



**FOUNDRY REVIEW**  
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**-SUMMARIES-**

Z. ZOVKO BRODARAC, A. MAHMUTOVIĆ, S. ZELJKO, L. ZELJKO

**EFFICIENCY OF NUMERICAL SIMULATION IN OPTIMIZATION OF CASTING PRODUCTION**

Optimizing the production of castings today implies an understanding of solidification and the interaction of all influential parameters, as well as the influence of applied casting technology. Casting technology is highly dependent on the knowledge of experts working out the technological process.

Grey cast iron is still the most important casting material with over 70% of the total world production. Grey cast iron has a dark grey colour at fracture due to a graphite segregation microstructure based on silicon addition in order to stabilize carbon in the form of graphite as opposed to iron carbide. Grey cast iron typically has a composition of 2.5 wt.% – 4.0 wt.% carbon and 1.0 wt.% – 3.0 wt.% silicon. The microstructure of grey cast depends on chemical composition and is characterized by graphite lamellae that depend on the solidification process parameters (cooling rate). The size and type of graphite lamellae significantly affect the desired properties. Grey cast iron found its application in many industrial and everyday purposes mainly where high stiffness, machinability, vibration dampening, high heat capacity, and high thermal conductivity are needed. Products such as heating elements (stoves and fireplaces) in fittings for water systems, the process industry, energy, automotive industry (cylinders, pistons, brake discs, gearbox cases, internal combustion engine cylinder blocks), and decorative castings and cookware are very well-known.

KATARZYNA LISZKA, WITOLD DOBOSZ

**GIFA FAIRS IN SOUTHEAST ASIA 2023**

The Foundry Chamber of Economy together with the Polish Foundrymen Technical Association organized on 18–24 September 2023 the technical trip to GIFA Fairs Southeast Asia 2023, which took place in Bangkok in Thailand. It was an exceptional occasion to make ourselves acquainted with the offer of casting companies in Asian markets --- some months after the largest in the world casting fairs, GIFA 2023 on June 2023 in Düsseldorf.

## **REPORT FROM THE 63<sup>RD</sup> INTERNATIONAL FOUNDRY CONFERENCE PORTOROŽ 2023**

This year, 63-rd International Foundry Conference Portorož 2023 and accompanying it the Exhibition of Slovenic Foundry took place in Portorož in the Congress Center of the Slovenija Hotel on 13–15 September 2023.

53 representatives from 15 countries: Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Nederland, Norway, Poland, Slovakia, Serbia, Spain, Sweden, Switzerland and Great Britain took part in the Conference.

### **EUROCAST INDUSTRIES OPENED THE WORKING PLANT**

Eurocast Industries Company operates in the market since 2014.

The Company focuses its operations on supplying mechanically worked castings, forgings and welded structures. Presently the Company employs 40 persons, out of which 30 in the Polish branch and 10 in the English one.

Answering growing demands of customers concerning a quality, shortening realisation times as well as improving the competitiveness the Eurocast Industries took the decision of opening its own, modern mechanical working plant in Morawica, which is only 2 km from Balice Airport in Cracow.

### **SEMINAR: „CAPTURE AND STORAGE OF CARBON DIOXIDE. REPORTING THE EMISSION OF CARBON TRACES – FOUNDRY ENGINEERING”**

On 29<sup>th</sup> of September 2023, in the rooms of the Energy Centre of AGH University of Science and Technology took place the first seminar: „Capture and storage of carbon dioxide. Reporting the emission of carbon traces – FOUNDRY ENGINEERING”

This seminar was organised by: the Polish Foundrymen Technical Association, Energy Centre and the Faculty of Foundry Engineering of AGH.

The aim of organising this Seminar was the presentation of necessary information needed to understand technical and economic processes of the capture and storage of carbon dioxide as well as obtaining knowledge, within the indispensable range, for assessing investment expenditures and foundry operational costs.

### **AUTHORS MEETING OF THE AUTHORS AND REVIEVERS OF THE FOUNDRYMAN HANDBOOK VOL. II**

The newest, second volume of the Foundryman Handbook, entitled: Technology and Organisation consists of 15 chapters, which were jointly created by 42 authors and 16 revievers. Altogether, there are nearly 1300 pages.

The meeting of Authors and Revievers of the Foundrymen Handbook editorial took place in the main lecture hall of the Faculty of Foundry Engineering of AGH University of Science and Technology in Cracow on September 27<sup>th</sup> 2023.

## **CEREMONIAL INAUGURATION OF THE 105<sup>th</sup> ACAMEMIC YEAR IN AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

„We are opening today the consecutive academic year, which promises to be even more hardworking than the previous one, but we are aware of enormous duties and challenges which are in front of us. According to our tradition, the Inauguration is the great holiday of the University, celebrated by professors, students, employees together with our graduates, partners and friends from industry and economy from the country and from abroad. I deeply believe, that the coming year will be full of satisfaction, joy and successes” – said professor Jerzy Lis, the Chancellor of AGH, during the inauguration of the academic year 2023/2024, which took place on October 4<sup>th</sup> 2023.

MAREK SKOWRON

### **MACHINES FOR CHOPPING MEAT FROM POLISH FOUNDRIES**

A short history of the development of meat mincers, which – in the present shape - are known since nearly 140 years is presented in this paper. These small devices, mainly built of cast elements, are very important in the process of feeding people.

First constructions of such devices and also the machine developed by John Baker, which is applied up today, are described. The history of the production of such devices by Polish foundries is also presented.