

Department of Biotechnology

Certificate Course

on

Medical Biomaterials

2nd – 18th August, 2021

Course Coordinators:

Mr. J. Hariharan & Mr. S. Nagavignesh

Assistant Professor, Dept. of Biotechnology, SVCE

Resource Persons:

Dr. Mukesh Doble

Professor, IIT Madras

Ms. Firoza Kothari

Co-Founder & CTO, M/s. Anatomiz 3D Medtech, Pvt. Ltd. Mumbai

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ANNEXURE 1 - BROCHURE

SRI VENKATESWARA COLLEGE OF ENGINEERING

(An Autonomous Institution - Affiliated to Anna University, Chennai)
Pennalur, Sriperumbudur Tk - 602117

DEPARTMENT OF BIOTECHNOLOGY

In Association with

ANATOMIZ3D MEDTECH PVT. LTD, MUMBAI

Online Certificate Course on

MEDICAL BIOMATERIALS

DATE : 02-08-21 To 18-08-21 (15 Days) TIME : 6:30 PM - 7:30 PM

ABOUT THE COURSE

Biomaterial is any biocompatible material that is used for replacing, repairing, and augmenting damaged body tissues. The global biomaterials market is estimated to cross 175 Billion USD by 2022, in India the market size runs into several thousand crores, with a fast growth. They have several applications in the field of healthcare/medicine. Metals, polymers, ceramics and biopolymers and combinations of these are used as implants, prostheses, devices or drug delivery system. Materials which are implanted in the body have to satisfy several conditions so that it can remain in the body for a long duration, perform its intended action without causing any adverse reaction to the host. Depending upon the duration, location and intended function the biomaterial has to be appropriately designed which is still a research challenge. This is a highly interdisciplinary area requiring support from engineers, biologists, chemists and clinicians.

RESOURCE PERSONS



Prof. Mukesh Doble
IIT Madras



Ms. Firoza Kothari
Founder and CTO
Anatomiz 3D Medtech Pvt. Ltd

OBJECTIVE OF THE COURSE

The objective of this "Medical Biomaterials" course is to train the undergraduates, postgraduates and researchers to gain insights on fundamentals of biomaterials, its types, development, testing strategies and their compatible medical applications. The course also highlights the application of 3D printing in medical biomaterials.

COURSE OUTCOME

- At the end of the course student will be able to explain
- ☞ The types of biomaterials
 - ☞ Role of biomaterials in implants and wound healing
 - ☞ Methods of manufacturing biomaterials
 - ☞ Application of biomaterials in health care/medicine

ELIGIBILITY

The participants who are studying the following degrees and disciplines are encouraged to apply for this course, but there is no restriction for other degrees/discipline to apply.

DEGREE : B.Tech/M.Tech/B.E/M.E/B.Sc/M.Sc/B.Pharm/M.Pharm/M.B.B.S/Ph.D

DISCIPLINE: Biotechnology, Medicine, Biomedical Engineering, Mechanical Engineering, Material Science, Pharmacy, Microbiology, Biochemistry and Life sciences.

COURSE FEES (Incl. of Tax) : Rs. 1000 ; GROUP REGISTRATION : Rs. 750

COURSE STRUCTURE AND CONTENTS

15 hours of expert lecture covering various topics mentioned below, but not only limited to them.

- ☞ Historical perspective of Biomaterials
- ☞ Types of biomaterials - Metal, polymers, Ceramics, biopolymers
- ☞ Physico/chemical and biological properties of biomaterials
- ☞ Biofilm/Biosorption/biodegradation/Biocorrosion
- ☞ Analytical techniques/characterisation tools
- ☞ Drug delivery
- ☞ Sterilisation of biomaterials
- ☞ Future perspective

MODE OF DELIVERY : Online

ONLINE ASSESMENT

An online Multiple Choice Questions based assesment and assignment based evaluation will be conducted at the end of the course.

HOW TO APPLY

Interested participants can register using the following link. While registering, participants should feed the online payment details (Transaction Number, Date of Payment, Participant Account Number, Bank Name) made to the following bank account in the registration form.

