) phthalic anhydride catalytic reactor using genetic algorithm with simulated binary jumping genes operator *Vibhu Trivedi, Manojkumar Ramteke*	Control of lead refining process with (78) the use of Case-Base Reasoning approach *Gabriel Rojek, Krzysztof Regulski, Piotr Jarosz, Jacek Gabryel, Jan Kusiak*
12:20 – 12:40	Computer system for design of the hot rolling-laminar cooling sequence for AHSS strips *Łukasz Rauch, Krzysztof Bednarski, Maciej Pietrzyk*	Differential evolution for sustainable (118) supplier selection in pulp and paper industry: a DEA based novel approach *Sunil Kumar Jauhar, Millie Pant, Mahesh C. Nagar*	Extracting knowledge from (85) integrated experimental data on the ADI manufacture *Barbara Mrzygłód, Izabela Olejarczyk-Wożeńska, Mirosław Głowacki, Andrzej Opaliński*

12:40 – 14:10   Lunch (Magnolia Restaurant)

14:10 – 15:30	**ADVANCED NUMERICAL MODELLING OF WARM AND HOT STAMPING PROCESSES** **(MOŚCICKI ROOM I)** CHAIR: **JOSEBA MENDIGUREN, ŁUKASZ MADEJ**		**WELDING** **(MOŚCICKI ROOM II)** CHAIR: **GRZEGORZ KORPAŁA**		**CONTACT PROBLEMS** **(VIP ROOM)** CHAIR: **WITOLD CECOT**	
14:10 – 14:30	Influence of tool geometry on surface condition of V-bent aluminum sheet *Łukasz Morawiński, Andrzej Kocańda*	(30)	Finite element modelling of laser welding for materials with different properties *Aleksander Siwek, Krzysztof Banaś, Kazimierz Chłoń, Kazimierz Michalik, Jan Bielański*		The modelling of ring tests at elevated temperatures for the determination of friction in Ti-6Al-4V forgings *James D. Pollard, Martin Jackson, Andrew Watford, Bradley P. Wynne*	(150)
14:30 – 14:50	Formulation of the optimization task for the design of a car body part made of magnesium alloy *Mateusz Ambroziński, Łukasz Rauch, Marek Paćko, Zbigniew Gronostajski, Maciej Pietrzyk*		The numerical analysis of a titanium sheets welding process and welding joint tensile behavior *Konrad Adamus, Piotr Lacki*	(137)	Determination of friction factor by ring compression testing and FE analysis *Michał Gzyl, Andrzej Rosochowski, Lech Olejnik, Kamil Sikora, Muhammad Jawad Qarni*	(156)
14:50 – 15:10	Numerical simulation of the roll levelling of DP1000 steel using a nonlinear combined hardening material model *Elena Silvestre, Eneko Sáenz de Argandoña, Lander Galdos, Joseba Mendiguren*	(44)	Numerical investigation of refill friction stir spot welding joints *Anna Derlatka, Piotr Lacki*	(144)	Heat transfer coefficient at the steel to steel interface as a function of temperature and pressure *Marcin Rywotycki, Zbigniew Malinowski, Jan Falkus, Krzysztof Sołek, Katarzyna Miłkowska – Piszczek*	
15:10 – 15:30	W-temper forming of AA7075 aluminum alloys as an alternative to the warm and hot stamping *Eneko Sáenz de Argandoña, Lander Galdos, Rafael Ortubay, Joseba Mendiguren, Xabier Agirretxe*	(51)	Numerical modelling of explosive welding with Coupled Eulerian Lagrangian and Multiple Level Refinement approaches *Łukasz Madej, Konrad Perzyński, Henryk Paul*		The influence of thermal conductivity and selected parameters of spray cooling on heat transfer coefficient *Agnieszka Cebo-Rudnicka, Andrzej Buczek, Zbigniew Malinowski*	

15:30 – 16:00   Coffee/tea (Main Hall)

