Mobility through Casting

The topic of electromobility is gaining increasing importance, also in casting technology and the related development of new cast components. Particular attention is being paid to the development and testing of new casting concepts and design methods for the components of electric motors. The demands for a later transferability to series production are constantly being taken into consideration.

At the forefront lies, for example, the embedding of tubes or hollow structures in the housings for electric motors, batteries or power electronics, due to cooling aspects. Furthermore, measures for the optimization of cast rotors are being developed. The concept of the cast coil opens up completely new possibilities for performance increases compared to conventionally wound wire coils.

Through close interdepartmental cooperation with the Electromobility department, an optimal know-how constellation is being forged that enables a holistic consideration of the manufacturing technological aspects with a casting technological focus, constructive design, and electromagnetic interpretation for the successful manufacture of components for electric drives.

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From the concept to the product…

With our competencies in Casting Technology, Fraunhofer IFAM accompanies our industrial customers throughout the casting technology implementation of an idea from the concept to the first prototype to the final series-ready product. We have various casting processes and materials ready to address any query.

… in our one-stop shop!

The Casting Technology and Lightweight Construction department can illustrate the entire process chain from the concept phase via the casting design to the tool construction and the casting technological manufacture to the final metallographical and nondestructive testing.

Novel technology combinations

In addition to the conventional casting technological queries we also support our customers when it comes to reaching across technologies into manufacturing and materials technology. For this, project teams from various departments at Fraunhofer IFAM as well as other institutes of the Fraunhofer-Gesellschaft will come together to combine their expertise. Such topics as corrosion, surface treatment, paint and lacquer technology or adhesive bonding technology can be scientifically and practically addressed through our comprehensive network of research and development staff.