BANK DETAILS (NEFT/RTGS)

Account Name & No: Principal, 467302331
Bank Info: Indian Bank, Sriperumbudur
IFSC Code: IDIB000S080
MICR No: 600019112

REGISTRATION LINK (Click to Register)

<https://forms.gle/3o726Fj6GCT2HuAa8>

REGISTRATION DEADLINE

30th July, 2021

COURSE COORDINATORS

Mr. J. Hariharan, Asst. Professor
Mobile: 9944592572

Mr. S. Nagavignesh, Asst. Professor
Mobile: 9994506873

Email : biocc@svce.ac.in

For Queries Contact through Above Numbers or Email



ANEXURE 2 – PARTICIPANTS LIST

External Participants: 55; Internal Participants: 8; Total: 63

Sl. No.	CRN No.	Name	Affiliation
1	210222001	Sujithra Gnanasekar	Anna University
2	210222002	Girija K V	Arunai Engineering College
3	210222003	Hariharan K	Arunai Engineering College
4	210222004	Priyadharshini S	Arunai Engineering College
5	210222005	Dhivyadharshini S	Arunai Engineering College
6	210222006	Ishwarya K	Arunai Engineering College
7	210222007	Abinaya B	Arunai Engineering College
8	210222008	Jayashree J	Arunai Engineering College
9	210222009	Harini Nithyanandam	Arunai Engineering College
10	210222010	Arunodhaya K N	Arunai Engineering College
11	210222011	Yogesh S	Arunai Engineering College
12	210222012	Keerthana H	Arunai Engineering College
13	210222013	Ajith Kumar S	Arunai Engineering College
14	210222014	Nivetha S	Arunai Engineering College
15	210222015	Shalini P	Arunai Engineering College
16	210222016	Monica R	Arunai Engineering College
17	210222017	Nisha Krishnamoorthy	Arunai Engineering College
18	210222018	Selvaraj S	Arunai Engineering College
19	210222019	Nivetha B	Arunai Engineering College
20	210222020	Ragavendra S	Arunai Engineering College
21	210222021	Tonio Ranjitha Amritha N	Loyola College
22	210222022	Harini Loganathan	Rajalakshmi Engineering College
23	210222023	Abirami Krishnan	Rajalakshmi Engineering College
24	210222024	Kalhara P	Rajalakshmi Engineering College
25	210222025	Aghilan S	Rajalakshmi Engineering College
26	210222026	Pontiana Ritika C	Rajalakshmi Engineering College
27	210222027	Akshaya Mukunthan	Rajalakshmi Engineering College
28	210222028	Shruti R	Rajalakshmi Engineering College
29	210222029	Elakkiya M	Rajalakshmi Engineering College
30	210222030	Poorna Padma M	Rajalakshmi Engineering College
31	210222031	Harshini V	Rajalakshmi Engineering College
32	210222032	Sridevi R	Rajalakshmi Engineering College
33	210222033	Kaviya D	Rajalakshmi Engineering College
34	210222034	Tulsipriya Chakraborty	Rajalakshmi Engineering College
35	210222035	Ramashree T	SASTRA Deemed to be University
36	210222036	Archana Menon	SASTRA Deemed to be University
37	210222037	Trilochanaa M	SASTRA Deemed to be University
38	210222038	Sivakumar R	SRC, SASTRA Deemed to be University
39	210222039	Shwetha Kannan	SASTRA Deemed to be University
40	210222040	Vaishnavi R	SASTRA Deemed to be University

41	210222041	Mahesh N	SRC, SASTRA Deemed to be University
42	210222042	Sampathkumar P	SRC, SASTRA Deemed to be University
43	210222043	Kiruthika M	SASTRA Deemed to be University
44	210222044	Bhuvaneswari S	SRC, SASTRA Deemed to be University
45	210222045	Ishvarya Narayanan	SASTRA Deemed to be University
46	210222046	Gurusaran K	SASTRA Deemed to be University
47	210222047	Manikandan K	SASTRA Deemed to be University
48	210222048	Suchitra M R	SRC, SASTRA Deemed to be University
49	210222049	Harini S	Sree Sastha Institute of Engineering and Technology
50	210222050	Ramya R	Sree Sastha Institute of Engineering and Technology
51	210222051	Firdous Mujeeb	Sri Venkateswara College of Engineering
52	210222052	Deepak S	Sri Venkateswara College of Engineering
53	210222053	Naven R	Sri Venkateswara College of Engineering
54	210222054	Harinee S	Sri Venkateswara College of Engineering
55	210222055	Kawya S	Sri Venkateswara College of Engineering
56	210222056	Delli Karthikeyan R	Sri Venkateswara College of Engineering
57	210222057	Nivedha R	Sri Venkateswara College of Engineering
58	210222058	Sowmiya V	Sri Venkateswara College of Engineering
59	210222059	Balakumar S	SRC, SASTRA Deemed to be University
60	210222060	Krubaa P	Vellore Institute of Technology
61	210222061	Lawanbha Lyngdoh	Veltech Rangarajan Dr Sagunthala R & D Institute of Science and technology
62	210222062	Shanley Daniel	Women's Christian College
63	210222063	Varshini Jayakanth	Sri Venkateswara College of Engineering

