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**-SUMMARIES-**



KATARZYNA LISZKA

**THE ASSOCIATION – MY SECOND LOVE. HISTORY OF THE THIRTEENTH PRESIDENT OF STOP**

„Tomorrow is today – only that it is tomorrow”. These are words of – known to everybody – the Polish writer Sławomir Mrożek, close friend of Tadeusz Franaszek, who were pupils of St Nicolaus primary school and in 1948 as young boys „Nowodworczycy” passed the Secondary School Leaving Examination in the I-st National Secondary School, named after Bartłomiej Nowodworski in Cracow, not realising that both of them will go down in the history of Poland, one as a writer and the second as a foundry man – association activist.

The article presents the life and professional work of Tadeusz Franaszek.

ANDREAS BAIER I STEPHAN GIEBING

**HOLLOTEX\* EG RUNNER ST – LIGHT ALTERNATIVE FOR THE CERAMIC INLET SYSTEMS NOW AVAILABLE ALSO FOR CAST STEEL!**

HOLLOTEX EG Runner, introduced in the year 2009 revolutionised a construction of inlet systems for manually formed iron castings. It eliminated the need of using ceramic elements and achieved popularity in the European and American markets of cast iron production. However, it had limitations concerning high pouring temperatures, typical for cast steel foundry practice.

In order to find a remedy for that, the HOLLOTEX EG Runner ST with optimised contents and refractory coating was developed.

In addition, shapes of components were modified to improve a liquid metal flow.

JERZY S. ZYCH, JAN MOCEK

**MOISTURE CONTENT OF GREEN SANDS – THE FACTOR DETERMINING SUSCEPTIBILITY TO BURN-ON AND PITTING ON IRON CASTINGS**

Defects of crude surfaces of iron castings produced in sand moulds, among which dominate burns-on and pitting, are universal and not to be eliminated. They belong to the group of the easiest detectable defects in visual assessments, which decide about the aesthetics of products, a very important general indicator of the

casting quality. Although these defects are repairable but since their removal is very tiresome, it is only possible to limit them. The results of laboratory investigations and analysis of industrial processes concerning the influence of a moisture content of bentonite moulding sands on forming burn-on and pits on iron castings, are presented in the paper. The influence of a moisture content of sands on the chemical atmosphere inside the mould cavity in connection with its influence on the tendency for burn-on and pits, is analysed. The application of new indicator, which could characterise the sand susceptibility to form chemical burns-on, is proposed. It was called: simplified indicator of oxygen potential of sand moistness (WPT). This indicator is determined as the ratio of sand moistness (W) to the content of lustrous carbon carrier, determined in the ignition loss test (S). Its value oscillates around 1.0 and below. Generally, the higher value of this indicator the higher inclination for burns and pits of a chemical character. The data and examples of surface defects known from industrial practice in relation with the sand moistness analysis and the WPT indicator value, are also presented in the hereby publication.

R. DEIKE

### **THE SPECIAL IMPORTANCE OF METALS IN A CIRCULAR ECONOMY**

When 17 Goals of Sustainable Development were passed by the General Assembly of the United Nations in the year 2015, they were still formulated as a vision of obtaining better world of a higher prosperity and smaller raw materials consumption. Now we are entering into the times when parts of these visions are becoming the law. Of the same importance as a pressure on sustainable development and promotion of proper means of obtaining this aim, are certain anxieties whether something - which can be easily described, defined by law and decided by administrations of political institutions and finance companies - is always technically possible. After all, even a circular economy has certain scientific and technological limitations, which must be accepted from the point of view of the economic efficiency. A development in the sector of metals indicates, that in traditionally industrial societies in Europe and Japan, structural changes from the industrial to the service society occurred. It can be noticed, that in some sectors a dematerialization of the global economic increase occurred in the past. The goal of sustainable future is, first of all, the creation of global prosperity by means of the economic development, at - as low as possible - consumption of raw materials, energetic and not energetic. New activity fields will be developing, in which used products will be reclaimed and introduced into the market as renewable products (with the proper quality warranty). The future development of global raw materials markets will be determined by the economic development of China, in a short to medium time. It can be assumed, that China will change into the service society in the coming years. As the result of such development, the raw materials consumption will be similar to the one, which occurred at the beginning of 70-s (of the XX century) in the traditionally industrial societies. This means, that moderate increases of the world consumption of raw materials should be expected in a short to medium period.

