

GERMANY/ITALY

# ALPHA CERAMICS: Development Centre and Pilot Plant Testing Facility for Technical Ceramic Components

ALPHA CERAMICS GmbH/DE is a subsidiary of LAEIS/LU – a member of SACMI Group/IT – and has established itself as a competent, cooperative and reliable partner in ceramic manufacturing, as supplier of kiln furniture of all types as well as service provider for contract production of non-oxide and oxide ceramics, intermediate products and components.

Andrea Grandi (AG) – General Manager Business Unit Advanced Technologies SACMI – and Roel van Loo (RvL) – TEAM by SACMI Coordinator and Production Manager at ALPHA CERAMICS – gave us insights on the business strategy.



*Fig. 1*  
Andrea Grandi, General Manager Business Unit  
Advanced Technologies SACMI



*Fig. 2*  
Roel van Loo, TEAM by SACMI Coordinator and  
Production Manager at ALPHA CERAMICS

**CA:** ALPHA CERAMICS is already more than 20 years in the market. Where are its roots?

**RvL:** Correct, in September 1998, ALPHA CERAMICS GmbH was founded as a joint venture between LAEIS and GHI (Aachen University/DE) with its base in Aachen. LAEIS held

the majority stake in this joint venture which, on the one hand should serve as a testing center for machine- and process developments for LAEIS, and on the other hand should continue as a practice-oriented training center for students at the GHI.



Fig. 3  
Vacuum-pressed mullite slabs



Fig. 4  
Refractory products and transparent ceramics

Since the beginning, it was planned that the new company also would independently offer its expertise and services to external clients. In 2003, while all GHI shares were taken over by LAEIS, ALPHA CERAMICS however, remained closely associated with the GHI. Innumerable students had the opportunity to get to know, in one or another form, the operational procedures in ceramic production. In the same year, LAEIS BUCHER GmbH was split into several companies, and LAEIS BUCHER Technology GmbH respon-

sible for ALPHA Ceramics was acquired in the following year by SACMI IMOLA S.C. and renamed to LAEIS GmbH.

**CA:** ALPHA CERAMICS is offering a particular range of kiln furniture. What is making them so special?

**RvL:** Following the shutdown of Sphinx Technical Ceramics B.V. in Maastricht/NL, ALPHA CERAMICS took over parts of its technical know-how and started the manufacture and supply of specialty refractory products, primarily kiln furniture for former Sphinx customers.

Especially in the expanding market segment for technical ceramics, demands have grown enormously in respect of application temperature, cycle time and number, energy consumption and quality standards. This situation leads to the fact that kiln furniture has to be adapted to these specific requirements in terms of material properties and product design. In the kiln furniture segment but also in other areas, ALPHA CERAMICS develops and optimises both, materials and finished products that are subsequently placed into the market.

A special role in process engineering development at ALPHA CERAMICS is played by the, so-called vacuum press technology. This process, crucially developed together with LAEIS enables crack- and layer-free pressing of complex and large-size components by preventing air pockets in the pressed parts. For many newly developed products, especially high-performance ceramics, this problem is not easy to tackle with the conventional press technology without big sacrifices in throughput rate and effectiveness.

**CA:** Is now the focus of ALPHA CERAMICS on Technical Ceramics only?

**AG:** After the acquisition of LAEIS by SACMI, there was a shift in the strategic orientation in the direction of Technical Ceramics and high-performance ceramics while activities for fine ceramics were taken over by the test center in Imola/IT, which is specialised in this sector.

Within the SACMI Group, ALPHA CERAMICS plays a key role as a significant member of the TEAM by SACMI Alliance that includes also the SACMI companies LAEIS, RIEDHAMMER/DE, SAMA/DE and GAIOTTO/IT. All are involved with different aspects of the production of Technical Ceramics and have therefore teamed up with each other to strengthen their position. Cooperation in this Alliance creates new possibil-



Fig. 5  
Mullite cassettes for the elevator kiln

ities for utilising synergistic effects, as a result of which it is possible to offer customers tailored solutions for specific applications to the global market.

Technical Ceramics is just one of the possible markets: the business model is solid and could be extended or moved to others where customers could benefit from the know-how and synergies within the SACMI Group companies.