ANNEXURE 3 – SCHEDULE

S.No	Date	Schedule	Resource Person
01	02/08/2021	Medical Biomaterials - Historical perspective	Prof. Mukesh Doble IIT Madras
02	03/08/2021	Types of biomaterials -Metal and polymers	Prof. Mukesh Doble IIT Madras
03	04/08/2021	Biomaterials in 3D Printing - Applications	Ms. Firoza Kothari Founder and CTO Anatomiz 3D Medtech
04	05/08/2021	Types of biomaterials – Ceramics and biopolymers	Prof. Mukesh Doble IIT Madras
05	06/08/2021	Physicochemical properties of biomaterials	Prof. Mukesh Doble IIT Madras
06	07/08/2021	Biological properties of biomaterials	Prof. Mukesh Doble IIT Madras
07	09/08/2021	Biofilm studies on Biomaterials	Prof. Mukesh Doble IIT Madras
08	10/08/2021	Biosorption studies on Biomaterials	Prof. Mukesh Doble IIT Madras
09	11/08/2021	Biodegradation on Biomaterials	Prof. Mukesh Doble IIT Madras
10	12/08/2021	Biocorrosion on Biomaterials	Prof. Mukesh Doble IIT Madras
11	13/08/2021	Analytical techniques in Biomaterials	Prof. Mukesh Doble IIT Madras
12	14/08/2021	Characterization tools in Biomaterials	Prof. Mukesh Doble IIT Madras
13	16/08/2021	Drug delivery studies in Biomaterials	Prof. Mukesh Doble IIT Madras
14	17/08/2021	Sterilization studies in Biomaterials	Prof. Mukesh Doble IIT Madras
15	18/8/2021	Future perspective in Biomaterials	Prof. Mukesh Doble IIT Madras

ANNEXURE 4 – PHOTOS/SCREENSHOTS



ANNEXURE 5 - SUMMARY REPORT

Department of Biotechnology

Report on the Certificate Course on Medical Biomaterials

2nd – 18th August, 2021

A certificate course on “Medical Biomaterials” in association with “M/s. Anatomiz 3D Medtech Pvt. Ltd., Mumbai” was organized by Department of Biotechnology, Sri Venkateswara College of Engineering, Sriperumbudur from 2nd – 18th August, 2021. Mr. J. Hariharan and Mr. S. Nagavignesh coordinated to conduct this certificate course. It is an online certificate course with 15 hours duration. Every day the course was conducted during 6.30 pm – 7.30 pm. The total participant strength in this certificate course is 63, which includes 55 external participants and 8 internal participants.

On the first day of the certificate course the inauguration function started at 6.10 pm. Dr. V. Sumitha, HOD – Incharge, Department of Biotechnology, SVCE, welcomed all the participants and the resource person. Followed by that, Mr. S. Nagavignesh, Assistant Professor, SVCE, introduced the resource person, Dr. Mukesh Doble, Professor IIT Madras. Later on, a lecture was delivered by the resource person on a topic called “historical perspective of medical biomaterial”. During this 15 days course at the end of each day the queries of the participants regarding the lecture was addressed by the resource persons. The list of lectures delivered on each day is provided in annexure 3.

On 4th August, Mr. J. Hariharan, Assistant Professor, SVCE, introduced the resource person Ms. Firoza Kothari, Co-Founder and CTO of M/s. Anatomiz 3D Medtech Pvt. Ltd., Mumbai. She delivered a lecture on applications of 3D printing in medical field.

