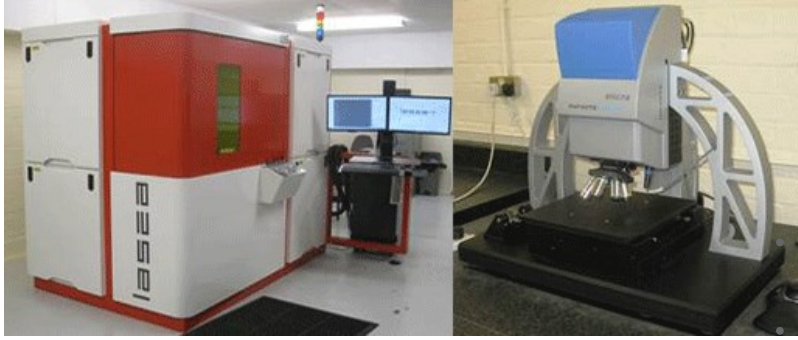


## Laser Processing



Left: Laser micro processing platform  
Right: Alicona IF G4 microscope system

The School of Mechanical Engineering has established this new research group in laser processing, thanks to the University's recent strategic investment in Advanced Manufacturing. The lab conducts research in the area of advanced laser processing in particular:

**Design, implementation and testing of reconfigurable laser micro processing platforms** for structuring, texturing and polishing of large (bigger than the field of view) 3D surfaces;

**Investigation of laser-material interactions** of advanced engineering materials such as aerospace alloys, stainless steel, bulk metallic glasses,

etc.;

- **Process design in implementing laser-based modules/systems** for functional surface structuring, texturing, polishing and annealing that can be integrated with other machining processes, e.g. milling, into integrated machining platforms;
- **Synergistic process-material engineering for deployment of laser processing technology in combination with advanced material processing technologies** for producing layers or components of nanophase and glassy materials.

The aims of the group are to carry out internationally leading research in advanced laser processing with a focus on surface structuring, texturing and polishing of complex 3D components in a wide range of metallic and non-metallic alloys and compounds.

The group also offers contract research and manufacturing services to industry that can be co-funded as feasibility studies through its R&D grants.

The group has state-of-the-art laser micro machining and characterisation equipment including:

- [Lasea Multi-Axis Laser Micro Machining Centre \(/facilities/advanced-manufacturing/index.aspx#laseamultiaxislaser\)](#)
- [Alicona G4 InfiniteFocus system \(/facilities/advanced-manufacturing/index.aspx#aliconag4\)](#)

The group works closely with other research groups within the School and the EPS College and has access to other state-of-the-art characterisation equipment such as optical and scanning electron microscopy, FIB, metallography, microhardness, contact based surface profilometer, co-ordinate measuring machine etc.

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