

The Strategic Research Centre for the Manufacturing Industry

PROGRAMME

Integrating a multi-axial machining centre and laser hardening for prototypes and small complex series

Lessons learned in the Flanders Make project "Intlas"

Thursday, 28 September 2017
De Montil, De Moortelstraat 8, 1790 Affligem

09h30 **Welcome**

10h00 **Introduction into the Flanders Make project "Integrated Laser Hardening for prototypes and small series of complex components"**
Anje Van Vlierberghe, Project Leader, Flanders Make

Hardening complex mechanical components for prototypes and small series is a time-consuming process entailing considerable accuracy risks. In this presentation, you'll be introduced into the Flanders Make project tackling this challenge by introducing a multi-axial machining centre including laser hardening.

10h15 **Development of a laser head and proof of concept**
Benjamin Peeters, Research Engineer, Flanders Make/KU Leuven

In the project, we have developed a set-up for oscillating laser hardening of 3D surfaces and components and integrated it in a DMG MORI NTX2000 machining centre. This set-up is used for different tests, a/o C45 steel.

10h25 **Integration of laser technology in machining centre**
Anje Van Vlierberghe, Project Leader, Flanders Make

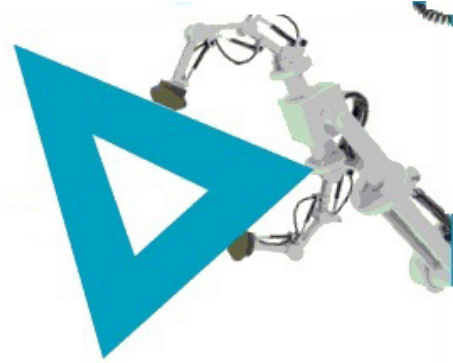
Challenge: developing a controller for a "laser head" integrated in a machining centre. In order to maintain the quality of the workpiece, it is important to reach the desired hardness for complex 3D shapes without melting the surface.

10h55 **Metallurgy of oscillating laser hardening: a complex process**
Olivier Malek, Engineer Precision Manufacturing, Sirris

In this presentation, we zoom in on the complex metallurgical aspects of oscillating laser hardening.

11h15 **Industrial application of integrated laser hardening of prototypes**
Freddy Vanspringel, Test Engineer, VCST

Integrated laser hardening will trigger a revolution in the way in which industrial partners will manufacture prototypes and small series of mechanical



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components. The whole production chain, i.e. machining operations and laser hardening, must result in a high-quality component that meets all pre-set requirements and is manufactured in a drastically reduced lead time.

- 11h35** **Wrap-up & next steps**
Anje Van Vlierberghe, Project Leader, Flanders Make
- 11u45** **Q&A**
- 12u00** **Sandwich lunch**