On 18th August, 2021, the last day of the certificate course, an online exam was conducted to assess the performance of the participants, followed by which the valedictory function for the course was conducted. During the function Dr. V. Sumitha, HOD-Incharge, Department of Biotechnology, SVCE thanked the resource persons and the participants. Followed by that a very good feedback was received from the participants. The participants appreciated the department for conducting certificate course in novel areas such as Medical Biomaterials. After the feedback session is over, Mr. J. Hariharan, Assistant Professor has given the vote of thanks and finally the course came to an end.



Mr. J. Hariharan & Mr. S. Nagavignesh

Coordinators



Dr. V. Sumitha

HOD-Incharge

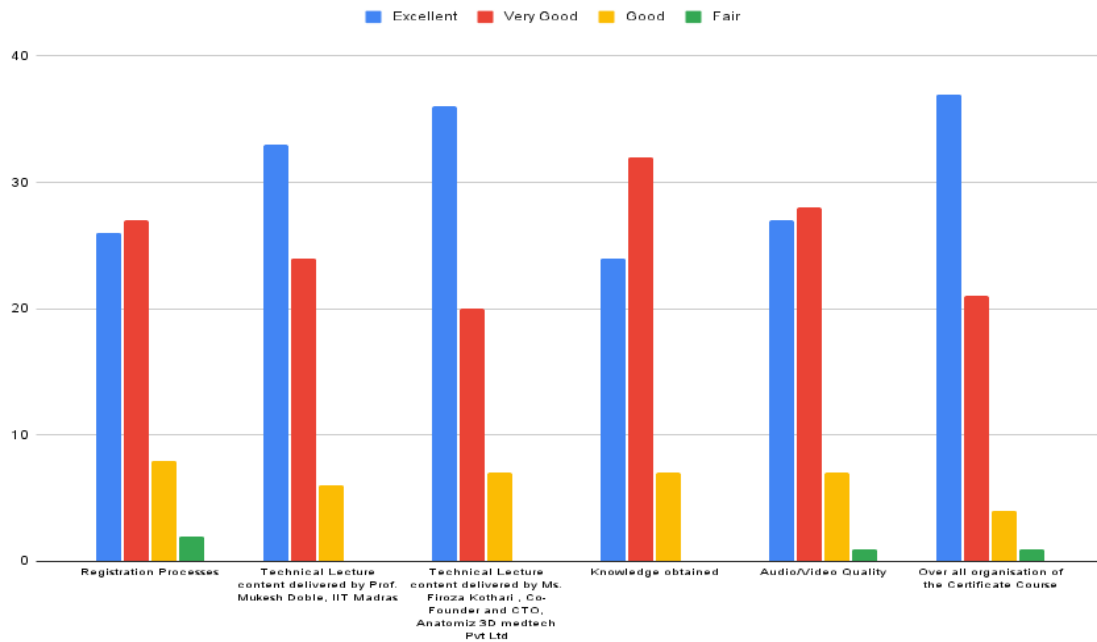
Head of the Department
Department of Biotechnology
Sri Venkateswara College of Engineering
Sriperumbudur Tk - 602 117, Tamilnadu, INDIA

ANNEXURE 6 – SAMPLE COPY OF CERTIFICATE

		S. No. CCA 0196
SRI VENKATESWARA COLLEGE OF ENGINEERING (An Autonomous Institution ; Affiliated to Anna University, Chennai) Pennalur, Sriperumbudur Tk. 602117 (TN), India		
CERTIFICATE		
		ANATOMIZ3D Medtech Pvt. Ltd.
This is to certify that the candidate mentioned below has completed the course KE02002 - Medical Biomaterials conducted by the Department of Biotechnology in association with Anatomiz3D Medtech Private Limited, Mumbai.		
Name	: Harini S	
Affiliation	: Sree Sastha Institute of Engineering and Technology	
Affiliation Location	: Chembarambakkam - 600123	
Date of Birth	: 23-09-2000	
Course Registration Number (CRN)	: 210222049	
Course Duration (in hours)	: 15	
Attended (in hours)	: 15	
Course Period	: 02 August to 18 August, 2021	
Competency (%)	: 72.00	
The Course content is attached overleaf		
Date: 21-Dec-21		
Place: Sriperumbudur		
		
This Certificate bears no correction and Not valid without the seal		 CONTROLLER OF EXAMINATIONS

