

## Online FDP on “Emerging Areas in Manufacturing and Its Industrial Application”

### About the Institution

Vimal Jyothi Engineering College (VJEC) is an educational project of the Archdiocese of Thalassery established in the year 2002 and is managed by Mesha Diocesan Educational Trust. The college is approved by AICTE and affiliated to APJ Abdul Kalam Technological University (KTU). VJEC is a self-financing catholic minority institution aiming at generating fervor for Engineering and Technology in students. Here we inspire, nurture and foster them to realize their career potential in the field of Engineering and Technology. Further, VJEC is an ISO 9001:2015 certified Institution and also accredited by NAAC and NBA. With profound insight into the resource requirements of the higher education system, VJEC has proudly set up world-class infrastructure complemented with intellectual capital in the form of competent faculty. Many of the facilities are way beyond the regulatory requirements aiming for learning beyond the syllabus to address the requirements of the industry. These material facilities along with value addition programs and student support systems are the integral facets of empowerment at VJEC. Digital library, industry supported project labs, language lab, and student chapters of professional bodies such as IEEE, ISOI, IETE, SAE, CSI offer an extensive range of resources, opportunities and services to the outcome based teaching learning process. Effective implementation of quality control processes ensure Engineering graduates with the expected level of knowledge, skill and attitude.

### About the Department

The Mechanical Engineering Department was established in the year 2004. The Department offers students the opportunity to pursue an exceptional, high quality education. It has been recognized as Research Centre to have interaction with KTU University, Kerala for collaborative research programme which leads to Ph.D. degree by research. The Department is one of the largest in terms of faculty, students, & activities and continues to lead and expand its activities in various directions. The Department has a distinguished faculty, dedicated staff and superb student body that effectively work together to fulfill the academic mission. The academic activities are supported by seven well equipped laboratories/research centres.

### About the Course

The current FDP emphasis on the developments of manufacturing in the arena. In the current era, manufacturing are the back-bone of the economy of a nation. There is a robust motivation for optimizing the design and manufacturing routes using experiments with high precision equipment's and computational techniques for modeling the processes. Next-generation materials include super-light materials and active materials that react to changes in their environment and ultimately smart materials that explain how they are doing. Advancement in health care, energy, computing and numerous other fields depend on new findings in materials science.

### Resource Persons

Eminent faculties from IITs, NITs, Industries, Research Organizations and Domain expert faculties from VJEC.

### Objectives

The participants will be able To communicate the modern and progressive inputs about manufacturing for the faculty, scientist and research scholars of the engineering Institution/University/R&D centers.

### Registration Fees

No registration fee for participants. E-Certificate will be provided for all registered participants.

### REGISTRATION FORM LINK

<https://forms.gle/NTzEoQ16tVmrfx9k8>



**VIMAL JYOTHI**  
ENGINEERING COLLEGE  
Affiliated to APJ Abdul Kalam Technological University &  
Kannur University | Approved by AICTE  
Under the Archdiocese of Thalassery



### One Week Online Faculty Development Programme On “Emerging areas in Manufacturing and its Industrial Application”

25.05.2020 - 30.05.2020



### Convenor

**Dr. S.Christopher Ezhil Singh, ME, VJEC**

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### Coordinators

**Dr.P.Sridharan, ME, VJEC**

**Mr.Mejo Francis, ME, VJEC**

**Mr.Ap pu C Kurian, ME, VJEC**

**Dr.Sreekanth, ME, VJEC**

### ORGANIZED BY

**DEPARTMENT OF MECHANICAL ENGINEERING**

**VIMAL JYOTHI ENGINEERING COLLEGE**

**Accredited by NAAC and NBA**

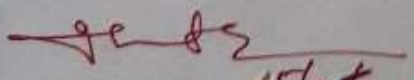
**Chemperi, Kannur, Kerala - 670 632. Website:www.vjec.ac.in**

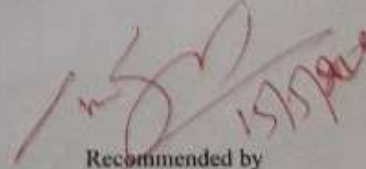


**VIMAL JYOTHI**  
**ENGINEERING COLLEGE**  
JYOTHI NAGAR, CHEMPERI - 670632, KANNUR  
Affiliated to APJ Abdul Kalam Technological University  
Approved by AICTE, ISO 9001: 2015 Certified  
Accredited by NBA (ME, CE, EE, CS), NAAC  
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## EVENT PROPOSAL FORM

