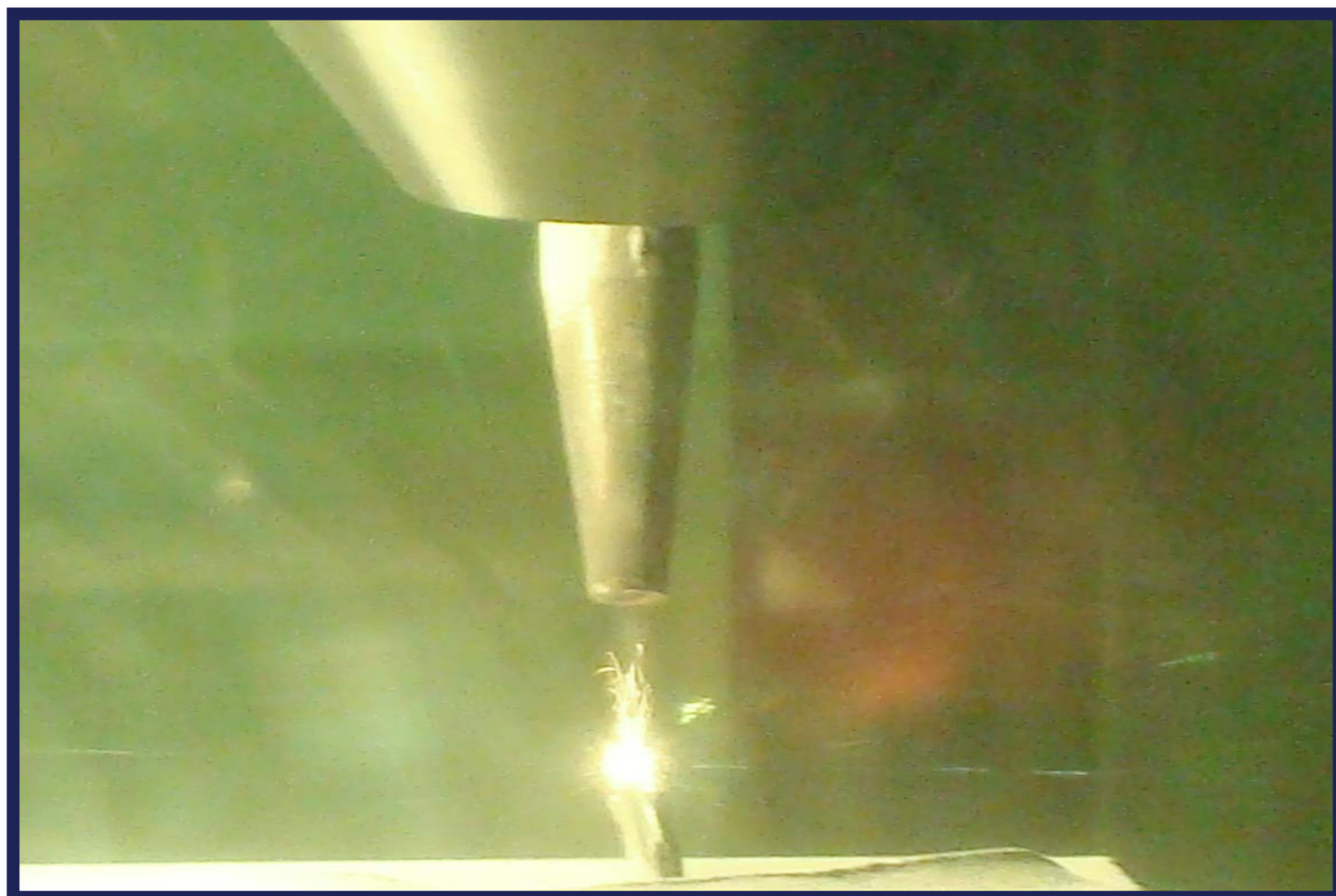


# DAMASCUS

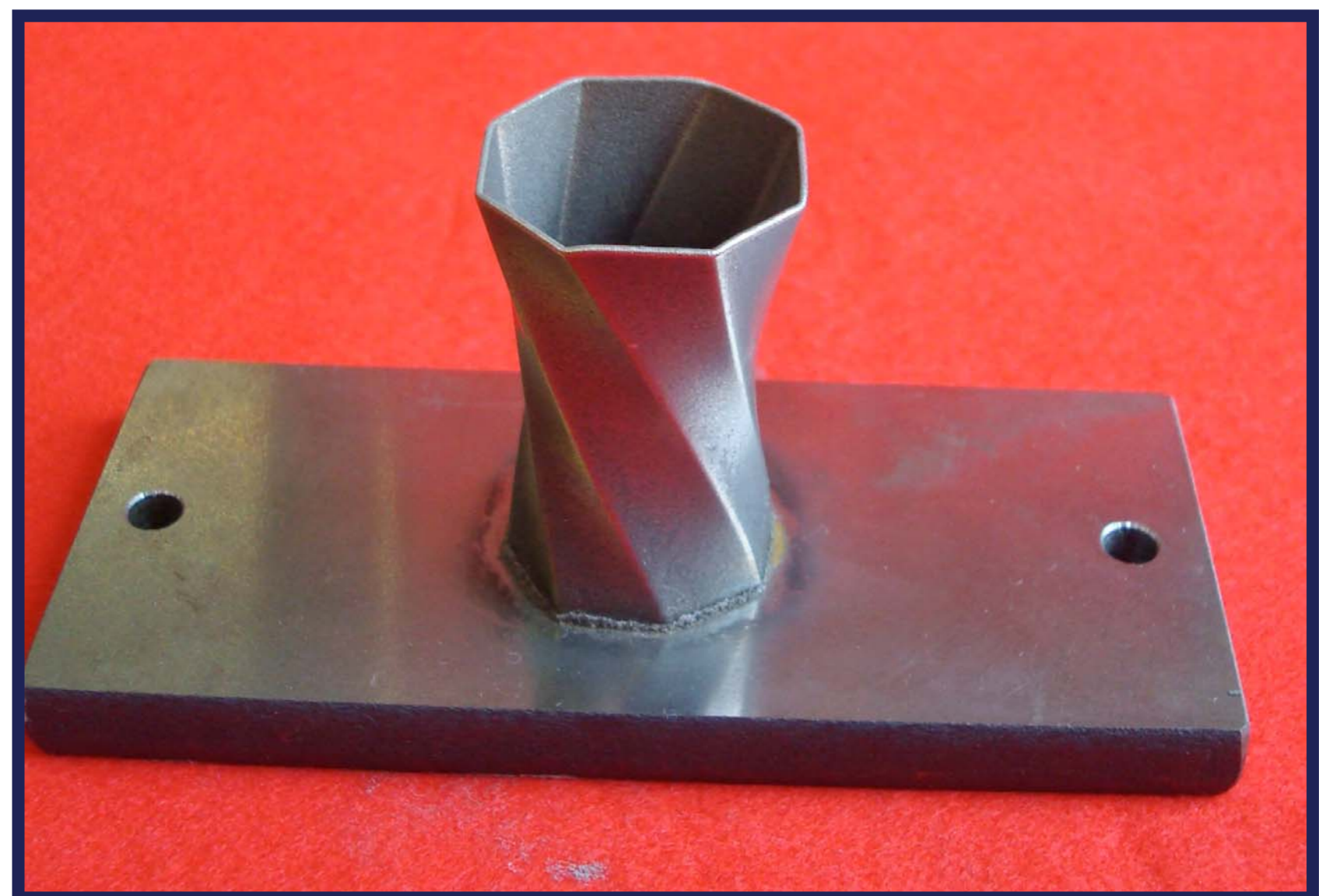


Damascus (Direct Additive MAnufacture of Safety Critical primary strUctureS) is a 3 year project that will investigate the development of safety-critical parts using an emerging Additive Layer Manufacture (ALM) technology called Laser Consolidation (LC). The consortium, led by Airbus UK, includes Castings Technology International, a leading Formula One team, The Welding Institute and the Advanced Technology Centre of BAE Systems to explore the industrial applications of the laser consolidation technology. DAMASCUS will focus on developing small but complex components that will be used in the racing car and the aerospace industries. The research will be conducted at the University of Exeter using the Laser Consolidation system manufactured by Accufusion, a spin-out from the Canadian National Research Centre. The project, valued at £1.8M, is supported by the Technology Strategy Board (formerly DTI) under the Direct Write programme.



The LC system is categorised as a 'powder-fed' system and uses a moving head which deposits build material in powder form whilst a laser melts the powder to form the part. One of the exciting aspects of the project is that the system is truly scalable and although parts being produced under the project may be small, there is no reason that the process should not scale up to make larger parts.

Possibilities for reducing manufacturing time, such as varying the power and pulse rate of the laser, will be examined. The project will also investigate the use of a variety of metal powders including stainless steel, aircraft alloys and titanium. Parts produced will be compared with similar parts manufactured using conventional engineering processes (such as casting or milling) so that the LC technique can be qualified for safety-critical part manufacture.



For further information contact the project researcher Dr Neil Sewell ([n.t.sewell@exeter.ac.uk](mailto:n.t.sewell@exeter.ac.uk))

**DAMASCUS is funded through the DTI Technology Programme**

