SYNTECS

SUSTAINABLY AND DIGITALLY DRIVEN HIERARCHICAL LASER TEXTURING FOR COMPLEX SURFACES

SYNTECS PRESS RELEASE

Enters Final Stretch with Successful Integration, Demonstrations, and Continued Innovation

The **SYNTECS Project** (Sustainably and digitally driven hierarchical laser texturing for Complex Surfaces), funded by the Horizon Europe programme, has reached a critical milestone at Month 30, showcasing substantial technical progress and preparing for final demonstrations across its use cases.

During the latest project meeting, partners reviewed the full integration of the SYNTECS machine with hybrid laser texturing capabilities (SLW/DLIP), now supported by real-time monitoring modules developed by the University of Birmingham and Fraunhofer IWS. System testing has progressed significantly, with the first 3D DLIP-textured half-spheres successfully produced and presented at Laser World of Photonics 2025. SYNTECS was featured at the event with a dedicated booth, supported by exhibiting partners LASEA, FusionBionic, and Fraunhofer IWS.

The LCA-CAD tool continues to evolve as part of the sustainability-driven design framework. It is now entering its evaluation phase involving expert users to test its usability and effectiveness in conveying environmental impact indicators within the design process. This supports the project's broader goal of integrating lifecycle thinking into digital surface design workflows.

Meanwhile, progress continues across the three SYNTECS case studies: injection moulding tools, hip implant surfaces, and complex vapor chambers. Final processing and functional testing activities are underway and will be completed in the coming months, paving the way for comprehensive performance validation.

As SYNTECS moves towards its final phase, the consortium remains focused on delivering a robust, sustainable, and digitally controlled manufacturing solution through advanced laser surface texturing. The project will conclude with final demonstrations, training activities, and a joint exploitation strategy to support the industrial uptake of its innovations.

Partners

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