16:00 – 17:20	ADVANCED NUMERICAL MODELLING OF WARM AND HOT STAMPING PROCESSES (MOŚCICKI ROOM I) CHAIR: ENEKO SÁENZ DE ARGANDOÑA, ŁUKASZ MADEJ	MATERIAL MODELS (MOŚCICKI ROOM II) CHAIR: THIERRY BARRIÈRE	PHASE TRANSFORMATION (VIP ROOM) CHAIR: BRADLEY WYNNE
16:00 – 16:20	Calculation of the Forming Limit Curve for titanium grade 2 using modified geometry of samples (37) *Julita Winowiecka, Piotr Lacki*	Material flow analysis in a blanking process using experimental and numerical techniques *Piotr Czyżewski, Andrzej Kocańda, Sławomir Świłło*	Competition between Kirkendall Shift and Frenkel Effect during 2D diffusion process (176) *Bartek Wierzba, Patrycja Wierzba*
16:20 – 16:40	Influence of tooling material and temperature on the final properties of tailor tempered boron steels *Lander Galdos, Eneko Sáenz de Argandoña, Nuria Herrero, Rafael Ortubay, Xabier Agirretxe, José Miguel Martín*	Experimental characterization and numerical modeling of the mechanical behavior of half sandwich laminate in the context of blanking (162) *Lin Chen, Till Clausmeyer, A. Erman Tekkaya*	Calculation of the Fe-Fe₃C phase equilibrium diagram (179) *Henryk Adrian, Przemysław Marynowski, Dariusz Jędrzejczyk*
16:40 – 17:00	Determination of heat transfer coefficients for different initial tool temperatures and closed loop controlled constant contact pressures (58) *Lander Galdos, Eneko Sáenz de Argandoña, Joseba Mendiguren, Rafael Ortubay, Xabier Agirretxe, José Miguel Martín*	Constitutive and numerical modelling of mechanical response of microalloyed steel subjected to cyclic deformation *Paulina Graca, Krzysztof Muszka, Janusz Majta*	Evaluation of possibility of using control theory for modelling of austenite-ferrite transformation *Ivan Milenin, Monika Pernach, Maciej Pietrzyk,*
17:00 – 17:20	Computer aid modeling of charges and dies materials properties for hydromechanical forming process simulation *Monika Hyrcza-Michalska*	Homogenization of Fiber Metal Laminate structures characterized by orthotropic and elastic-plastic material models (169) *Tomasz Nowak*	A comparison of two methods of the determination of parameters of RHEED oscillations observed during the homoepitaxial growth of materials *Zbigniew Mitura*

19:00-21:30   **Regional evening – Gospoda** (*walking distance from the Hotel Prezydent*)

08:30 – 13:00	**Winter sports/Excursion**
12:30 – 14:00	Lunch (Magnolia Restaurant)
14:00 – 16:00	**Registration (Main Hall)**

14:00 – 14:40	**PLENARY LECTURE** **(PIŁSUDSKI ROOM)** CHAIR: JOSE CESAR DE SA
14:00 – 14:40	Metallurgical models for process/product hot rolling applications *Astrid Perlade, Ronan Jacolot, Didier Huin*

14:40 – 14:50   Coffee/tea (Main Hall)

14:50 – 16:50	**PROPERTY ORIENTED DESIGN OF HARD CONSTITUENT HARDNESS AND MORPHOLOGY IN CONTINUOUSLY ANNEALED/GALVANISED DP SHEETS** **(MOŚCICKI ROOM I)** CHAIR: RUDOLF KAWALLA	**COMPUTATIONAL GRIDS AND SUPERCOMPUTERS IN PROCESSES MODELLING** **(MOŚCICKI ROOM II)** CHAIR: WACŁAW KUŚ, ADAM MROZEK	**NUMERICAL MODELS** **(VIP ROOM)** CHAIR: FRÉDÉRIC BARLAT
14:50 – 15:10	Characteristics of metallurgical changes occurring in DP steels during continuous annealing *Roman Kuziak, Krzysztof Radwański, Artur Mazur, Norbert Kwiaton, Jean Christophe Hell, Thierry Iung, Jean-Louis Collet*	Parallel multiscale topology optimization of scaffold structures *Wacław Kuś, Przemysław Makowski*	Crack analyses in conducting and non-conducting piezoelectric solids *Jan Sladek, Vladimir Sladek, Milan Zmindak, Slavomir Hrcek* (198)

