



LightMe

Additive Manufacturing with Nanocomposites

In an increasingly dynamic context that requires fewer CO2 emissions with an impact on the environment, the idea of the LightMe project is creating new materials in order to realize components in aerospace and automotive fields with the same mechanical properties but with a final lighter weight which they would have if they were built using the actual material.

In this background Iris commitment regards the possibility to analyze and exploit advanced material in the form of powder through the **Additive Manufacturing technology**.

In particular, its R&D department is involved in improving of 3D printing, that is **Direct Energy Deposition (DED)**, thanks to **Borealis pilot line**.

In fact, this process allows to redesign the component decreasing its volume, choose to build it using desired material and reduce the waste.




As regards the case studies of **LightMe project**, two were selected:

- A gearbox for automotive field (DIAD partner).
- An actuator support for aerospace field (Coskunoz partner).

Both will be realized by **Borealis pilot line** from Iris with a particular **MMN, Ti6Al4V+ TiC 3,8% wt.**, analyzed and tested for the first time for these applications.



 **IRIS** Iris has printed several coupons in **Ti6Al4V + TiC 3,8% wt.** from which will be extracted some bone dogs samples for traction test and Charpy samples for resilience test. These results will show if this material is suitable for this process. At the moment from Iris experience it would seem more useful for the deposition of layers (coating) that strengthen the surface of the components.

