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WMG wins £3.3m grant to improve laser welding technology

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By Duncan Tift - Deputy Editor, West Midlands



WMG at the University of Warwick has been awarded a £3.35m European grant to spearhead development of new laser welding technology.

Remote Laser Welding (RLW) is emerging as a powerful replacement for spot welding technology in vehicle manufacturing. It promises five times the speed of spot welding and far more efficiency. However, this can currently only be achieved through a process of trial and error.

The new grant has been awarded by the European Commission Framework 7 Programme (FP7). The project is aimed at developing a system that removes trial and error from the process using precise mathematical

modelling. Ultimately this will deliver the efficiencies manufacturers want from the process.

Lead researcher on the project, dubbed Remote Laser Welding System Navigator for Eco & Resilient Automotive Factories, WMG Professor Darek Ceglarek said: "Our project will integrate universal simulation engine and experimental models to precisely model, configure, optimise complex control laser welding in complex multistage assembly processes.

"The project will take advantage of the three main characteristics of laser welding: non-contact, single side joining technology, and high power beam capable of creating a joint in fractions of a second."

The effectiveness of Remote Laser Welding (RLW) as an alternative to spot welding in vehicle manufacturing is due to a combination of laser power and optics.

Unlike spot welding, which requires access to both sides of an assembly to create a joint, laser welding is a single sided joining technique.

The WMG research will give manufacturers the ability to easily and comfortably create assembly systems using the technology. This in turn will create cost savings and improve efficiencies.

The university will be partnering with a number of organisations during the project. These include:

- The Computer and Automation Research Institute of the Hungarian Academy of Science
- Politecnico di Milano
- University of Patras
- The Swiss Federal Institute of Technology in Lausanne



- University of Molise
- Jaguar Cars Limited
- Stadco Ltd
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