Newsletter #4

LightMe Ending | LightMe Ecosystem | 1st International Conference on Lightweight Materials

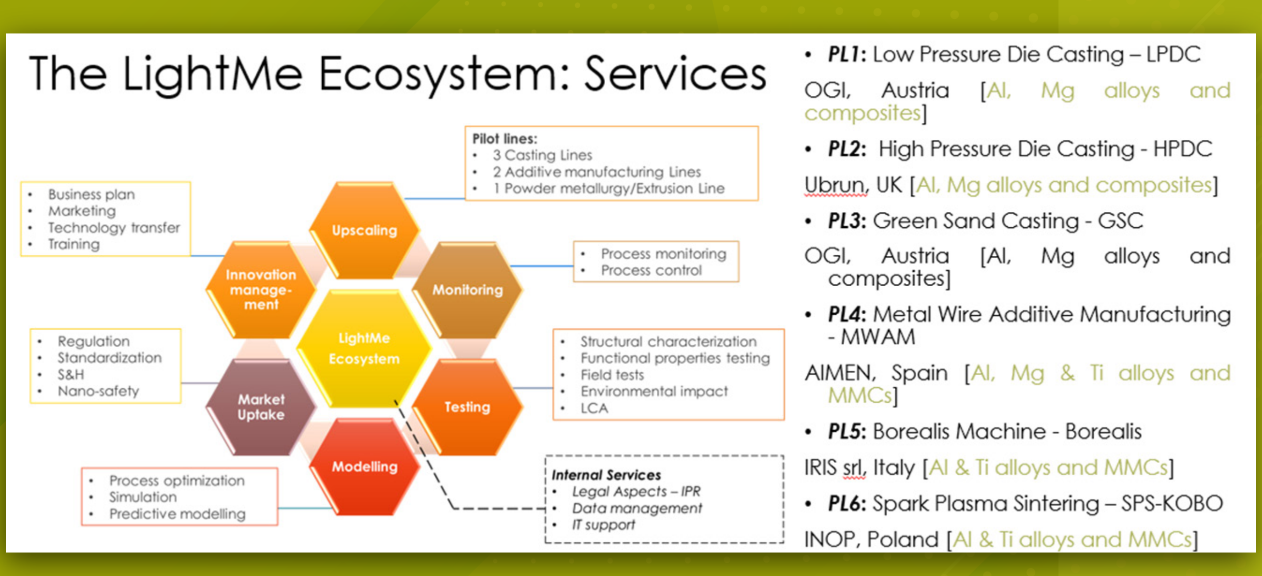
The end of LightMe Project

During a period of **4 and half years together**, partners of the LightMe project have worked through ups and downs to accomplish the creation of the LightMe Ecosystem. Though the project will end, the **Ecosystem** will **remain alive**.

It has been an exhilarating journey, and we want to thank you for your support, **collaboration** and **participation** in our initiatives, such as the open calls.

As this chapter comes to a close, we want you to know that the LightMe Project's impact will continue to shine brightly. We invite you to stay connected with us through our **website** and **social media** channels. There, you can find updates on our Pilot Lines, events and much more!

LightMe Ecosystem: Project Services



LightMe Ecosystem

Services of LightMe:

The LightMe Ecosystem represents the operation of a new, open innovation ecosystem targeting in the upscaling of lightweight metal alloy composites materials and products. It provides state of the art services including lightweight metal processing and manufacturing, monitoring, testing, characterization, modelling, environmental assessment, standardization, nano safety, innovation management and training to SMEs, midcaps, large industries, and academia interested in developing new applications and products for the transportation sector and other fields in which lightweight metal products find applications.

