

Report of the program

Program Name	DST STUTI (Department of Science & Technology-Synergistic Training program Utilizing the scientific and Technological Infrastructure)
Project Management Unit (PMU)	Institute of Chemical Technology, Mumbai
Host Institute Name	Bharati Vidyapeeth's (Deemed to be University) Poona College of Pharmacy, Pune
Training Program Title	Strategies and Approaches for Characterization of Pharmaceuticals and Biopharmaceuticals
Date	17 th -23 rd May 2022
Venue	Poona College of Pharmacy, Pune, Paud Rd, Rambaug Colony, Erandwane, Pune, Maharashtra 411038
Host Institute Coordinator	Dr. Hemant Kumar Jain
Mentors of Host Institute	Dr. Varsha Pokharkar & Dr. L. Sathiyarayanan
Principal of Host Institute	Dr. Atmaram P. Pawar

Submitted By

Bharati Vidyapeeth's (Deemed to be University)

Poona College of Pharmacy, Pune

Erandwane Educational Campus, Erandwane, Pune 411038 (Maharashtra)

Reaccredited with 'A+' grade by NAAC and NBA

17th rank in India by NIRF

ISO 9001-2015 Certified

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Email: pcp@bharatividyaapeeth.edu

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Program Boucher

विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

75
Azadi Ka
Amrit Mahotsav

भारती विद्यापीठ
DEEMED TO BE UNIVERSITY
PUNE

INSTITUTE OF CHEMICAL TECHNOLOGY
भारती विद्यापीठ पुणे
DEEMED TO BE UNIVERSITY
PUNE

**A hands-on Training Program on
Strategies and Approaches for
Characterization of Pharmaceuticals
and Biopharmaceuticals**

**17-23
MAY, 2022
PUNE**

Under the scheme of **Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)**

An initiative by **Department of Science and Technology, India**

Organized by **Institute of Chemical Technology, Mumbai (PMU)**

Hosted by **Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune**

ABOUT THE PROGRAM

The aim of the training program is to provide a general overview and introduction to practical aspects of recent advances, strategies and application in methods of pharmaceuticals and biopharmaceutical domains. An interactive and learning session, from method development to data analysis. An opportunity to participate in live analytical runs with experts. The practical exposure to instrumentation include:

1. Zetasizer and UV Spectroscopy
2. HPTLC, GC-MS and LC-MS
3. Dissolution Apparatus and Raman Spectroscopy
4. Computer-Aided Drug Designing

WORKSHOP DETAILS

Eligibility:

Minimum qualification should be Post Graduate (Science/ Pharmacy) or B. Tech. (Technology), Professors/ Scientists/ Post-Doc Fellows/ Ph.D. Fellows/ Industry persons who are actively involved in R&D

Duration: 7 days

No. of participants: 30

TA, accommodation and food will be provided

REGISTRATION

Scan the QR code



OR

CLICK HERE

NO REGISTRATION FEE

**REGISTRATION
DEADLINE:
07th MAY, 2022**

CONTACT DETAILS

Email: ictworkshopstuti@gmail.com

DST STUTI ICT

Dr. Ratnesh Jain (DST STUTI ICT-Coordinator)

Mr. Shailesh Bhokare (Program Manager) Mob: +91-93252 33728

Ms. Preeti Kaushik (Project Associate) Mob: +91-99201 84671

Poona College of Pharmacy

Dr. Hemant Jain Mob: +91-82084 85383

Ms. Shraddha Deshmukh Mob: +91-80876 48811

Program Overview

DST Synergistic Training program Utilizing the scientific and Technological Infrastructure' [STUTI] training program on Strategies and Approaches for Characterization of Pharmaceuticals and Biopharmaceuticals was conducted 17th to 23rd MAY, 2022. This program was organized by Institute of Chemical Technology (ICT), Mumbai (PMU) and Hosted by Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune. This program cover both theoretical aspects and practical/ Hands on training. Theoretical sessions provided an overview of the fundamental aspects and practical sessions made acquainted with practical exposure and instrumentation.

Virtual Inauguration of the program is done by Chief Guest Prof. A.B. Pandit, Vice Chancellor; ICT Mumbai and Dr. Ratnesh Jain, Coordinator, DST STUTI ICT and Key Note speaker Dr. Anthony Melvin Crasto, Consultant, Process research, Glenmark Life Sciences Ltd.

Important speaker of the event are Dr. S.Y Gabhe, Professor, PCP; Dr K Manoj Bob, Dy General Manager, Lupin Bioresearch Center, Pune; Dr. Hemant K Jain, Professor, PCP; Dr. C. Bothiraja, Professor, PCP. Dr. Upendra S. Pendse, Sr. Research Scientist, PTL, PCP, Dr. L. Sathiyarayanan; Vice Principal, PCP; Dr. Atmaram Pawar, Professor and I/C Principal, Poona College of Pharmacy, BVDU, Pune; Mr. Suhas Yewale, Associate Director Techno Commercial, Sotax India Pvt. Ltd. Mumbai; Dr.Senthil Thyagarajan, Director, BioRadius Therapeutic Research Pvt Ltd, Pune; Dr. Ganesh Kokate, Product Manager -LCMS, Spinco Biotech Pvt Ltd.; Dr. K. S. Jain, Principal, RJSPM, Pune; Dr. Sangram Patil, Chief Chemist, Centre for Food Testing, PCP, Pune; Dr. Dileep Kumar, Astd. Professor, PCP; Mr. Kunal holmukhe, Application expert Anatek Services Pvt Ltd, Mumbai; Dr. Ankit Ganeshpurkar, Astd. Professor, PCP; Dr. A. G. Namdeo, HoD (Pharmacognosy) PCP, Dr. R.G. Kulkarni, HoD (Pharm Chem), PCP; Dr. Abhay Harsulkar, HoD (Pharm. Biotech.), PCP; Dr. Varsha Pokharkar, Dean & Vice Principal, PCP.

