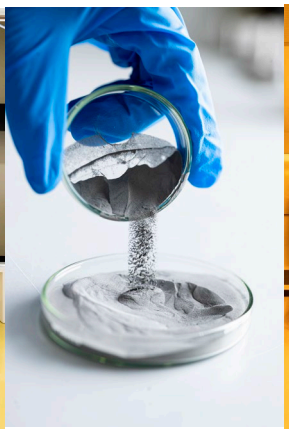
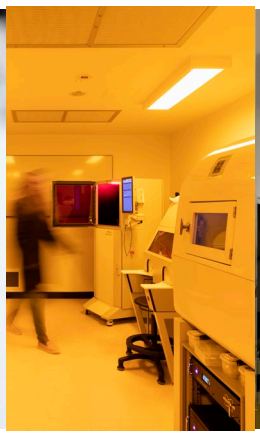
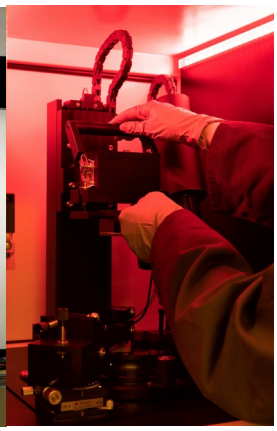
THE UNIVERSITY OF SYDNEY

Sydney Manufacturing Hub & Materials Australia

9–10 August 2021

Phase Transformations and Microstructural Evolution in Additive Manufacturing



DAY ONE – MONDAY 9 AUGUST 2021	
11.30-11.45am	**Welcome and opening remarks** Gwénaëlle Proust (University of Sydney, Australia)
	Session Chair: Gwénaëlle Proust (University of Sydney, Australia)
11.45am-12.45pm	**Opening plenary** Tresa Pollock (UC Santa Barbara, USA) *At the Crossroads of Additive Manufacturing, Analytics and Advanced Materials*
12.45-2.00pm	**Lunch break**
	Session Chair: Andrew Breen (University of Sydney, Australia)
2.00-2.40pm	Behrang Poorganji (University of Toledo, USA) *Additive Manufacturing of Advanced Alloys: Material Design and Process Development Considerations*
2.40-3.20pm	Ma Qian (RMIT, Australia) *Simulation-Informed Laser Metal Powder Deposition of The Ti-6Al-4V Alloy for Better Microstructural Control*
3.20-4.00pm	Alexandra Shekhter (DST Group, Australia) *Air and Space Platforms Technologies: Outlook and Challenges for Defence*
4.00-4.30pm	Simon Ringer (University of Sydney, Australia) *An Overview of the Sydney Manufacturing Hub and Related Capabilities at Sydney*

Symposium Organisers: Simon Ringer (Chair), Gwénaëlle Proust (Co-Chair)
Symposium Secretariat: Tanya Smith (Materials Australia), Renee Barber (University of Sydney)
Symposium Supporters: Sydney Manufacturing Hub, 3D Additive (AUSMURI), GE Additive

DAY TWO – TUESDAY 10 AUGUST 2021	
8.55-9.00am	**Welcome** Gwénaëlle Proust (University of Sydney, Australia)
	Session Chair: Gwénaëlle Proust (University of Sydney, Australia)
9.00-10.00am	**Opening plenary** Sudarsanam Suresh Babu (University of Tennessee Knoxville, USA) *Role of Thermo-Mechanical-Chemical Transients on Liquid to Solid and Solid to Solid Phase Transformations during Additive Manufacturing*
10.00-10.40am	Amber Andreaco (GE Additive, USA) *Characterizing Additive Materials: Pedigree Driven Case Studies*
10.40-11.00am	**Morning break**
	Session Chair: Xiaozhou Liao (University of Sydney, Australia)
11.00-11.40am	Sri Lathabai (CSIRO, Australia) *Laser Powder Bed Fusion Additive Manufacturing of Self-Expanding Nitinol Stents*
11.40am-12.20pm	Matthew Dargusch (University of Queensland, Australia) *Case Studies Exploring the Relationships Between Design, Properties, Microstructure and Phase Transformations During Additive Manufacturing of Titanium and Titanium Matrix Composites*
12.20-1.00pm	Laichang Zhang (Edith Cowan University, Australia) *Enhanced Performance of Metallic Lattice Structures Fabricated by Additive Manufacturing*
1.00-2.00pm	**Lunch break**
	Session Chair: Anna Paradowska (ANSTO and University of Sydney, Australia)
2.00-2.30pm	Wen Hao Kan (Monash University, Australia) *Effects of In-Situ Rolling on the Microstructure and Mechanical Properties of Additively-Manufactured Ti-6Al-4V*
2.30-3.00pm	Xiaopeng Li (UNSW, Australia) *Additive Manufacturing of Aluminium: Alloy Design and Machine Learning Assisted Process Optimisation*
3.00-3.30pm	Fatemeh Azhari (University of Melbourne, Australia) *Predicting the Tensile Properties of Additively Manufactured Ti-6Al-4V using a Crystal Plasticity Finite Element Model*
3.30-4.00pm	**Afternoon break**
	Session Chair: Simon Ringer (University of Sydney, Australia)
4.00-4.40pm	Matteo Seita (Nanyang Technological University, Singapore) *Grain Boundary Engineering of Stainless Steel 316L via Laser Powder Bed Fusion*
4.40-5.20pm	Dierk Raabe (Max Planck Institute, Germany) *Microstructure- and Alloy-Design for Additive Manufacturing*
5.20-6.00pm	Catrin Mair Davies (Imperial College London, UK) *Residual Stress Prediction, Mitigation and Model Validation in Laser Powder Bed Fusion of 316H Stainless Steel*
6.00-6.10pm	**Closing remarks** Simon Ringer (University of Sydney, Australia)