**CA:** Which competences will be developed further?

**AG:** ALPHA CERAMICS employs highly trained ceramic engineers and other employees who have gained their own experience in industrial production on one hand and on the other hand can draw on the wealth of experience of a large number of already realised developments.

This know-how and experience are used both for product and process developments and optimisations. Furthermore, the team of ALPHA CERAMICS has access to the knowledge of SACMI Group and all SACMI development centres worldwide. These are special competences that we can bring in to partnership projects with manufactures of technical ceramics and/or research institutes all over the world.

**CA:** So, intends SACMI to push also its TEAM activities to a higher level?

**AG:** Yes, definitely! It is again a matter of capitalizing the know-how and synergies among the companies in the Group. Ten years ago, SACMI entered into the powder metal market and designed a dedicated range of highly sophisticated hydraulic presses. The expertise created and the technology developed can now be applied to the technical ceramic market that is for sure still growing and has a high potential in the years to come.

Recently, SACMI and LAEIS jointly developed the first electric press within the SACMI Group: this machine will offer us new opportunities especially there where very strict part tolerances are required. For example: hard metal cutting tools. This, together with the well-known firing technology of RIEDHAMMER and the expertise SAMA has in the field of their pressure-casting machine's combined with the SACMI competence for body-preparation, TEAM is able to supply and contribute to complete system solutions for technical ceramic manufacturers. TEAM approaches specific client needs with a comprehensive range of innovative skills that ensure the best technical and economical solutions available today. And there is still room for improvement!

**CA:** Are you positive about the future regarding the current global economic situation?

**RvL:** Sure, the global economic situation will force producers to revise their production and shut down lines which are not profitable due to decreasing batch volumes. Especially in this situations, ALPHA CERAMICS could be a reliable partner. Over the last two decades, the company has specialised itself in this kind of production.

The machinery for material preparation, shaping and thermal treatment at ALPHA CERAMICS is available also for contract production for customers. This provides the possibility to supply products for a limited time, e.g. for testing the market acceptance or to bridge the time until a shut down production can be put in operation again.

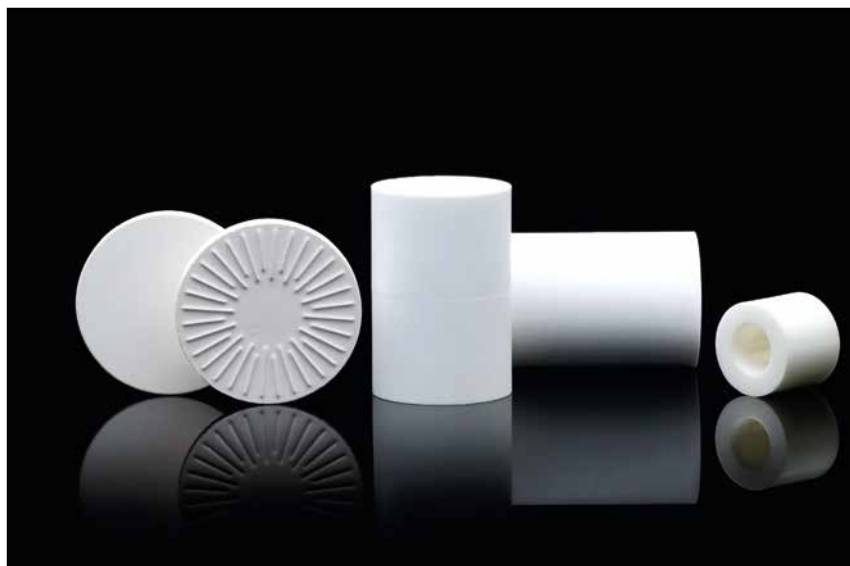


**Fig. 6**  
Installation of ALPHA 1500

Products which are permanently required only in small lots and for which a separate production plant would not be economically, can be supplied recurrently on call order. This, together with the company's activities in the TEAM Alliance should serve as a robust and healthy basic structure to stay successful within the upcoming years.

**CA:** Thank you for talking to us.

KS



**Fig. 7**  
Technical Ceramics