RAFAŁ DAŃKO, WOJCIECH NOWAK, MAGDALENA STROJNY, PAWEŁ GŁADYSZ

## **CARBON CAPTURE, UTILIZATION AND STORAGE. REVIEW OF SOLUTIONS AND A PERSPECTIVE FOR POLAND**

The increase of interests concerning the carbon capture, utilization and storage (CCUS) is seen current years in such industry sectors, in which other methods of a significant reduction of carbon dioxide (CO<sub>2</sub>) are not possible, technologically inaccessible or too costly. In order to limit the global warming and to achieve the determined climatic goals, the technology scale from the CCUS chain, according to the most recent analyses, must increase to gigatons of sequestered CO<sub>2</sub> annually. CCUS technologies are often mentioned also in a context of striving to achieve zero CO<sub>2</sub> balance to the year 2050. Innovatory solutions based on bioenergy production, joined with the capture of CO<sub>2</sub> or a direct removal of carbon dioxide from the atmosphere, can constitute a valuable contribution in achieving the climatic neutrality by generating the so-called 'negative' emissions. The necessity of implementations of technologies from the CCUS chain is often emphasised by recognized international organisations dealing with problems of new technologies, energy and climate changes. In relation to that, the hereby paper concerns solutions in the field of CCUS chain technology and focuses on the analysis of the current state with taking into account the national perspective.

### **EXECUTIVE CIRCLE OF THE CASTING INDUSTRY: SUCCESSFUL INITIAL IGNITION**

Creating the space for common reflection concerning the future of the casting industry sector and networking at the highest level – was the declared aim of the Executive Circle meeting, to which Nurnberg Messe, the organizer of EUROGUSS Fairs, invited the main decision makers from the whole value chain to Konigstein in the Taunus region, on October 4 and 5.

Nearly 60 prominent minds, from the sector and from scientific circles of the world, accepted the invitation and came to discuss with a passion the available means to assure better future for the sector. At the end of this event the optimistic spirit was felt 'in the air'.

The initial situation was summed by Johannes Messer: 'From nearly 50 years we did not have such stagnation in the sector', "Since the end of 2018 the sector did not have any increases'. – 'We have to fight for our participation. Since we have the strongest network in Europe, we must utilise it for the transformation' – these were the explanation statements provided by the recognized expert and consultant of the sector.

### **METAL FAIRS AND OTHER, RELATED TO THE 'INDUSTRIAL AUTUMN', WILL BE AGAIN IN THE KIELCE FAIRS CALENDAR FOR THE YEAR 2024!**

Metal Fairs, from many years, are gathering exhibitors as well as visitors from the whole world connected with the metallurgy sector. Every two years the town of Kielce is becoming the world capital of foundry engineering and the organised here Fairs are one of the most important events of this part of Europe. The international character of this event causes that visitors are gladly coming to Kielce, to exchange the

obtained experiences and to make themselves acquainted with technological novelties of the sector. However the foundry sector, in a similar fashion as many other sectors, must think about changes which will allow the adjustment to the current conditions and trends, as to determine the strength of the world economy.

The International Fairs of Casting Technology METAL will be organised for the 25-th time on September 24 to 26, 2024 .

KATARZYNA LISZKA, WITOLD DOBOSZ

#### **A GLANCE AT THE POLISH FOUNDRY INDUSTRY. THE CURRENT STATE AND PROGNOSSES FOR THE FUTURE**

How the European foundry manages with the crisis? What influence had economic changes on the casting production in Europe? Where – in all of these – is Poland now? What should be expected and what Polish foundries will be facing? Answers to these and other questions You will find in the hereby paper.