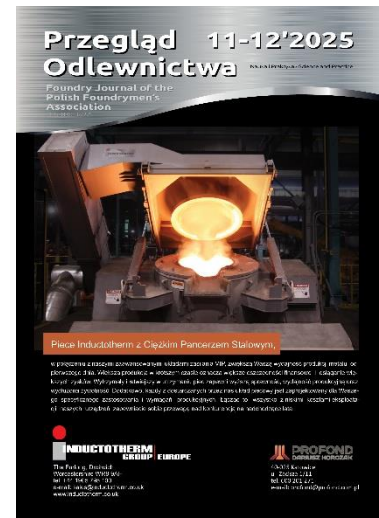


**FOUNDRY REVIEW**  
**11-12'2025**  
**-SUMMARIES-**



ŁUKASZ RAKOCZY, RAFAŁ CYGAN

**CAST NICKEL-BASED SUPERALLOYS FOR AEROSPACE APPLICATIONS – MICROSTRUCTURE AND SELECTED PROPERTIES**

In the coming years, the aerospace industry will focus on producing critical engine parts made from heat-resistant nickel-based superalloys. A primary area of research will be the enhancement of investment casting technology to enable the fabrication of components with complex geometry, high purity, and controlled microstructures. Improving metallurgical processes and developing modern quality control methods are becoming increasingly important. Another significant trend is the drive for greater production efficiency, achieved through the automation and robotization of casting processes. The integration of real-time monitoring and data analysis systems will facilitate more effective process management, shorten production cycles, and lower manufacturing costs. The work was carried out as part of the project “Implementation of production of cored aircraft castings with a dendritic-columnar structure produced by the directional solidification method” (POIR.01.01.01-00-1335/20) financed by the National Centre for Research and Development (Poland).

KATARZYNA CIEŚLIK

**CARBON BORDER ADJUSTMENT MECHANISM (CBAM): END OF THE TRANSITION PERIOD AND START OF THE DEFINITIVE PHASE – WHAT DOES 2026 HOLD FOR COMPANIES?**

From January 2026, the Carbon Border Adjustment Mechanism (CBAM) will enter into its definitive phase. It is a crucial change for thousands of Polish importers – the mechanism goes beyond being solely a reporting tool and becomes a real operational and financial liability. The most important information: without the status of an authorised CBAM declarant, the import of goods covered by this mechanism will not be possible, and shipments may be stopped at the border. For companies, it means that immediate action is needed to secure the continuity of the supply chain.

**35<sup>TH</sup> ANNIVERSARY OF SILUM SP. Z O.O. FROM THE FOUNDERS' PASSION TO BECOMING THE LEADER OF THE POLISH FOUNDRY INDUSTRY INTERVIEW WITH THE FOUNDERS AND OWNERS OF SILUM LTD. – KORDIAN ZAWADZKI, WIESŁAW WALCZAK, PAWEŁ ZAWADZKI AND IGOR ZAWADZKI**

SILUM Sp. z o.o., a foundry located in Opojowice near Wieluń, is an example of a company that has thrived consistently for 35 years, rooted in Polish capital and family values. The origins of the company date back to 1990 when three engineers — Kordian Zawadzki, Wiesław Walczak, and Paweł Zawadzki — with the participation of legal advisor Danuta Zawadzka signed the founding agreement. A few months later, they launched the production of the first pressure and die-castings made from non-ferrous metal alloys. Today, SILUM is a modern company with a strong position in the household appliances and automotive industries. It collaborates with leading Polish research centers and is actively involved in the activities of the Polish Foundrymen's Association [Stowarzyszenie Techniczne Odlewników Polskich]. In celebration of 35<sup>th</sup> anniversary, we are interviewing the shareholders and founders of the company.

**THE ROLE OF SCIENCE IN INDUSTRIAL INNOVATIONS, ON THE EXAMPLE OF COOPERATION BETWEEN THE LODZ UNIVERSITY OF TECHNOLOGY AND THE SILUM SP. Z O.O. (LTD) FOUNDRY AN INTERVIEW WITH KONRAD WRZAŁA, TECHNICAL DIRECTOR OF THE SILUM COMPANY, AND PROFESSORS FROM THE FACULTY OF MECHANICAL ENGINEERING AT THE LODZ UNIVERSITY OF TECHNOLOGY: CEZARY RAPIEJKO, BOGUSŁAW PISAREK AND GRZEGORZ GUMIENNY**

The cooperation of universities with industries has an increasing role in the development of an innovative economy. Its main objective is to transfer knowledge and technology from research centres to companies and to jointly develop modern solutions that respond to the real needs of companies. The commitment of academic staff and access to specialist research facilities enable universities to support companies in many areas, such as process optimisation, implementation of new technologies and improvement of production efficiency. Such partnerships become an example of the practical implementation of scientific potential in industrial development and support in creating competitive advantage for companies. An example of such effective cooperation is the project being undertaken by the University of Technology and Silum Sp. z o.o. (Ltd), a pressure die-casting foundry, which has resulted in concrete, positive implementation effects at the factory.

KATARZYNA LISZKA, WITOLD DOBOSZ

**THE FOUNDRY INDUSTRY IN POLAND: BALANCE FOR 2024, CHALLENGES AND DIRECTIONS FOR DEVELOPMENT**

The years 2020–2024 were an exceptionally dynamic period for the global and Polish foundry industry, both with regard to economic and structural changes. The COVID-19 pandemic, subsequent supply chain disruptions, the war in Ukraine, and sudden fluctuations in energy and raw material prices have significantly affected the condition of the industry.

## **CASTFORGE 2026 – THE GROWTH, INTERNATIONAL CHARACTER AND STRENGTH OF INNOVATION**

On the days 9–11 June 2026, at the Messe Stuttgart, the fourth edition of the fair, which is one of the most important events in the industry, will be held. Just eight months before the beginning of this specialised trade fair, the fairgrounds were almost sold out. Around 500 exhibitors from over 30 countries will present their solutions covering the entire value chain – from raw material production through machining to components ready for assembly. In this way, CastForge confirms its position as the central European platform for castings and forgings, including machining. A significant increase in the number of exhibitors, extensive international reach and an expanded framework programme highlight the development direction of the fair: more expertise, more networking, more future.

JANUSZ ZATOŃ

## **WULKAN SA BEGINS THE PRODUCTION OF BRAKE DISCS**

WULKAN SA is opening another chapter in its history. In the fall of 2025, the company launched a fully automated line for machining brake discs. The factory boasts a rich tradition of over 130 years of casting production. Currently, it specializes in the production of gray iron castings and machining. WULKAN offers its customers comprehensive service – from design and tooling, through raw casting, to the finished, machined product.