15:10 – 15:30	Application of conventional recrystallization and phase transformation models to design of thermal cycle in continuous annealing process *Maciej Pietrzyk, Łukasz Madej, Grzegorz Górecki, Władysław Zalecki, Andrzej Wrożyna, Norbert Kwiaton, Jean Christophe Hell, Jean-Louis Collet*	Real-time finite element method simulations on microcontroller *Waldemar Mucha, Wacław Kuś*	A model for ductile failure at high and low stress triaxiality *Lucival Malcher, Francisco Pires, Jose Cesar de Sa*	
15:30 – 15:50	Adjusting the properties of cold-rolled multiphase steels by variation of thermal cycles *Norbert Kwiaton, Ingwer Denks*	Implementation of heat transfer model for ARM architectures *Krzysztof Bzowski, Łukasz Rauch*	Application of the fully automatic hp-adaptive FEM to elastic-plastic problems *Marta Oleksy, Witold Cecot*	(204)
15:50 – 16:10	Discrete techniques in multi scale modeling of recrystallization in continuous annealing process *Mateusz Sitko, Łukasz Madej*	AMD APU systems as a platform for scientific computing *Filip Krużel, Krzysztof Banaś*	Dealing with periodic boundary conditions for 1D, 2D or 3D isogeometric finite element method *Marcin Łoś, Maciej Paszyński, Lisandro Dalcin, Victor Calo*	(213)
16:10 – 16:30	Cellular Automata modeling of phase transformations during continuous annealing of DP steels *Jarosław Opara, Andrzej Wrożyna, Władysław Zalecki, Roman Kuziak, Krzysztof Radwański, Chandan Halder, Łukasz Madej, Maciej Pietrzyk*	Optimization and application of GPU (185) calculations in material science *Grzegorz Korpała, Rudolf Kawalla*	Evaluation of macroscopic stresses in discrete element models of sintering processes *Jerzy Rojek, Szymon Nosewicz, Katarzyna Pietrzak, Marcin Chmielewski*	(219)
16:30 – 16:50	Modelling of brittle and ductile failure in DP steels *Konrad Perzyński, Andrzej Wrożyna, Łukasz Madej, Roman Kuziak*	Multi-frontal parallel direct solver for (192) one dimensional isogeometric collocation method *Paweł Lipski, Maciej Paszynski*	Macroscopic model with anisotropy based on micro–macro information *Nishant Kumar, Vanessa Magnanimo, Stefan Luding*	

16:50 – 17:20   Coffee/tea (Main Hall)

17:20 – 18:40	MATERIAL PROPERTIES (MOŚCICKI ROOM I) CHAIR: ANDRZEJ KOCAŃDA		GENETIC ALGORITHMS IN MATERIALS DESIGN AND PROCESSING (MOŚCICKI ROOM II) CHAIR: NIRUPAM CHAKRABORTI, JACEK JACKIEWICZ	
17:20 – 17:40	Method to identify rheological constitutive model adapted for powder injection moulding process using inverse method *Dimitri Claudel, Jean-Claude Gelin, Mohamed Sahli, Thierry Barrière*	(226)	The EvoNN and BioGP algorithms and their recent applications in materials research *Nirupam Chakraborti*	
17:40 – 18:00	Development and characterization of polymer mixture (binder) and binder/ metals powder (feedstocks) for powder injection moulding (MIM) *Alexandre, Royer, Jean-Claude Gelin, Thierry Barrière*	(232)	Multiobjective optimization of charging programs for optimal gas flow conditions in the blast furnace *Tamoghna Mitra, Frank Pettersson, Henrik Saxén, Nirupam Chakraborti*	
18:00 – 18:20	Prediction and investigation of fracture initiation in warm forging of martensitic stainless steel with aid of FEM simulation *Łukasz Lisiecki, Piotr Skubisz*		Optimizing the performance of electrically poled polymeric films *Renu Tyagi, Millie Pant, Yuvraj Singh Negi*	(127)
18:20 – 18:40	Multiphase Computational Fluid Dynamics (CFD) modeling study of slopping behavior during basic oxygen steel making (BOS) process *Snehanshu Pal, Vinita Kumari, Rahul Kumar, Natraj Yedla*		Optimization using genetic algorithm and genetic programming applied on cellular automata model for phase transformation of steel during heating *Chandan Halder, Łukasz Madej, Maciej Pietrzyk, Nirupam Chakraborti*	
18:40 – 19:00	Measurement of residual stresses in hot-rolled steel sheets for laser cutting *Wojciech Szymański, Marzena Lech-Grega, Maciej Gawlik, Adam Kokoszka, Adam Chochorowski*	(251)		

