Important Dates

Last date for registration : 9th October 2023

*Only limited participants are allowed;
No registration Fee.*

Registration

for registration scan me

Chief Patron

Dr. G. Viswanathan, Chancellor

Patrons

Mr. Sankar Viswanathan, Vice - President

Dr. Sekar Viswanathan, Vice - President

Dr. G V Selvam, Vice - President

Dr. Rambabu Kodali, Vice Chancellor

Dr. Partha Sharathi Mallick, Pro-Vice Chancellor

Dr. Jayabarathi T, Registrar

Convenor

Prof. Devendranath Ramkumar K,
Dean-SMEC, VIT, Vellore, India

Advisory Committee

Prof. Benedict Thomas,
HOD, Design & Automation, SMEC, VIT, India

Prof. Pandivelan C,
HOD, Manufacturing Engineering, SMEC, VIT, India

Prof. Ashok B,
HOD, Automotive Engineering, SMEC, VIT, India

Prof. Asokan M A,
HOD, Thermal & Energy Engineering, SMEC, VIT, India

Co-ordinators

Prof. R. Vasudevan, SMEC, VIT, Vellore, India

Prof. B. Ashok, SMEC, VIT, Vellore, India

Prof. S. Denis Ashok, SMEC, VIT, Vellore, India

Prof. Bibin John, SMEC, VIT, Vellore, India

Prof. S. Sreeja, SMEC, VIT, Vellore, India

VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Additive Manufacturing
Landscape and Laser Powder Bed Fusion Process Flow

11th October 2023

Resource Persons

**Ms. Akshatha Hulmani Dayananda
Mr. Sai Rakesh Kandagatla**
Wipro3D, Bangalore

Supported by Royal Academy of Engineering, UK

**Royal Academy
of Engineering**

Organised by
*School of Mechanical Engineering
Vellore Institute of Technology, Vellore, India*

in Association with
*Mapúa University, Philippines; Wipro3D, Bangalore;
EOS GmbH, India.*

Vellore Institute of Technology (VIT)

Vellore Institute of Technology was founded in 1984 as Vellore Engineering College by the Founder and Chancellor Dr.G.Viswanathan. University status was conferred in 2001 by MHRD Govt. of India in recognition of its excellence in academics, research and extracurricular initiatives.

Ranking & Accreditation

Vellore Institute of Technology (VIT) has emerged as one of the best institutes of India and is aspiring to become a global leader. Quality in teaching-learning, research and innovation makes VIT unique.

- ❖ Engineering and Technology subject areas of VIT are the 240th best in the World and the 9th best in India, and eight subjects of VIT are within the top 500 in the world (as per QS World University Rankings by Subject 2023)

- ❖ The 8th best University, the 11th best research institution and the 11th best engineering institution in India (NIRF Ranking, Govt. of India 2023)

- ❖ Ranked among the top 601-700 Universities of the world and one of the top 3 Institutions in India (Shanghai ARWU Ranking 2022)

- ❖ NAAC Accreditation with A++ grade (3.66 out of 4)

- ❖ The 173rd best Institution in Asia (QS - Asia University Rankings 2023)

School of Mechanical Engineering (SMEC)

The School of Mechanical Engineering is amongst the premier schools of VIT functioning right from 1984. The school has five departments with a team of highly qualified faculty members, many holding Ph.D. from the elite institutes across the globe, to teach and train the best minds of this country.

Strengths of Mechanical Engineering at VIT

- ❖ Three of the Bachelor's Degree Programme offered by the School, B.Tech. Mechanical Engineering, B.Tech. Mechanical with Specialization in Automotive Engineering, B.Tech. Production Engineering and B.Tech. Mechanical with Specialization in Energy Engineering are accredited by ABET.
- ❖ Sophisticated Laboratories - 30+ Labs and 4 Research Centres DST-FIST sponsored Labs.
- ❖ MoUs with Universities abroad & Approval of International PG program through Erasmus+ scheme.
- ❖ Significant research funding from International funding agencies such as Erasmus+, DST-UKIERI, Royal Academy of Engineering, Indo-German, Indo-Egypt, BRICS, USIEF.
- ❖ Significant research funding from several government agencies such as DST, DRDO, MNRE, CSIR, CVRDE, CPDO, IE, AR&DB, CVRDE, BRNS, ISRO, UGC, NRB, AICTE.

About the short course

The recent widespread adaptation of additive manufacturing has raised concerns on occupational safety and health implications of workers due to emissions, volatile organic compounds, unexpected system failure and breakdowns. The safe deployment of additive manufacturing technologies requires a comprehensive tools and techniques for assessment of safety and develop appropriate mitigation strategies or requirements. In vivo and in vitro simulation models, model-based analysis and digital twins using artificial intelligence and machine learning techniques will allow us to predict the systemic failures and their underlying causes in additive manufacturing process. However, there is a greater challenge in maintaining the safety of the additive manufacturing process as the engineers often lack the tools and methods to undertake sufficient analytical work on additive manufacturing process due to variety of AM processes and material compositions, nonlinear interaction of process parameters, uncertainty of material behavior, which limits generalizability of system models. In order to ensure safety and resilience in additive manufacturing process, there is a need for enhancing the engineering skills to reduce the emerging socio-technical knowledge gaps which can support us to develop an integrated and complementary technique that compensate for deficiencies or limitations in the current methods and practices of additive manufacturing. The knowledge needed ranges from basic understanding of the technology to selecting components for production, design and engineering, scaling and validating production. AM is not systematically taught in design and engineering curricula across universities, and few institutions propose specialized courses for AM. Few courses have focused only on technical aspect. However, some topics such as IP, liability, safety, quality assurance, sustainability and business models related to AM is not yet covered. This short-term course will address the aforementioned aspects of AM. Participants will have the opportunity to get hands-on experience in the operation of FDM printers.