Workshop on

3D Printing Technology for Healthcare

- Organized by Protoshop @ Venture Center -

Potential Gains	• To learn the importance of 3D Printing technology in healthcare sector which includes development of artificial organs, drug delivery and personalized medicine. • To understand the recent technology development and challenges with the help of case studies delivered by entrepreneurs working in Bio-printing. • Live demonstration of the 3D printer.
Organized by	Protoshop @ Venture Center
For whom	• Industry Professionals • Innovators & Entrepreneurs • Students & 3D Printing Enthusiasts
When	**Saturday | 23 July 2022 |Time : 10.00 am to 1.00 pm**
Where	Training room, 100 NCL Innovation Park, Dr. Homi Bhabha Road, Pune
Contact	**Technical queries:** Ms. Sayali Kothmire| sayali@web.venturecenter.co.in | +91-9172232215 **Registration queries:** Ms. Lipika Biswas | eventsdesk@venturecenter.co.in | +91-9156465137
Registration	Fees: Rs. 500 **Registration is mandatory** • Registration Process: o Step 1: Interested participants need to fill in registration form at the o **Register here:** http://tinkeringlab.co.in/events-2/ o Step 2: Payment details will be shared via email to participants post screening of registration details and seat will be confirmed only after receipt of payment. **NOTE:** • More details at: http://tinkeringlab.co.in/events-2/ • **REGISTRATIONS AND FINAL PAYMENT DEADLINE Registration closes once 20 seats are full or on 20 July 2022 (whichever comes sooner)** • ***Fees paid is not refundable and non transferable under any circumstances*** • The organizers reserve the right to accept or refuse or delay registrations so as to optimize the composition of the group and hence maximize learning for all participants

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Introduction

Additive manufacturing (AM) is an exciting new method useful for various healthcare applications as it has significant potential to customize solutions for patients. The AM market is expected to grow with an unprecedented CAGR > 20% and reach a volume of 10 billion USD. This talk will provide an overview of the current techniques and materials of AM useful in various healthcare applications like implants, surgical guides, tools, instruments, personalised medicines, bioprinting etc.

Event Outline

This Course on the 3D Printing Technology for Healthcare contains the following:

- Introduction of 3D Printing Technology for Healthcare/Medical & pharmaceutical domain.
- Applications & Different challenges in Healthcare domain.
- Custom implants for cranial, orthopedic and maxillofacial applications.
- Concept of Bio-Printing.
- Introduction of concept of Bio-Printing,
- What is tissue engineering and the benefits
- Live demonstrations.

Workshop Includes

- Access to restricted website with online compilation of resources.
- Membership in mailing list to other workshops by Venture Center.
- Certificate of participation.

Workshop Schedule

Saturday , 23 July 2022			
Time (hrs)	**Topic and Contents**	**Venue**	**Faculty**
0930-0945	Registration	Foyer area	-
0945-1000	Welcome and background of Venture Center	Training room	Ms. Sujaya Ingale
1000-1100	Introduction Additive manufacturing / 3D printing in healthcare	Training room	Dr. Anuya Nisal
	Applications & Different challenges in Healthcare domain.	Training room	Dr. Anuya Nisal
1100-1115	Tea/Coffee break	Foyer area	
1115-1145	Entrepreneurial case studies (Online Zoom session)	Training room	Mr. Ranjith Kumar Velusamy
1145-1245	Introduction of concept of Bio-Printing, What is tissue engineering and the benefits	Training room	Mr. Suhridh Sundaram
	Insights bio-printing research	Training room	Mr. Suhridh Sundaram
1245-1300	Live Demonstrations	Training room	
	Feedback and Valedictory	Training room	Sujaya Ingale