1	Event type and Name	FDP on "Emerging Area's in Manufacturing"
2	Date and time	25-05-2020 to 30-05-2020
3	Participants/audience	Faculties, Research Scholars, PG student from Mechanical Engineering
4	Venue	Online Platform
5	Objectives	<ul style="list-style-type: none"><li>• Research and development in the area of Manufacturing.</li><li>• Curricular Gap Bridging relevant to Manufacturing.</li></ul>
6	Expected outcomes	<ul style="list-style-type: none"><li>• Faculties, Research Scholars, PG student will be able to get knowledge on research and development in Manufacturing.</li></ul>
7	Connected POs/PSOs	PO3,PO5, PO7 ,PSO1
8	Justification for POs/PSO's	<ul style="list-style-type: none"><li>• The session will impart knowledge on manufacturing in Mechanical Engineering and get an idea about progress in present research in Manufacturing.</li></ul>
9	Resource requirements	Nil
10	Any other Relevant Information	Nil
11	Responsible Persons	Dr.S.Christopher Ezhil Singh, Prof., ME.
12	Department	Mechanical Engineering

  
Proposal prepared by 15/05/2020  
Dr.S.Christopher Ezhil Singh, Prof., ME.

  
Recommended by  
Cdr. (Rtd.) Raju K Kuriakose, HOD ME



# Bio-medical Applications



SCIENCE HERALD

## Cutting Edge

### 3D-printed living human tissue soon

SCIENTISTS HAVE DEVELOPED A NEW 3D-PRINTING METHOD THAT CAN CREATE FUNCTIONAL, VASCULARIZED 3-D TISSUE STRUCTURES WITH MULTIPLE TYPES OF CELLS AND BLOOD VESSELS.

The quest to a proper way to ward growing human tissue replacement tissues through to use drug delivery and other uses, researchers said.

The method will also help bring about the building of fully functional replacement tissues to be used in the field of tissue engineering, researchers said.

"This is the first time that

very recent finding, 3D living tissue," said Jennifer Lewis, senior author of the study from the White Institute for Biologically Inspired Engineering at Harvard University.

These engineers have printed human blood vessels, but they have been limited to the size of a pipe about a third as thick as a blood vessel.

In this research, by using multiple layers of tissue, cells and blood vessels, they were able to create larger vessels, up to 100 micrometers in diameter, and have no good way to create the same density and other cells.

Researchers solve the problem by permanently creating a network of hollow tubes with a network of very thin-walled blood vessels that branch across and connect them, so researchers could

achieve this feat.

By using 3D tissue constructs with a predefined pattern, researchers needed functional cells with specific biological properties, so they developed a set of human fibroblasts containing key ingredients of living tissue.

To create blood vessels, they developed a tube which acted as a scaffold, rather than as a vessel.

This allowed the scientists to first print an interconnected network of hollow tubes, then print by filling the network and section the liquid out to create a network of hollow tubes, or vessels.

The Harvard team then modified the method to allow power and vessels.

"They printed 3D tissue constructs with a variety of cell types, resulting in an exactly patterned construct containing blood vessels and three different types of cells, a technique approaching the complexity of real tissue."

"While they reported human endothelial cells into the vascular network, these cells to grow the blood vessel lining. Knowledge of the cell and growing in the same construct requires an important step in ward printing human tissue, researchers said.

Lewis and her team are now focused on creating functional 3D tissues that are resilient enough to sustain drugs for safety and effectiveness. PI



zoom English (US) Google Translate

## Design for AM

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    graph TD
      A[Platform Design & Support Structures] --> B[Design for Additive Manufacture]
      B --> C[Topology Optimisation]
      B --> D[Shape & Sizing Optimisation]
      B --> E[Process Parameter Selection]
      C --> F[3D Printed Part]
      D --> G[3D Printed Part]
      E --> H[3D Printed Part]
  
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The diagram illustrates the Design for Additive Manufacturing (DfAM) process. It starts with Platform Design & Support Structures, which leads to Design for Additive Manufacture. From Design for Additive Manufacture, the process branches into three parallel optimization steps: Topology Optimisation, Shape & Sizing Optimisation, and Process Parameter Selection. Each optimization step results in a specific 3D printed part, such as a mechanical bracket or a bone-like structure.

