



MS&IA

Modern Steels & Iron Alloys
INTERNATIONAL CONFERENCE · WARSAW 2023

28–30 June 2023 Warsaw, Modern Steels and Iron Alloys MS&IA'2023
DESIGN - TECHNOLOGIES - PROPERTIES - APPLICATIONS

PROGRAM

Wednesday, 28 June 2023	
9 ³⁰ ÷ 11 ⁰⁰	REGISTRATION & COFFEE
11 ⁰⁰ ÷ 11 ¹⁰	Opening: Professor Anna Boczkowska: Dean of the <i>Faculty of Materials Science and Engineering</i> , Warsaw University of Technology and dr Robert Cacko Director of the <i>Institute of Manufacturing Technologies Faculty of Mechanical and Industrial Engineering</i>
	Session I: Innovative Heat Treatments of Modern Steels <i>Chairperson: Professor Wolfgang Bleck</i>
11 ¹⁰ ÷ 11 ⁵⁰	Invited lecture: Adam Grajcar: Novel Thermomechanical Process Designs for Exploring the Potential of Hot-Rolled Medium-Mn Steels
11 ⁵⁰ ÷ 12 ¹⁵	Mateusz Morawiec, Aleksandra Kozłowska, Adam Grajcar: Tailoring Stability of Retained Austenite in Medium-Mn Steel Via Double-Step Intercritical Annealing
12 ¹⁵ ÷ 12 ⁴⁰	Adam Skowronek, Adam Grajcar: Experimental and Computational Approaches to Optimization of Intercritical Annealing Process of 5Mn Steel
12 ⁴⁰ ÷ 14 ⁰⁰	LUNCH BREAK & COFFEE
	Session II: Modern bainitic steels <i>Chairperson: Professor Adam Grajcar</i>
14 ⁰⁰ ÷ 14 ⁴⁰	Invited lecture: Aleksandra Królicka, Francisca Garcia Caballero: Control of Thermal Stability of Bainitic Structures Using Two Different Chemical Composition Design Approaches
14 ⁴⁰ ÷ 15 ²⁰	Invited lecture: Radhakanta Rana, Carlos Garcia-Mateo, Erick Cordova-Tapia: Ductile Ultrahigh Strength Hot Rolled Bainitic Steels with Good Toughness
15 ²⁰ ÷ 15 ⁴⁵	Krzysztof Wasiak, Monika Węsierska-Hinca, Emilia Skołek, Andrzej Wieczorek, Wiesław Świątnicki: Effect of Bainitization – Quenching & Partitioning Heat Treatment on Microstructure Evolution And Properties of Carburized Steel
15 ⁴⁵ ÷ 16 ¹⁰	Szymon Marciniak, Adam Gołaszewski, Emilia Skołek, Krzysztof Wasiak, Wiesław Świątnicki, Andrzej Wieczorek: Practical Applications of Nanobainitic Steels
16 ¹⁰ ÷ 17 ⁰⁰	COFFEE BREAK
16 ¹⁰ ÷ 18 ⁰⁰	POSTER SESSION



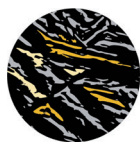
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Thursday, 29 June 2023	
8 ⁰⁰ ÷ 9 ⁰⁰	REGISTRATION & COFFEE
	Session III: Advanced High Strength Steels – Manufacturing, Microstructure and Properties Chairperson: Professor Massimo Pellizzari
9 ⁰⁰ ÷ 9 ⁵⁰	Keynote lecture: Wolfgang Bleck: Improved Balance of Conflicting Mechanical Properties in Advanced High Strength Steels
9 ⁵⁰ ÷ 10 ¹⁵	Mateusz Morawiec, Adam Grajcar: Microstructural Effects of Dynamic Tensile Deformation in Ultra-High Strength Bainitic and Martensitic Multiphase Steels With 3-5% Mn Addition
10 ¹⁵ ÷ 10 ⁴⁰	Mikhail Seleznev, Christoph Renzing, Matthias Schmidtchen, Ulrich Prahll, Horst Biermann, Anja Weidner: Improvement of Bond Strength in TRIP/TWIP Laminated Composites with Nickel Interlayer
10 ⁴⁰ ÷ 11 ⁰⁰	COFFEE BREAK
	Session IV: Ferrous Alloys & Additive Manufacturing Chairperson: Professor Marcin Górný
11 ⁰⁰ ÷ 11 ⁴⁰	Invited lecture: Massimo Pellizzari: Design and Properties of Steels Produced by Additive Manufacturing
11 ⁴⁰ ÷ 12 ²⁰	Invited lecture: Janusz Krawczyk: The Review of Steels and Iron Alloys. Structural and Exploitation Analysis Results
12 ²⁰ ÷ 12 ⁴⁵	Bartosz Morończyk, Maciej Skowroński, Mateusz Ostrysz, Dawid Myszka, Tomasz Choma, Bartosz Kalicki, Łukasz Żrodowski: Production of Metallic Powders From Iron Alloys by Ultrasonic Atomization
12 ⁴⁵ ÷ 14 ⁰⁰	LUNCH BREAK & COFFEE
	Session V: Cast Steels and Iron Alloys Chairperson: Professor Janusz Krawczyk
14 ⁰⁰ ÷ 14 ⁴⁰	Invited lecture: Marcin Górný, Magdalena Bork, Tomasz Tokarski: The Quantitative Evaluation of Graphite Dispersion in Ductile Iron
14 ⁴⁰ ÷ 15 ⁰⁵	Magdalena Bork, Dawid Buczak, Marcin Górný, Magdalena Kawalec: The Influence of Nickel on Structure and Mechanical Properties of Austenitic Ductile Iron Castings
15 ⁰⁵ ÷ 15 ³⁰	Dawid Myszka, Andrzej Wiczorek, Jakub Troska: The Surface Layer of Castings Made of Ausferritic Ductile Iron
15 ³⁰ ÷ 16 ⁰⁰	COFFEE BREAK
15 ³⁰ ÷ 17 ⁰⁰	POSTER SESSION
16 ⁰⁰	MEETING OF THE SCIENTIFIC COMMITTEE
20 ⁰⁰	CONFERENCE DINNER Hotel Novotel Centrum, Marszałkowska 94/98, Warsaw