ANNEXURE 7 – FEEDBACK RESPONSE

Feedback Responses



Category	Registration Processes	Technical Lecture content delivered by RP1*	Technical Lecture content delivered by RP2*	Knowledge obtained	Audio/Video Quality	Over all organisation of the Certificate Course	Average
Excellent	26	33	36	24	27	37	30.5
Very Good	27	24	20	32	28	21	25.3
Good	8	6	7	7	7	4	6.5
Fair	2	0	0	0	1	1	0.7

Resource Person 1 - Prof. Mukesh Doble, IIT Madras

Resource Person 2 - Ms. Firoza Kothari , Co-Founder and CTO, Anatomiz 3D medtech Pvt Ltd

ANNEXURE 8 – COPY OF EMAIL COMMUNICATION



HARIHARAN J BIO <hariharan@svce.ac.in>

Invitation for the "Certificate Course on Medical Biomaterials"

Mukesh Doble <mukesh.doble0@gmail.com>

To: HoD BIO <hodbt@svce.ac.in>

Cc: HARIHARAN J BIO <hariharan@svce.ac.in>, NAGA VIGNESH S BIO <Nagavignesh@svce.ac.in>

Wed, Jul 28, 2021 at 12:51 PM

Dear **Dr. V. Sumitha**

Thank you very much for your mail

i will be pleased to conduct the certificate course on " Medical Biomaterials" from 2nd August 2021 to 18th August 2021.(6.30 to 7.30 pm)

I will get in touch with NagaVignesh before the start of the programme for further details

thanks

best wishes

Mukesh

[Quoted text hidden]

ANNEXURE 9 – REGISTRATION FEE DETAILS

S. No	Participant Name	Name of the Participant's Institute	Amount Paid	NEFT/RTGS Transaction Number Name of the Bank	Date
1	Ms. Kaviya D	Rajalakshmi Engineering College	750	LT1707194439553 SBI	17-7-2021
2	Ms. Pontiana Ritika C	Rajalakshmi Engineering College	750	119834338851 ICICI Bank	17-7-2021
3	Ms. Poorna Padma M	Rajalakshmi Engineering College (Autonomous)	750	UTR: 119811896503 Canara Bank	17-7-2021
4	Mrs. Ramashree T	SASTRA UNIVERSITY	750	N201211572842081 HDFC	20-7-2021
5	Ms. Archana Menon	SASTRA UNIVERSITY	750	120161449053 City Union Bank	20-7-2021
6	Dr. M.R. Suchitra	SASTRA DEEMED UNIVERSITY, SRC, KUMBAKONAM	2000	120163627618 HDFC	20-7-2021
7	Ms. P. Krubaa	Vellore Institute of Technology		120163627618 HDFC	20-7-2021
8	Ms. Ishvarya Narayanan	SASTRA UNIVERSITY	750	CIUBH21202014486 City Union Bank	21-7-2021
9	Ms. Tonio Ranjitha Amritha N	Loyola College, Chennai.	1000	120223355192 Kotak Mahindra Bank	21-7-2021
10	Dr. S. BHUVANESWARI	SASTRA DEEMED UNIVERSITY, SRC, KUMBAKONAM	1000	IRQ7187802 STATE BANK OF INDIA, WORAIYUR BRANCH, TRICHY -3	25-7-2021
11	Mr. Gurusaran K	SASTRA DEEMED UNIVERSITY	750	CIUBH21206002383 City Union Bank	25-7-2021
12	Ms. Shwetha Kannan	SASTRA DEEMED UNIVERSITY	750	CIUBH21207045043 City Union Bank	26-7-2021
13	Ms. TRILOCHANAA M	SASTRA DEEMED UNIVERSITY	750	CIUBH21208002572 City Union Bank	27-7-2021
14	Ms. Vaishnavi R	SASTRA DEEMED UNIVERSITY	750	CIUBH21208000987 City Union Bank	27-7-2021
15	Ms. Kiruthika M	SASTRA DEEMED UNIVERSITY	750	CIUBH21208001280 City Union Bank, Thirumalaisamudram	27-7-2021
16	Ms. Shalini. P	Arunai Engineering College, Tiruvannamalai.	3750	120813501061 Canara Bank	27-7-2021
17	Ms. K.N.Arunodhaya	Arunai Engineering College, Tiruvannamalai.		120813501061 Canara bank	27-7-2021
18	Ms. B NIVETHA	Arunai Engineering College, Tiruvannamalai.		120813501061 Canara Bank	27-7-2021
19	Ms.K .ISHWARYA	Arunai Engineering College, Tiruvannamalai.		120813501061 canara bank	27-7-2021
20	Ms.Abinaya.B	Arunai Engineering College, Tiruvannamalai.		120813501061 Canara Bank	27-7-2021
21	Ms. Akshaya Mukunthan	Rajalakshmi Engineering College	750	IMPS120810888275 Karur Vysya Bank	27-7-2021
22	Mr.AJITH KUMAR . S	Arunai Engineering College, Tiruvannamalai.	8250	120950212658 Indian Bank	28-7-2021
23	Ms.Keerthana. H	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian bank	28-7-2021
24	Ms.S. DHIVYADHARSHINI	Arunai Engineering College, Tiruvannamalai.		120950212658 INDIAN BANK	28-7-2021
25	Ms.MONICA R	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian Bank	28-7-2021