20:00   **Conference Dinner – Magnolia Restaurant**

WEDNESDAY, JANUARY 14, 2015

09:00 – 10:20	PLENARY LECTURES (PIŁSUDSKI ROOM) CHAIR: JERZY ROJEK	
09:00 – 9:40	Cyclic shear behavior of austenitic stainless steel sheet *Bert Geijselaers, Ton Bor, Peter Hilkhuijsen, Ton van den Boogaard*	(13)
09:40 – 10:20	New insights into plasticity from atomistic calculations *Siegfried Schmauder, Martin Hummel, Alen-Pilip Prskalo, Stephen Hocker, Peter Binkele*	

10:20 – 10:50   Coffee/tea (Main Hall)

10:50 – 12:10	MICRO-MACRO MODELLING (PIŁSUDSKI ROOM) CHAIR: KRZYSZTOF MUSZKA	
10:50 – 11:10	Multiscale modelling of ferritic-pearlitic steel deformation in rod drawing process by using statistica representation of microstructure *Dmitrii Konstantinov, Krzysztof Bzowski, Aleksey Korchunov, Maciej Pietrzyk*	
11:10 – 11:30	Numerical analysis of the Digital Material Representation behavior under loading conditions: plane strain deformation case study *Joanna Szyndler, Łukasz Madej*	

11:30 – 11:50	Application of Isogeometric Analysis to modeling of elastic deformation in dual phase materials by using Statistically Similar Representative Volume Element on heterogeneous hardware devices *Daniel Bachniak, Łukasz Rauch*	
11:50 – 12:10	DeepZoomImage, OpenSlide and IIP - facilitating the display and pre-processing of large bitmap images *Kamil J. Dudek, Oskar Bożek*	
12:10 – 12:30	Modelling of clinching joint pull-out test (239) *Zbigniew Gronostajski, Sławomir Polak, Bartosz Bartczak*	

12:15 – 14:00   Lunch (Magnolia Restaurant)
14:30   Bus departure to Kraków

There are two alternative options for spending free time on Tuesday morning:

Winter sports:
Minibus transportation to the ski-resort - Jaworzyna Krynicka - will be available at 08:30 in front of the Hotel Prezydent. Renting skies and ski boots is possible.

Excursion:
Walking Tour to Parkowa Mountain.
The trip includes: funicular railway to the Summit of Parkowa Mountain (741 above the sea level), astonishing views of Southern slopes of the Beskid Krynicki, walking down the slope with many attractions along the track, namely: the Church of the Transfiguration (first church in Krynica-Zdrój), ponds (Czapli Staw and Łabędzi Staw), Statue of Virgin Mary – Queen of the wells of Krynica, Michasiowa Polana with "Bocianówka" and "Altana Michasiowa". The trip to the town centre will be guided by an English-speaking guide, and it will include numerable attractions, such as Old Bathrooms, Old Spa House errected in Neo-Renaissance style, The Concert Shell, The New Home Spa, Nikifor Krynicki's Museum and Art Gallery "Romanówka" (includes the ticket to the museum), the new church, Nikifor Krynicki Monument, Jan Kiepura Monument and other.
The excursion will take 4 hours.
Start of the event: 08:30.
Important requirements: warm winter shoes and clothes!