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# VIMAL JYOTHI ENGINEERING COLLEGE

JYOTHI NAGAR, CHIMPERI - 520026, KRISHNA DISTRICT, AP  
RAJG 247 2544 RAJGIRI INSTITUTIONS



Capabilities of full production  
35,000 – 40,000 per year

**30%**  
COST EFFICIENCY  
IMPROVEMENT

**25%**  
WEIGHT  
REDUCTION

**95%**  
INVENTORY  
REDUCTION



**20:1**  
PARTS

**5X** MORE  
DURABLE



HO/26

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE



## Applications of Microwave Energy in Manufacturing



**Apurba Kumar Sharma**  
Professor in Mechanical and Industrial Engineering Department  
Coordinator, Design Innovation Center  
Indian Institute of Technology Roorkee



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List of Participants attended the FDP

Sl.No	Title	Name of Faculty	Gender	Institution Name with Address	Department	Email.ID
1.						
1.	Mr	A JUDE FELIX	Male	Mar Ephraem college of engineering and technology	Mechanical	ajudefelix@gmail.com
2.	Mr	A Unni Krishnan	Male	Noorul Islam Centre for Higher Education	Mechanical Engineering	unnikrishnan230575@gmail.com
3.	Mr	A VADIVEL	Male	Sri Ramakrishna Engineering College Coimbatore	Mechanical engineering	vadivel.ayyakkannu@srec.ac.in
4.	Mr	A. SIMON CHRISTOPHER	Male	V V COLLEGE OF ENGINEERING	MECHANICAL ENGINEERING	tsysimon@gmail.com
5.	Dr	A.Arun Negemiya	Male	Sri Shakthi Institute of Engineering and Technology, Coimbatore	Mechanical Engineering	arunnegemia@gmail.com
6.	Dr	A.Benham	Male	Malabar Institute of Technology, Kannur.	Mechanical Engineering.	principal@mitkannur.ac.in
7.	Dr	A.Krishnaraju	Male	Mahendra	Mechanical	akrgen@gmail.com
8.	Dr	A.Raveendra	Male	Mallareddy Engineering college,Secunderabad	Mechanical Engg	ravi.akunuru.a@gmail.com
9.	Mr	A.Saravanan	Male	Saranathan College of Engineering, Venkateswara Nagar, Panjappur, Trichy	Department of Mechanical Engineering	varunsarav@gmail.com
10.	Dr	A.SHANMUGAM	Male	Kongu Engineering College Erode Tamilnadu	Mechatronics engineering	vickyshanmugam@gmail.com
11.	Dr	ÆERUL FRANCO P	Male	University College of Engineering Nagercoil Konam	Mechanical Engineering	arulfran@gmail.com
12.	Dr	Abhijeet Malge	Male	MIT Academy of Engineering	Mechanical	ammalge@mech.mitaoe.ac.in
13.	Mr	ABILESH V	Male	ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY, PALKULAM	MECHANICAL ENGINEERING	abiles21@gmail.com
14.	Mr	ABINS ALI	Male	KMEA Engineering College	Mechanical Engineering	aba.me@kmeacollege.ac.in
15.	Mr	Abraham subaraj.M	Male	Bethlehem institute of engineering	Mechanical	masubaraj@gmail.com
16.	Mr	Ajay Aravind	Male	St. Thomas College of Engineering and Technology, Sivapuram PO, Mattanur, Kannur, Kerala	Mechanical Engineering	ajaravind92@gmail.com
17.	Mr	Ajaykumar R	Male	Satyam college of engineering and technology aralvoimozhi, kanyakumari district		
18.	Mr	Aji Augustine	Male	VJEC	Aeronautical	aajay06990@gmail.com
19.	Mr	AJIN ELIAS ALEX	Male		Mechanical Engineering	



		Annamalai				
470.	Mr	VINU	Male	Ponjesly college of engineering	Mechanical engineering	vinuvin56@gmail.com
471.	Dr	Vishal John Mathai	Male	Amal Jyothi College of Engineering, Kanjirappally, Kerala	Mechanical Engineering	vishaljohnmathai@amaljyothi.ac.in
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473.	Mr	Vishnu Narayan	Male	Providence College Of Engineering	Mechanical	vishnu.n@providence.edu.in
474.	Dr	Y.R.ANNIE BESSANT	Female	St.XAVIERS CATHOLIC COLLEGE OF ENGINEERING	ECE	annie@sxcce.edu.in
475.	Mr	Y.Thooyavan	Male	Bethlehem Institute of Engineering,karungal, kanyakumari-Dist, Tamilnadu.	Mechanical engineering	ythooyavan.ty@gmail.com
476.	Mr	Yabesh T	Male	Bethlehem Institute of engineering, Laryngeal.	Mechanical engineering	Tyabeshnathen@gmail.com
477.	Mr	Yogeesha C	Male	Jyothy Institute of Technology	Mechanical Engineering	yogeesha.c@jyothyit.ac.in



96200

Feed Back Log of "Emerging Areas in Manufacturing" - Google Forms

Mobile Number

182 responses

- 9497368899
- 9944945562
- 9442177584
- 9952047764
- 9500147350
- 9488885995
- 9179325534
- 9620417638
- 09892198501

Name of the State

182 responses

