



HALO

High power Adaptable Laser beams for materials prOcessing

Project reference: 314410

Instrument: Collaborative Project

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Web site:

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Timeline:

Start Date: 01/09/2012

End Date: 31/08/2015

Budget:

Overall Cost: 5 712 671 EUR

Funding: 3 857 976 EUR

Project Partners:

- Gooch & Housego (Torquay), UK
- University of Southampton, UK
- Trumpf Werkzeugmaschinen, D
- Trumpf Laser, D
- Synova SA, CH
- Fraunhofer ILT, D
- Laser Expertise, UK
- Luleå University of Technology, S
- Vivid Components LTD, UK.

Vision & Aim

Materials processing is by far the highest value application of lasers, and Europe is a power-base for this technology. HALO will develop the next generation of materials processing lasers, which will have adaptable beams actively optimised for specific processes. They will produce better processing results exploiting the as yet unused potential of:

- Fibre guided high power CW lasers for metal sheet cutting (addressing the largest market share of laser technology)
- Pico-second lasers operating at high average powers
- Pulsed lasers emitting at new wavelengths for precision cutting of thin metal sheets and brittle materials like glass (addressing products of consumer markets such as high end phones or PC systems).

This will require a range of new technologies: HALO will develop the necessary elements to bring about a step change in lasers for materials processing:

- Components tailored for adaptable beams and new beam shapes
- New approaches to adaptable hollow beam sources at new wavelengths
- Techniques for beam shaping and forming
- Process optimisation for adaptable beam processing using IT-based meta-models
- Adaptable jet-assisted laser cutting.

The project addresses these two most important markets of laser processing and will be demonstrated in specific industrial applications by important end users:

- Sheet metal cutting (sheet thickness 1 to 25 mm)
- Precision cutting of glass and thin metal sheets (<1 mm).

The HALO project consortium includes market leading laser component and system manufacturers, world renowned researchers, beta end users of the system manufacturers and one end user representing excellence in EU SMEs.