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Research Success Story

H I P E R D I A S L A S E R S A I M T O C U T T E N T I M E S F A S T E R

The Horizon 2020 project “HIPERDIAS” (High throughput laser processing of diamond and silicon) aims to take ultra-short pulse laser technology in manufacturing to a higher level. Targeting synthetic diamond and fine metals, HIPERDIAS will demonstrate that such materials can be processed with high precision and greater efficiency at lower cost on the factory floor. A Swiss company, Class 4 Laser Professionals AG, is a key member of the HIPERDIAS consortium.

When a consortium of European companies decided to apply for a Horizon 2020 grant to develop more powerful laser technology for manufacturing, it chose Class 4 Laser Professionals, based in Lyss, Switzerland, to join them. Not only had they built a reputation for specialised lasers, their C4L Systems division had a track record in developing special systems to fit the particular requirements of its customers. “Class 4 Laser is an expert in cutting, welding and micro-drilling such challenging materials as fine metals, crystals and ceramics,” explains Enda McCague, the company’s Application Engineer. Class 4 Laser is at the centre of several HIPERDIAS work packages and leads systems development. “For now, we are looking to upscale what the watch industry already does but at higher quality and faster

speeds,” says McCague. “We already see future applications in such heavy industries as oil and gas and in medical technology.”

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Support from Euresearch

HIPERDIAS is Class 4 Laser’s second Horizon 2020 project, so they have some insights to offer other companies interested in applying – notably, start with Euresearch. “Euresearch’s help in navigating the different options was invaluable,” says McCague. “There is a broad range of different funding schemes your project may be suitable for. Euresearch gave us advice about the different options open to Swiss companies and the chances of success. They organised

information and networking events and held workshops about writing project proposals. It would have taken us weeks to figure that all out by ourselves!”

Benefits of Horizon 2020

Based on Class 4 Laser’s experience, McCague sees clear benefits in joining an EU project. “If you can find a project aligned with your own strategic goals, your R&D will in effect be subsidised. Also, for a small company, a Horizon 2020 project is an enormous validation because it comes with requirements that prove your standards of excellence. People starting their careers find it more attractive if a company is involved in a European project. In fact, that’s what brought me to Class 4 Laser! Finally, by joining a project, you automatically tap into the networks of your partners.”

About HIPERDIAS



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Enda McCague
Application Engineer,
Class 4 Laser Professionals

CONTENT SUMMARY

The main objective of HIPERDIAS is to demonstrate high-throughput manufacturing using a high-power, high-repetition rate sub-1ps laser system. The project will improve processing quality and speeds for targeted materials by taking proven concepts (e.g., key innovations in laser amplification, processing and beam delivery) out of the laboratory and into real industrial settings. The project focuses on the 3D structuring of silicon, precision processing of synthetic diamond and the fine cutting of metals.

FACTS AND FIGURES

Project Name
HIPERDIAS (High throughput laser processing of diamond and silicon)

Research Area
Food and pharmaceutical technologies

Organisations
University of Stuttgart, (Coordinator) and 9 partners

Start Date – End Date
01.02.2016 – 31.07.2019

Duration
42 months

Project Cost
€4.44 million

Project Funding
€4.44 million

Programme
Horizon 2020 Industrial Leadership: Leadership in Enabling and Industrial Technologies (LEIT) – Information and Communication Technologies (ICT)

More Information
www.hiperdias.eu

Euresearch is an information and advisory service on the European Research and Innovation Framework Programmes. It has offices in all the Swiss regions and a Network Office in Bern. Euresearch is a non-profit association supported by the Swiss federal government.



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