S. No	Participant Name	Name of the Participant's Institute	Amount Paid	NEFT/RTGS Transaction Number Name of the Bank	Date
26	Ms. Jayashree J	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian Bank	28-7-2021
27	Ms. Priya Dharshini	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian branch	28-7-2021
28	Mr. SELVARAJ S	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian bank	28-7-2021
29	Ms. Nivetha. S	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian Bank	28-7-2021
30	Mr. Ragavendra.S	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian Bank	28-7-2021
31	Ms. Nisha krishnamoorthy	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian bank	28-7-2021
32	Ms. Harini.N	Arunai Engineering College, Tiruvannamalai.		120950212658 Indian bank	28-7-2021
33	Ms. SHANLEY DANIEL	ST.PETER'S INSTITUTE FOR HIGHER EDUCATION AND RESEARCH	1000	324594289 PUNJAB NATIONAL BANK	29-7-2021
34	Ms. Tulsipriya Chakraborty	Rajalakshmi Engineering College	750	2021072925690724 Karnataka bank	29-7-2021
35	Mr. Manikandan K	SASTRA UNIVERSITY	750	CIUBH21211000681 City Union Bank	30-7-2021
36	Dr.S.BALAKUMAR	SRC, SASTRA Deemed to be University	1000	CIUBH21211022831 CUB	30-7-2021
37	Ms. Varshini Jayakanth	-	1000	835766165 Axis Bank	30-7-2021
38	Dr. R. SIVAKUMAR	SRC, SASTRA Deemed to be University	1000	CIUBH21211024098 CUB	30-7-2021
39	Dr. Mahesh Narayanan	SRC, SASTRA Deemed to be University	1000	CIUBH21211020672 CUB	30-7-2021
40	Ms. S. HARINI	Sree Sastha Institute of Engineering and Technology Chennai	1000	121170542484 INDIAN BANK	30-7-2021
41	Ms. Ramya.R	Sree Sastha Institute of Engineering and Technology Chennai	1000	121108017606 Canara Bank	30-7-2021
42	Ms. R. Sridevi	Rajalakshmi Engineering College	750	121111896336 CUB	30-7-2021
43	Ms. Shruti. R	Rajalakshmi Engineering College	750	121121904638 CUB	30-7-2021
44	Ms. Kalhara P	Rajalakshmi Engineering College	750	121118304638 HDFC Bank	30-7-2021
45	Ms. HARINI L	Rajalakshmi Engineering college	750	N211211582759054 Indian Bank	30-7-2021
46	Ms. Abirami Krishnan	Rajalakshmi Engineering college	750	N211211582759450 Indian Bank	30-7-2021
47	Ms. Harshini V	Rajalakshmi Engineering College	750	N211211581890564 HDFC	30-7-2021
48	Elakkiya	Rajalakshmi Engineering College	750	N211211582803539 Indian Bank	30-7-2021
49	Aghilan.S	Rajalakshmi Engineering College	750	N211211582818190 Indian Bank	30-7-2021
50	Ms. Girija KV	Arunai Engineering College	2250	121117232415 Canara Bank	30-7-2021
51	Mr. Yogesh S	Arunai Engineering College		121117232415 Canara Bank	30-7-2021