1. Open access to 6 pilot lines:

The LightMe ecosystem is providing open access to 6 different pilot lines across Europe covering the needs for upscaling processes and product development up to TRL 7 in the field of lightweight metals (AL, MG, TI). The following Pilot Lines are available:

- Low Pressure Die Casting pilot line (LPDC) of ÖGI, in Austria.
- High Pressure Die Casting pilot line (HPDC) of Brunel University in the UK,
- Green Sand Casting of ÖGI, in Austria,
- Metal Wire Additive Manufacturing pilot line of AIMEN, in Spain,
- Borealis pilot line of IRIS srl in Italy,
- SPS-KOBO extrusion pilot lines of INOP in Poland

2. Monitoring and Control services:

The clients of LightMe ecosystem have access to validated processes and tools for on-line quality monitoring and control. Quality control and process verification systems coupled with innovative automated tools to increase the process control and ensure the required productivity as well as monitoring the quality of materials and products are offered. Furthermore, monitoring and control systems promote the ability to suppress external disturbances and assess the status of the processes with the use of sensor measurements: this leads to reliable results with low variability, consistent cycles that will provide predictable material structures and therefore higher repeatability and quality standards. Monitoring and control services are provided by STAM, IRIS Tech and ISQ.

3. Testing and environmental assessment services:

The aim of testing and environmental assessment services is to provide the necessary feedback for process optimization, as well as the verification of the compliance with corresponding standards. Characterization services provided, range from structural level characterization to the characterization of mechanical and chemical properties. Additionally, evaluation of the environmental impact of the new materials produced, is done by LCA/LCC analysis. These services are provided by PoliMi, OGI, AIMEN, Ubrun, INOP, ISQ & ICCRAM.

4. Modelling & simulation services:

Predictive modelling, simulation and process optimization services are provided to the LightMe clients based on the know-how in numerical simulations of casting processes and utilizing the simulation programs "STAR-CCM+" and "MAGMASOFT", as well as high performance computer clusters. These services are provided by Access, Brunel, Stam and INOP.

5. H/S, nanosafety, regulation & standardization services:

These services include all necessary consultancy activities in order to guarantee compliance of the new materials and products with regulatory bodies, identifying standardization issues, proposing new items to develop, and supporting ISO working groups. They also support industry on the identification of uncertainties and potentials risks. A risk management process will be available, for the clients, following the principles and guidelines of the standards ISO 31000 – Risk Assessment - Guidelines and ISO 31010 Risk management — Risk assessment techniques, which comprises three main phases: establishing the context, assessment of risk and risk treatment.

6. Innovation Management services:

Innovation management services starts with case specific feasibility studies used to determine the viability of the product ideas, in economic, legal, and operational terms and before developing the appropriate tailor-made business plans. Furthermore, consulting services are provided regarding access to additional funding schemes facilitating SMEs to acquire funding for the coverage of the costs of utilizing the LightMe services. Finally, innovation management services also include the proper management of intellectual property. In detail, it comprises of legal advocacy services and contract development according to the needs of each client. Additionally patent search services are offered for clients that wish to file a patent themselves or wish to identify relevant applications in a specific technology field. These services are provided by AXIA, SD Partners, TimeLex and EWF.

The whole set up of the LightMe ecosystem targeted to create research-oriented community that is capable to operate independently based on the principles of sustainability and open innovation. This objective was very ambitious considering the various external obstacles that we faced during these 4,5 years (COVID-19 pandemic, Russia- Ukraine war, inflation) but hurdles mainly due to bureaucratic and legal aspects. However, despite the barriers we managed to establish the open innovation ecosystem managed by the Italian beneficiary ASFIMET. ASFIMET has been assigned with the role of the Single- Entry- Point, being responsible for the communication and support with potential clients as well as contacting the service providers for the preparation of the different test cases entering the LightMe ecosystem. Various innovative test cases have been already implemented within LightMe and we are eager and excited to host the next test cases in our facilities!

LightMe Project: 1st International Conference

1st International Conference on Lightweight Materials

The **First International Conference on Lightweight Materials** was held on May 11th and 12th, 2023, at Politecnico di Milano.

The **two-day conference** was dedicated to the advancement of industry regarding the progress on materials and gathered technical presentations form **academia**, **industry**, and **Open Innovation Test Beads** in the field of lightweight materials.

The **conference** entailed the **opportunity** to submit an abstract, papers and presentations. A poster session was also organized for the second day.

Thank you all for your **participation** and for the fine presentations.

We will **keep you updated** for future editions of this conference.

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