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Modular Programmes (Under Specialisation): Additive Manufacturing

Applicants can sign up for the individual modules under the specialisations.

01 M1: Smart Additive Manufacturing System (45 hours)

This module provides a comprehensive overview of 3D additive manufacturing (AM), a transformative technology that enables the fabrication of complex and customized parts. It covers AM processes, materials, post-processing, design considerations, computational analysis, and business integration.

02 M2: Powder-bed Additive Manufacturing Processes for Complex Functional Metallic Components (45 hours)

This module delves into powder-bed metal additive manufacturing technologies, encompassing metal powder production, processes and hardware for various AM techniques, quality assessment, and practical hands-on experience.

03 M3: High Speed Additive Manufacturing Processes For Metallic Components (45 hours)

This module equips participants with the knowledge and skills to utilize high-speed additive manufacturing techniques for fabricating metallic components and exploring their applications in various industries.

04 M4: Polymer-based Additive Manufacturing Processes for Flexible Mass Customisation (45 hours)

This module imparts industrial knowledge of polymer-based additive manufacturing processes, covering various techniques, materials, design considerations, applications, and quality assessment.

Learn more:
bit.ly/3DAMcourse

Collaborate With Us!

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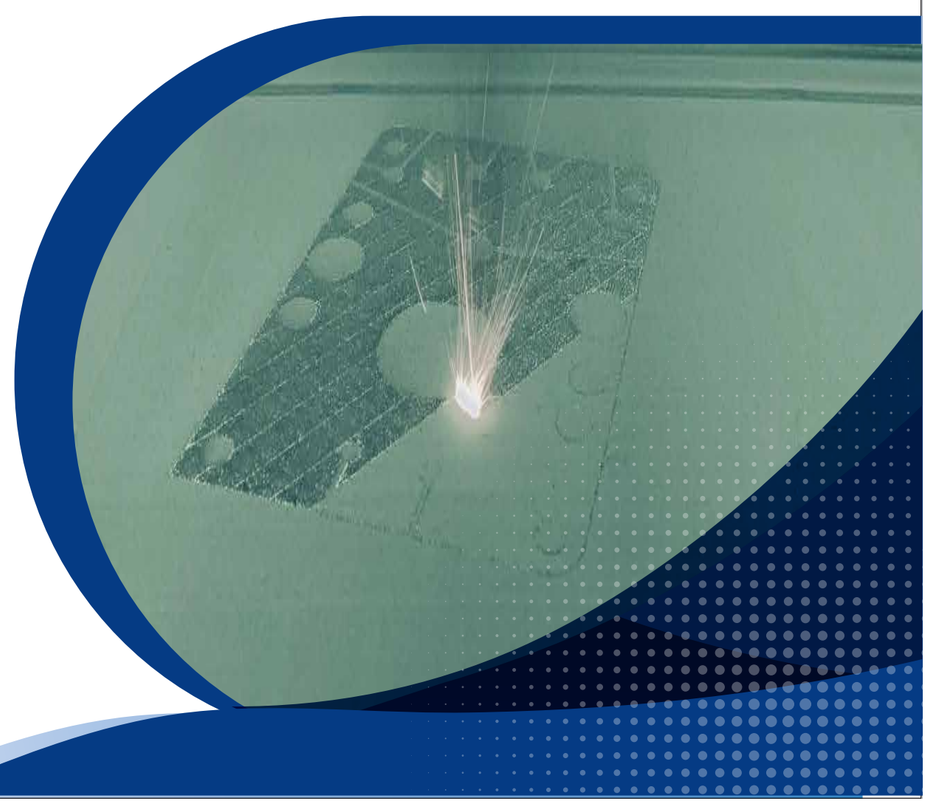
ADDITIVE INNOVATION CENTRE
Supported by NAMIC

Singapore Institute of Manufacturing Technology
SIMTech

The Additive Innovation Centre (AIC) is hosted by the Singapore Institute of Manufacturing Technology (SIMTech), a research institute of the Agency for Science, Technology and Research (A*STAR) and supported by the National Additive Manufacturing Innovation Cluster (NAMIC).

AIC aims to translate and deploy additive manufacturing technologies and innovations to the industry with our team of experienced researchers and state-of-the-art facilities.

Our distinctive expertise in integrated end-to-end additive manufacturing solutions and pilot batch production accelerate the translation of high-value additive manufacturing technologies to business outcomes.



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Integrated End-to-End Additive Manufacturing Solutions

AIC has a strong history of industry partnerships and engagements to uplift and upscale the manufacturing industry. Our comprehensive suite of additive manufacturing technologies and facilities, from advanced material characterisation to high industry testing protocols, make us a one-stop hub for integrated end-to-end additive manufacturing solutions.

Our focus sectors include Precision Engineering, Aerospace, Automotive, MedTech, Marine & Offshore, Oil & Gas, Energy and Semiconductors.

Design & Simulation
- Design for functionality
- Reverse engineering
- Topology optimisation
- Engineering simulation
- Design for AM production

Feedstock Development
- Development of next-generation materials
- Tailoring of material properties for high performance applications
- Sustainable quality feedstock
- Quality-assured feedstock characterisation facilities

Process Development
- Wide suite of metal and polymer 3D printers capable of running small batch production for AM components
- Deep expertise in AM process development and microstructure analysis
- Dedicated research in ceramic printing

Post-Processing
- High precision machining technologies capable of producing complex AM features
- Advanced surface enhancement technologies for functional and reliable textured surfaces
- Deep knowledge in material properties and facilities for enhanced post-heat treatment

Quality Inspection
- State-of-the-art non-destructive inspection technologies to detect submicron defects
- Highly accurate geometric dimensioning and tolerancing measurement systems for reliable part qualification

Pilot Batch Production

With the aim of driving adoption of additive manufacturing, our pilot batch production platform allows businesses to conduct pilot trials for small batch productions and refinement of production processes. After pilot trials, businesses can choose to implement the production facility set-ups as part of their in-house manufacturing capabilities or outsource production to contract manufacturer for long-term end-to-end AM deployment.

- Pilot trial period: 3 – 6 months
- Technologies: Fused Filament Fabrication (FFF) and Laser Powder Bed Fusion (LPBF) for polymer and metal 3D printing
- Trained engineers running pilot trials
- High industry quality control protocols

Knowledge Transfer
- Transfer of know-how to industry partners
- Customised training programmes to support AM production
- Key partners to support AM certification

Pilot Production
- Trained AM production team to scale your production
- Qualification part & FAI report generation
- Highly reliable & repeatable production

Conceptualisation
- Design for additive manufacturing
- Reverse engineering
- Simulation
- Prototyping
- Cost part analysis

Pre-Production
- Material & process development
- One-stop post-processing solutions
- Process documentation workflow
- Functional testing