

Alloy development of innovative casting materials

A key issue of modern technological development is the improvement of energy and material efficiency. Especially lightweight engineering plays a central role.

Aluminum alloys are particularly suitable lightweight materials due to their low density and good properties. Current research aims are expanding the potential of aluminum alloys to further fields of application, especially with higher temperatures and mechanical loads.

Together with other Fraunhofer institutes and further renowned partners, Fraunhofer IGCV develops new and innovative aluminum alloys with better mechanical properties at higher application temperatures. Therefore, new approaches are adopted to identify and realize as yet ignored potentials in alloy development.

Objectives

- Development of novel Al-alloys with improved properties, especially at higher temperatures
- Process design and qualification to realize casting and additive production processes.

Picture: Thermic analysis via STA to determine the thermophysical properties of an aluminum alloy © Fraunhofer IGCV / Andreas Heddergott

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