DESIGN FOR AM
A FOCUS ON POLYMERS

22nd June 2023

INTRODUCTION

Polymer Additive Manufacturing (AM) processes are receiving increasing interest across a range of industrial sectors.

Hosted in collaboration with Candice Majewski from the University of Sheffield this and the DfAM Network the event will provide an insight into the opportunities presented by polymer AM, how to get the best out of polymer AM processes, and where we might be heading in the future.

Host: Candice Majewski - Senior Lecturer in Mechanical Engineering

The University of Sheffield

Candice has been involved in the area of Additive Manufacturing since 2000. Her main research focus is on polymer-based processes (in particular polymer sintering technologies), although her teaching and Outreach activities span the broader context and applications of Additive Manufacturing.

AGENDA

Time	**Institution**	**Speakers**
10:00am	University of Sheffield	Candice Majewski
10:10am	Stratasys	Andrew Graves
10:40am	Laser Lines	Martin Kirk
11:10am	NTU	Guy Bingham
11:30pm	Break	
11.45am	University of Sheffield	Ipsita Roy
12:05pm	AMRC	Mark Cocking
12:25pm	MTC	Hoda Amel
12:45pm	Loughborough University	Richard Bibb
13:00pm	Lunch	
13:30pm	Early Career Researcher competition	
14:30pm	Jaguar Land Rover	Luke Fox
15:00pm	Break	
15:15pm	Breakout sessions	
16:00pm	Close	

Andrew Graves – Business Development Manager

Stratasys Neo

Talk title: How the world of photo-polymer AM has changed over the years

Andrew Graves has been working in Additive Manufacturing since 1990 and spent 13 years with 3D Systems – initially in the UK and then in Valencia, California. He ran his own third-party AM maintenance company for a number of years then spent 5 years with Solid Concepts in Valencia, CA (now Stratasys Direct Manufacturing) before joining the Covestro Additive Manufacturing team (formerly DSM) in January 2017 as Equipment Partnership Manager. Since Stratasys acquired the Covestro AM business, he is now Business Development Manager for the Neo range of Stereolithography systems. He moved back to the UK in 2018 and is a 2015 recipient of AMUG's "DINO" award.

Martin Kirk - Stratasys Product Specialist

Laser Lines

Talk title: Choosing the Additive Manufacturing process for your application

I am an experienced additive manufacturing consultant, specialising in the Stratasys product range for Laser Lines Ltd with 10 years' service engineering experience at Tritech 3D and 5 years account/ project management experience at Materialise. I have been in the 3D Printing industry for 17 years now and love the technology and the advantages it brings to manufacturing. Because of my experience in both engineering and sales I have a unique skill set combining both in discussions with current and potential clients to understanding their requirements.

Guy Bingham - Associate Dean, Professor of Design

Nottingham School of Art and Design at Nottingham Trent University

Talk title: The design opportunities presented by polymer AM

Experienced Academic with a demonstrated history of working in the higher education industry. Strong education professional skilled in Additive Manufacturing/3D Printing, Product Design, Computer-Aided Design (CAD) and Engineering Design.

Ipsita Roy - Professor of Biomaterials, Department of Materials Science and Engineering

The University of Sheffield

Talk title: 3D Printing of Natural and Sustainable Polymers of Bacterial origin and their Biomedical Applications

Ipsita Roy is an expert in microbial biotechnology, natural biobased materials, and their biomedical and environmental applications. Professor Roy was awarded the prestigious Inlaks Scholarship to study for her Ph.D. at the University of Cambridge, UK. At Cambridge, she was awarded scholarships including the Churchill College Scholarship and the Cambridge University Philosophical Society Fellowship Award. Her postdoctoral work was at the University of Minnesota, USA. She has published over 100 papers in high 'Impact Factor' journals such as Biomaterials, ACS Applied Materials Interfaces, with an H index of 45. She is a fellow of the Royal Society of Biology and the Institute of Materials, Minerals and Mining (IOM3). Her group is focussed on the production of novel natural and sustainable polymers such as Polyhydroxyalkanoates, Bacterial cellulose, Alginate and their biomedical and environmental applications. She is an editor of Scientific Reports and Biomedical Materials. Her total grant portfolio is more than 14 million pounds. She has many patents, and she is in the process of spinning out a company called PHAsT, focused on the production of biobased materials for biomedical applications.

Mark Cocking - Design & Development Engineer

AMRC (Advanced Manufacturing Research Centre)

Talk title: Examples of polymer AM from design, through printing and into final use

The AMRC is a network of world-leading research and innovation centres working with advanced manufacturing companies around the globe. We transform industrial and economic performance by making step changes in productivity, increasing competitiveness, developing new products and processes and training new talent and skills.

Hoda Amel Technology Manager - Additive Manufacturing

MTC

Talk title: Applications for polymer AM

Hoda in responsible for guiding technology strategy development for the AM team. She has a Doctorate in Laser Sintered Polymer Parts and expertise in Polymer AM.

Richard Bibb - Professor of Medical Applications of Design, School of Design & Creative Arts

Loughborough University

Talk title: Medical applications of polymer AM

My research focus is the effective application of advanced design and product development technologies in medicine and surgery and Design for Additive Manufacturing / 3D Printing. I founded and am a member of the Design for Digital Fabrication research group (D4DF).

My teaching concentrates on final year design and postgraduate programmes. I supervise undergraduate Final Year Design Practice and postgraduate Major Projects.

My specialist areas of expertise are Rapid Prototyping, 3D Printing, Additive Manufacturing, and in particular the application of these technologies in rehabilitation, medicine and surgery. This research output has been published in 100 peer-reviewed articles and presented at international conferences in the USA, Canada, Japan, South Africa, Egypt, Germany, Belgium, Spain, Portugal, Romania and the UK.

Luke Fox - Additive Manufacturing Lead Strategic Engineer

Jaguar Land Rover

Talk title: Polymer AM in automotive

Luke Fox studied his PhD at the University of Sheffield in Mechanical Engineering. With a background in polymer chemistry and applying this to Additive Manufacturing in his research and career. Now as an AM Lead Strategic engineer at Jaguar Land Rover, Luke continues to use his several years of experience in the field to the development and implementation of AM at JLR.

About the DfAM Network:

The purpose of the EPSRC design for AM network is to connect the wider UK design for AM academic research community alongside those in industry that are experienced practitioners of additive manufacturing technologies, such that we can benefit from sharing knowledge, developing research themes and working collaboratively to ensure that design for AM is given the best platform possible.

By bringing together the design for AM community, the network aims to reach out to the widest possible audience that might benefit from design for AM research; identify future research directions and facilitate larger and more adventurous research collaborations.

Design for AM NETWORK

https://www.designforam.ac.uk/