Krynica-Zdrój
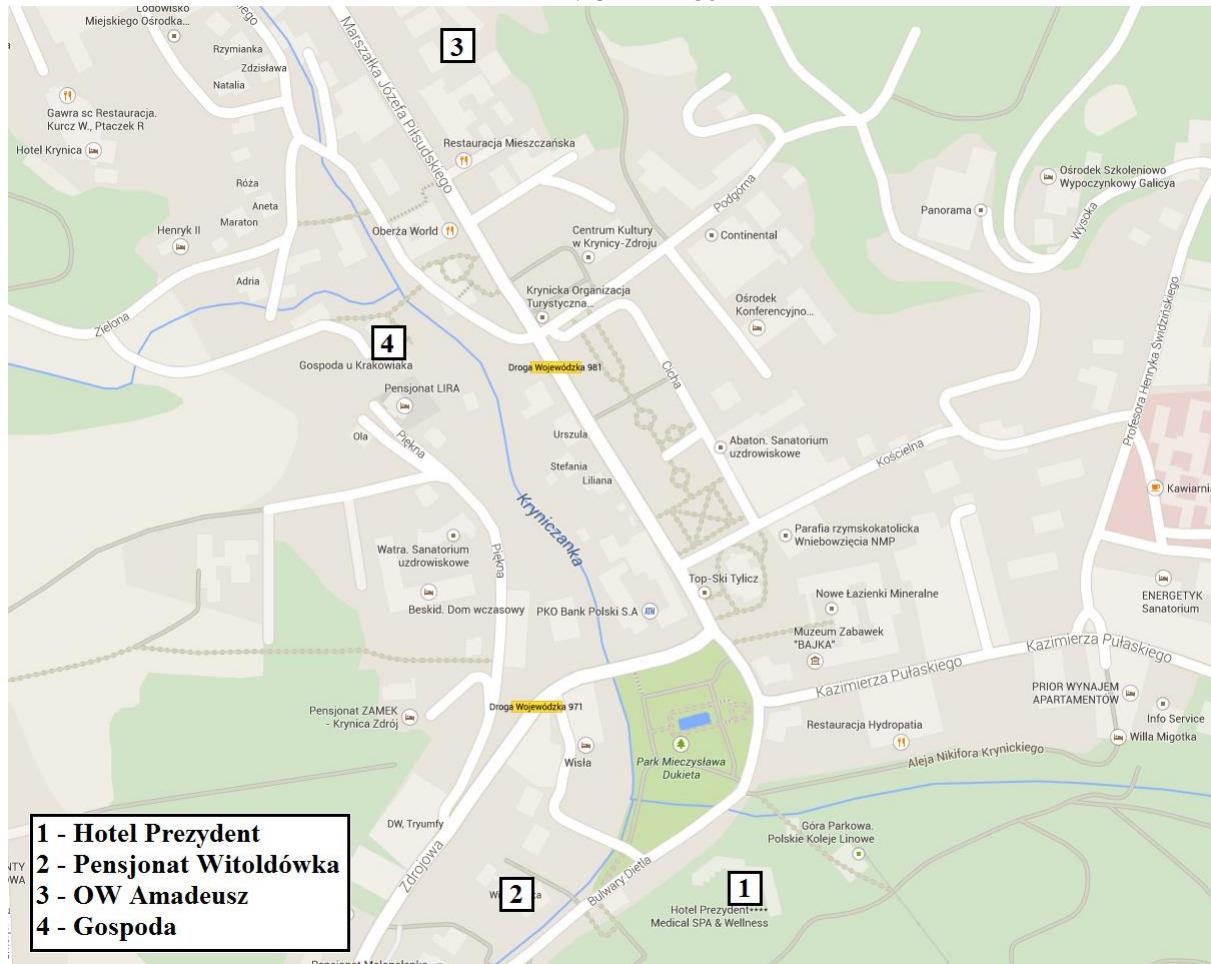
1 - Hotel Prezydent
2 - Pensjonat Witoldówka
3 - OW Amadeusz
4 - Gospoda