

## **Cored wires for laser welding and additive manufacturing: case studies**

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Cored wires for welding and related activities have great potential, especially when complex or tailored chemical compositions are required. In these cases, traditional casting processes applied for the manufacturing of solid wires cannot replicate complex chemistries, especially on highly alloyed materials. Other benefits apply, such as higher melting efficiencies, and higher recovery rates.

With a wide range of materials, specifications, environmental conditions, etc. the development of cost-effective, fit-for-purpose tailored wires is a challenge that requires deep fundamental understanding of science and engineering.

In this presentation, principles of the design and manufacture of cored wires, and how they can be altered in multiple ways to deliver the required properties will be discussed. Finally, selected case studies for cored wires developed specifically for laser welding applications will be presented.

This presentation represents an excellent opportunity to find the next generation of materials required in the most novel technologies nowadays, such as energy, transport and aerospace, among many others.