



Invitation to the 92. AMAP Colloquium

Presentation by

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**New Stamping Technology for
Lightweight Materials used for
Hot Stamping of Aluminum**

on Thursday, **February 20th, 2025 at 4.00 pm**
with subsequent discussion at AMAP

All interested persons are sincerely invited to the AMAP foyer.
Snacks and refreshments will be available.

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New Stamping Technology for Lightweight Materials used for Hot Stamping of Aluminum

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Abstract

Aluminum first demonstrated its superiority for lightweight construction at the start of the last century. While it was initially used to manufacture the braces in the frame of Zeppelins from Friedrichshafen, the material has since become indispensable in aircraft design, ship design, and the automotive industry. The challenge has always been in forming the high strength aluminum grades into complex shapes.

For some years now the Imperial College in London has been working on the idea of making high strength aluminum formable with the help of heat without negatively impacting the desired material properties. On the contrary, the change in process parameters is intended to produce the desired properties.

Thanks to a newly developed technology called FAST (Fast light Alloys Stamping Technology), it is now possible to form high strength 6000 and 7000 series aluminum alloys without the material thereby losing a significant amount of strength. This has been achieved while giving particular consideration to the economical use of energy in order to optimize the environmental footprint of the processed part and thus make the use of aluminum in lightweight design even more attractive.

In a close sequence of process steps, the blanks are heated up in the die, formed, and immediately cooled down again. Of crucial importance is to perform this process in the shortest possible time, approx. 12 s as well as with the smallest footprint and reduced energy consumption compared to other methods of aluminum hot stamping.

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