Research Groups involved in Additive Manufacturing of Superalloys

For additional resources, visit
http://www.materialstechnology.org

The following are links to groups involved in additive manufacturing of superalloys. This list is not complete. Please submit a resource to include another group.

GROUP	TYPE	CITATION	WEBLINK	DSECRIPTION
Laser Processing Research Centre, University of Manchester	**University**	*"LPRC Staff". Laser Processing Research Centre. School of MACE. The University of Manchester. Manchester, UK.*	Launch Site	The research interests of Professor Lin Li, Professor Philip Withers, Dr. Jianxin Pan, Dr. Michael Preuss, and Dr. Andrew Pinkerton are all described on this page of the University of Manchester site. All appear to be involved in studies relating microstructure and stress control in laser additive manufacturing of superalloys.
Welding Engineering Research Centre, Cranfield University, UK	**University**	"Welding Engineering Research". Welding Engineering Research Centre, Cranfield University.	Launch Site	The Centre is the largest academic group in the UK dedicated to welding and welding automation. "Additive Manufacturing" is a form of batch manufacture, rapid prototyping or repair. Components are fabricated using wire consumables, and either welding arcs or lasers as a heat source. Cranfield pioneered research in this area, which led to its adoption by a major aerospace company. Current research is focussed on the use of lasers and modern digital power supplies as the heat source for additive manufacturing. Projects to combine additive manufacture with shape measurement and precision grinding using multi-objective optimisation are currently under development.
Mechanical and Aerospace Engineering, Utah State University - Adjunct Assistant Professor Durga Janaki Ram Gabbita	**University**	*"MAE Adjunct Faculty". Mechanical and Aerospace Engineering. Utah State University. 2007.*	Launch Site	Durga Janaki Ram Gabbita is an Adjunct Assistant Professor of Mechanical and Aerospace Engineering. His research interests include materials joining, superalloys, and additive manufacturing. He is currently working on Laser Engineered Net Shaping (LENS) and Ultrasonic Consolidation processes in collaboration with Dr. Brent Stucker.
Innovative Manufacturing Research Center (IMRC), Department of Engineering, Cambridge University - Dr. Bill O'Neill	**University**	*"Cold Gas Dynamic Manufacturing". Engineering Department. University of Cambridge. 24 January 2005.*	Launch Site	The IMRC has been making aluminum components using cold gas dynamic spraying and is aiming toward using the same process for making nickel-base superalloys.
Optomet, Inc.	**Corporation**	*"LENS Applications". Optomet - Additive Manufacturing. Optomet 2006.*	Launch Site	Optomec's industry-leading LENS systems are used to cost-effectively fabricate, enhance, and repair high-performance metal components in state-of-the-art materials such as titanium, stainless steel, and Inconel®.
Sandia National Laboratories	**Laboratory**	*"Laser Engineered Net Shaping". Sandia National Laboratories.*	Launch Article	Sandia National Laboratories has developed a process called Laser Engineered Net Shaping whereby fully dense metal components are fabricated directly from raw materials. Parts have been fabricated from stainless steel alloys, nickel-base superalloys, tool steel alloys, titanium alloys and other specialty materials.
Honeywell	**Corporation**	*R. J. Adams. "Advances in Ion Fusion Formation: An Alternative Solid Freeform Fabrication Process". Aeromat 2005. June 6-9, 2005. Orlando, Florida, USA.*	Read Abstract	This abstract from Aeromat 2005 indicates that Honeywell has used the ion fusion formation (IFF) process to produce superalloys and other high temperature materials. The process uses a very hot ionized gas to deposit metal in small increments, ultimately building a component. This solid freeform fabrication process uses electrical energy, rather than lasers, as heat source.

Acceleron, Inc.	**Corporation**	*"Acceleron: Specialists in Electron Beam and Laser Technology". Acceleron, Inc. 2007.*	Launch Site	Acceleron specializes in electron beam and laser technology services, including welding, drilling, cutting, slotting, marking and engraving.
EOS GmbH	**Corporation**	e-Manufacturing Applications. EOS Applications. EOS GmbH Corporate Website.	Launch Site	EOS is the world leading manufacturer of laser-sintering systems. EOS systems offer a range of solutions for producing metal or plastic parts directly (DirectPart) or via laser-sintered tooling (DirectTool), patterns (DirectPattern) or casting moulds (DirectCast).
POM Group, Inc.	**Corporation**	*"DMD Systems". Home of the POM Group, Inc. POM Group Corporate Website. 2006.*	Launch Site	The POM Group provide direct metal deposition (DMD) systems and will build customized DMD systems as well.
The Advanced Manufacturing Research Centre	**University & Corporation**	*"Additive Manufacturing". Advanced Manufacturing Research Centre.*	Launch Site	The Innovative Metals Processing Centre (IMPC) is an initiative of the a collaboration between the University of Sheffield and Boeing called the Advanced Manufacturing Research Centre (AMRC).
TWI. Ltd.	**Corporation**	*"Laser and Sheet Processes Group". TWI, Ltd.*	Read Brochure	The laser materials processing services provided by TWI, Ltd are described in this brochure. Direct metal deposition for repair, original part build, or metallic rapid prototyping is among their list of services.
Los Alamos National Laboratory	**Laboratory**	*"R & D 100 Honor Roll". LANL Technology Transfer. Los Alamos National Security, LLC. Copyright 2006-7.*	Launch List	This list of projects winning R & D 100 Awards shows that LANL won such an award in 1994 for the process of Directed Light Fabrication (DLF). The DLF process is used to build up a part in layers by passing gas-entrained powders through the focal point of a high-power laser light.