S. No	Participant Name	Name of the Participant's Institute	Amount Paid	NEFT/RTGS Transaction Number Name of the Bank	Date
52	Mr. K.Hariharan	Arunai Engineering College		121117232415 Canara Bank	30-7-2021
53	P. SAMPATHKUMAR	SASTRA Deemed University	1000	IMPS 310721423182629 CUB	31-7-2021
54	Ms. Lawanbha Lyngdoh	Veltech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology	1000	119715305841 SBI	16-7-2021
55	Sujithra G	Anna University	1000	121317375596 SBI	1-8-2021
		Total Amount Rs.	44750		

ANNEXURE 10 – RECORDING OF THE EVENT

S. No	Date	Video Lecture Link	Resource Person
01	02/08/2021	Medical Biomaterials - Historical perspective	Prof. Mukesh Doble IIT Madras
02	03/08/2021	Types of biomaterials -Metal and polymers https://drive.google.com/file/d/18qTMhiZosWeVzumN_hGFvQOERs9sPOKA/view?usp=sharing	Prof. Mukesh Doble IIT Madras
03	04/08/2021	Biomaterials in 3D Printing – Applications https://drive.google.com/file/d/1QBFdSgnq4FH0W4ySsM8Vw4I9OyEs-g-8O/view?usp=sharing	Ms. Firoza Kothari Founder and CTO Anatomiz 3D Medtech
04	05/08/2021	Types of biomaterials – Ceramics and biopolymers https://drive.google.com/file/d/1P2gDGE_GfIAJ60Bj7i6ygEjioSrT4sB5/view?usp=sharing	Prof. Mukesh Doble IIT Madras
05	06/08/2021	Physicochemical properties of biomaterials https://drive.google.com/file/d/1V5dC05gyXp8zj5215_VsGFvnGIVjChOX/view?usp=sharing	Prof. Mukesh Doble IIT Madras
06	07/08/2021	Biological properties of biomaterials https://drive.google.com/file/d/1HGUWrGu5l5d1JC2lysHVA4CGIQJhbUi/view?usp=sharing	Prof. Mukesh Doble IIT Madras
07	09/08/2021	Biofilm studies on Biomaterials https://drive.google.com/file/d/1qZECmmqgWhvm5kl1MZfs-8tvULpJi_0m/view?usp=sharing	Prof. Mukesh Doble IIT Madras
08	10/08/2021	Biosorption studies on Biomaterials https://drive.google.com/file/d/1gF0dE_9ely3_q2OuwrvHUuTyfAGE26h4/view?usp=sharing	Prof. Mukesh Doble IIT Madras
09	11/08/2021	Biodegradation on Biomaterials https://drive.google.com/file/d/1vxU9untbEzoRjPmHMJxfO3D6va8sSUynf/view?usp=sharing	Prof. Mukesh Doble IIT Madras
10	12/08/2021	Biocorrosion on Biomaterials https://drive.google.com/file/d/1i7EaPtC9xSKPLf-Q-Y8MZNqD7tf2quBy/view?usp=sharing	Prof. Mukesh Doble IIT Madras
11	13/08/2021	Analytical techniques in Biomaterials https://drive.google.com/file/d/1hBq5CFwNAvurG1Jm0bMKirXmm50mv60n/view?usp=sharing	Prof. Mukesh Doble IIT Madras
12	14/08/2021	Characterization tools in Biomaterials https://drive.google.com/file/d/1ByTmdWVxt_MxR2sYpT6aEORPilwCYuP2/view?usp=sharing	Prof. Mukesh Doble IIT Madras
13	16/08/2021	Drug delivery studies in Biomaterials https://drive.google.com/file/d/1W-PythU_BSI5Prc9Dfxa9PeC21xffZdF/view?usp=sharing	Prof. Mukesh Doble IIT Madras
14	17/08/2021	Sterilization studies in Biomaterials https://drive.google.com/file/d/16cKdm2iYviGJ-f19V1Bgp2uxs7wHrxln/view?usp=sharing	Prof. Mukesh Doble IIT Madras
15	18/8/2021	Future perspective in Biomaterials https://drive.google.com/file/d/1u4TqxDQMAejezXVRI-xkrMDxFtiwklh1/view?usp=sharing	Prof. Mukesh Doble IIT Madras