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Workshop faculty (in alphabetical order of last names)	
 **Dr. Anuya Nisal**	**Dr. Anuya Nisal** **Principal Scientist, CSIR-National Chemical Laboratory** **Founder – Serigen Mediproducts Pvt. Ltd.** Dr. Anuya Nisal is a Principal Scientist in the Polymer Science and Engineering Dept. at CSIR-National Chemical Laboratory (NCL). She did her Ph.D. in Chemical Engineering from Indian Institute of Technology, Mumbai and her masters in Materials Science and Engineering from University of Delaware, USA. She has prior experience of working as a Scientist in the GE Plastics John F. Welch technology Center. At NCL, she leads a group performing scientific research in the areas of recycling of polymers, biomaterials, medical devices and additive manufacturing. She has successfully led and executed several projects with government agencies such as CSIR, DBT, DST-SERB, BIRAC, etc. Her work has resulted in 25 peer reviewed journal publications and 6 patent families. She has also collaborated with leading local and global industries and has been actively involved in transferring technologies from lab. She is also the lead inventor for a technology patent on silk fibroin scaffolds for tissue regeneration. Based on this technology, she has floated a start-up Serigen Mediproducts Pvt. Ltd. along with her colleagues at CSIR-NCL. Serigen is the winner of several national and international prestigious awards. Dr. Anuya has been recognised through several awards including the Indian National Academy of Engineering – Young Entrepreneur Award 2020, Leaders in Innovation Fellowship from Royal Academy of Engineering, UK, 2019 and a TIE-BIRAC-WiNER award for Women in Entrepreneurial Research.
 **Mr. Suhridh Sundaram**	**Mr. Suhridh Sundaram** Suhridh has always been inclined to problem solving. After graduating from IIT Madras, he has worked on multiple startups which are deep technology focused, in the fields of aerospace and drone-tech, fintech, healthcare and enterprise software development. At Avay Biosciences, he is now involved in research and manufacturing of 3D bioprinters to further develop the field of tissue engineering.
 **Mr. Ranjith Kumar Velusamy**	**Mr. Ranjith Kumar Velusamy** **Co-founder Biodimension Technology** Ranjith is M.Tech (by research) Biotechnology from VIT University and B.Tech (Biotechnology) from KSR College of Technology, Anna University. He has received best outgoing student for the batch 2010-2014.He got Research award for the exemplary research during Master's degree. He co-founded Biodimension Technology with 2 other Biotechnologists, and he is a Co-Founder & Chief Innovation Officer, He handles the Fundraising, Collaborations and Business Development wing of the Organization. He had worked with organizations like CP group- Thailand, Syngene International as a Future Leader Trainee, and Anthem Biosciences as a Business Development. He has total of 6 years in the industry, expertise in B2B sales and international business.

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In-house team (in alphabetical order of last names)	
 **Ms. Sujaya Ingale**	**Sujaya Ingale** **Head - Scientific Initiatives** Sujaya is Head - scientific initiatives - venture center. She leads and coordinates Scientific & Prototyping Initiatives at Venture Center. She manages scientific resources, facilities, services and ensures Environment Health and Safety compliance at Venture Center. She is M.Sc in Microbiology (Pune University). She has several years of research experience in biotechnology projects, experience in setting up and oversight of Venture Center's Lab facilities, running and assisting in proof-of-concept projects, and in creating, planning and organizing technical and scientific workshops for life sciences students and scientists.
 **Sayali Kothmire**	**Sayali Kothmire** **Coordinator - Protoshop, Venture Center** Sayali is Coordinator-Protoshop at Venture Center. She is B.E.(Instrumentation & Control Engineer) from University of Pune. She is running current facilities in Protoshop. She operates all the instruments in lab, provides training, plans & executes setting up & maintenance work in Protoshop also involved in creating, planning and organizing technical and scientific workshops & hands-on lab exercises with Tinkering lab instruments.
 **Anjan Kumar N**	**Anjan Kumar N** **Senior Engineer - Product Design & Prototype, Venture Center** Anjan is an ENGINEER - PRODUCT DESIGN & PROTOTYPE at venture center graduated from CMR Institute of Technology Bengaluru in B.E Mechanical Engineering. He is responsible for running facilities at protoshop and also setting up technical and non – technical workshops.

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Organized by	
PROTOSHOP	About Protoshop Protoshop combines Tinkering lab and Prayashala, which are the prototyping facilities at Venture Center. Protoshop is an initiative of Venture Center (a technology business incubator hosted by CSIR-NCL) with the generous support from in-house funds and the host Institution. It aims at providing services to the Inventors and Entrepreneurs to design and build their prototypes and bringing their ideas into life. For more information about Protoshop: http://www.protoshop.in/

Supported by	
VENTURE CENTER 15 years of service to the Nation	Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology's National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center's focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit: http://www.venturecenter.co.in/

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