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Friday, 30 June 2023	
9 ⁰⁰ –9 ⁴⁵	REGISTRATION & COFFEE
	Session VI: Implementation of Advanced Steels and Innovative Heat Treatments into the Industry Chairperson: Dr Radhakanta Rana
9 ⁴⁵ –10 ¹⁰	Tomasz Kaźmierski, Janusz Krawczyk, Łukasz Frocisz: Effect of Plastic Deformation on the Microstructure of DP600 Steel Obtained by Cooling with Isothermal Pause at the Intercritical Temperature
10 ¹⁰ –10 ³⁵	Tomasz Hamryszczak, Tomasz Śleboda, Grzegorz Korpała: The Influence of Controlled Cooling on the Properties and Microstructure of Hot Rolled HSLA Steel
10 ³⁵ –11 ⁰⁰	Kamila Ścibisz, Janusz Krawczyk: Magnetic Properties of Grain-Oriented High-Silicon Steel Products
11 ⁰⁰ –11 ²⁰	COFFEE BREAK
	Session VII: Processes Combining Nitriding and Heat Treatment of Steels Chairperson: Professor Dawid Myszka
11 ²⁰ –11 ⁴⁵	Adam Gołaszewski, Szymon Marciniak, Emilia Skolek, Monika Węsierska-Hinca, Krzysztof Wasiak, Wiesław Świątnicki: Nitriding Nanobainitic Steels with Limited Temperature Stability
11 ⁴⁵ –12 ¹⁰	Piotr Pawluk, Marcin Pisarek, Wiesław Świątnicki: Effect of Heat Treatment Operations on Surface Composition of H11 (X37CrMoV5-1) Steel and Its Influence on Gas Nitriding Results
12 ¹⁰ –12 ²⁰	CLOSING
12 ²⁰ –13 ³⁰	LUNCH BREAK



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POSTER SESSION

AUTORS	TITLE OF PRESENTATION
Aleksy Figurski, Dawid Myszk	Iron alloy compliant mechanisms in prosthetics
Krzysztof Jurko	Formation of multiphase microstructure in K360 cold work tool steel using modern heat treatment processes
Ewelina Kapuścińska, Krzysztof Roźniatowski	Effects of nanostructuring parameters on distortion of bearing rings after industrial treatment
Małgorzata Łazarska, Zbigniew Ranachowski	The use of dilatometry with acoustic emission to analyze the characteristics of phase transformations in 42CrMo4 alloy steel
Robert Saraczyn, Martyna Deroszewska, Mateusz Ostrysz, Dawid Myszk	Percolation phenomenon in micro- and macroscale for 3D printed iron alloys
Adam Szyszko, Szymon Marciniak, Emilia Skołek, Jeszy Sobiecki	Analysis of phase transitions occurring in austempered steel during surface hardening processes
Michał Tacikowski, Krzysztof Chmielarz, Monika Dryk, Szymon Marciniak, Krzysztof Wasiak, Monika Węsierska-Hinca	The effect of hybrid treatment combining high temperature gas nitriding and nanobainitisation on the properties of K360 tool steel
Michał Król, Monika Węsierska-Hinca	Experimental approach of strengthening by surface nitriding of 67SiMnCr6-6-4 steel with nanobainitic structure