

Cardiff University experts solve manufacturing problem

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Experts at Cardiff University's Manufacturing Engineering Centre (MEC) have solved a problem affecting models made by Stereolithography (SLA). Patent applications have been lodged.

SLA creates prototype models of products, such as mobile phone covers or vacuum cleaner shells, by using an Ultra Violet light beam to solidify liquid resins in response to instructions fed into the machine from data created by a 3D Computer Aided Design (CAD) model.

During the building process, these models – particularly hollow ones – can collapse, become deformed or simply inaccurate, which can result in time delays and increased costs as the failed process is disposed of and the new process is started. This problem is known as 'Trapped Volumes' and has now been remedied.

Professor of Advanced Manufacturing and Deputy Director of the MEC, Stefan Dimov said: "This is another example of the research work carried out at the MEC solving difficult technical problems, improving commercial practices and assisting the global competitiveness of UK manufacturing companies."

SLA came into vogue in the UK in the 1990s at the same time as 3D CAD systems became available at increasingly affordable prices. The process automated and largely replaced traditional model making skills, which meant that models could be made overnight and delivered to the client a couple of days later.

SLA is now widely used to create early examples of covers and components, which allows engineers to confirm the fit and iron out any problems with assembly. It also allows Marketing people to test the product in the marketplace at the earliest stage of product development.

Source: Cardiff University

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