Total 30 participants (Scientists/ Professors / PhDs/ industry representatives) from various part of country were participated in this program. This program was coordinated from host institute by Dr. Hemant K. Jain under guidance of Dr. Atmaram Pawar, Principal (I/C), Dr. Varsha Pokharkar, Vice Principal & Dean and Dr. L. Sathiyarayanan, Vice Principal.

Program details

Program Name	DST STUTI (Department of Science & Technology-Synergistic Training program Utilizing the scientific and Technological Infrastructure)
Project Management Unit (PMU)	Institute of Chemical Technology, Mumbai
Host Institute Name	Bharati Vidyapeeth's (Deemed to be University) Poona College of Pharmacy, Pune
Training Program Title	Strategies and Approaches for Characterization of Pharmaceuticals and Biopharmaceuticals
Date	17 th -23 rd May 2022
Venue	Poona College of Pharmacy, Pune, Paud Rd, Rambaug Colony, Erandwane, Pune, Maharashtra 411038

Participants' details

S. No	Name of the participant	Institute/Organization/Industry	Contact Number	Email Address	Gender
1	Aishwarya Jain	MCE Society's Allana College of Pharmacy, Pune	9130441114	ash.starred@gmail.com	Female
2	Akshada sanjay bhadane	Institute of Science, Mumbai	7387034868	bhadaneakshada7@gmail.com	Female
3	Ashwini Balasaheb Pharne	BVDU's Poona College of Pharmacy, Pune	07977440732	ashwini.pharne@gmail.com	Female
4	Dinesh Kumar	Department of Life Sciences, University of Mumbai	9312401721	kumar.verma012@gmail.com	Male
5	Dr. Satnam Singh	AIMSR, Adesh University, Bathinda	9872083238	sssaini76@gmail.com	Male
6	Dr. Dipali Dhoke	Presently not working	09665040234	dipalidhoke7@gmail.com	Female
7	Dr. Prithvi Asapur	Advanced Enzyme Technologies Ltd.	9726876894	prithvi.asapur@advancedenzymes.com	Female
8	Dr. Sandeep Shivaji Pathare	BVDU Poona College of Pharmacy, Pune	8421310815	sandeep.pathare@bharatividyaapeeth.edu	Male
9	Dr. Satish K Mandlik	BVDU Poona College of Pharmacy	<u>9850187167</u>	<u>satish.mandlik@bharatividyaapeeth.edu</u>	Male
10	Gauri Bhonde	ICMR-NIRRH, Parel, Mumbai	09969926405	gauriniv@gmail.com	Female
11	Kajal Lalit Vakharia	Zelle Biotechnology, Mira Road, Maharashtra	7572846169	kajal.v@zellebiotech.com	Female
12	Komal Kumari	Inesa Ventures, Airport Road Bangalore	+919198727509	komalnag23@gmail.com	Female
13	Linsha Chandran Karimbanakkal	Yashraj Biotechnology Ltd, Navi Mumbai, Maharashtra	8898829507	k.linshachandran@gmail.com	Female
14	Mr. Suresh Audumbar Marnoor	Shree Ambabai Talim Sanstha's, Diploma in Pharmacy College, Miraj, District- Sangli, Maharashtra	8669070432	suresh.marnoor@gmail.com	Male
15	Mrunal Purushottam Divate	Government college of Pharmacy, Karad.	+917219182989	mrunaldivate11@gmail.com	Female
16	Nutan Rajendra Darandale	National chemical Laboratory, Pune	7083366289	nutandarandale@gmail.com	Female
17	Rohan Ramesh Pawar	Sir H N Medical Research Society, Mumbai	9987585433	rp031117@gmail.com	Male
18	Romil Dagha	K.C. College, Thane	08097660104	romilrvt@gmail.com	Male
19	Savita Shrikant Deokar	Modern College of pharmacy ,Yamunanagr, Nigdi, Pune	7499438569	savitadeokar1979@gmail.com	Female

S. No	Name of the participant	Institute/Organization/Industry	Contact Number	Email Address	Gender
20	Smita Jadhav	School of Biotechnology, D. Y. Patil Deemed to be University, Navi Mumbai	7738650040	smitajadhav20@gmail.com	Female
21	Sunaina Ramesh Shantidevi	Central University of Gujarat	8108523323	chaurasiyasunaina5@gmail.com	Female
22	Suvarna Shivaji Jarande	All India Shri Shivaji Memorial Society's College of Pharmacy	9145338544	jarandes@yahoo.com	Female
23	PAWAN RAJKUMAR KUDALE	Institute of Chemical Technology, Mumbai	7722892891	kudalepawan497@gmail.com	Male
24	Vijay M Khedkar	School of Pharmacy, Vishwakarma University, Pune	9226459782	vijay.khedkar@vupune.ac.in	Male
25	M. Vaidagi	Vellore Institute of Technology	9032273019	vaidegi.1306@gmail.com	Female
26	Eshika Chakraborty	Vellore Institute of Technology	8617347078	kulti124.eshika@gmail.com	Female
27	Vrushali Udaysinh Pawar	Poona college of pharmacy	9921602911	Vrushalipawar2006@gmail.com	Female
28	Dr. Firdaus Jahan Md. Mukhtar Quraishi	University of Mumbai	8652847116	firdausfazal@gmail.com	Female
29	Dr. Vinodkumar D. Ramani	Bhagwan Mahavir College of Pharmacy, Surat	9913792913	vinod.ramani01@gmail.com	Male
30	Jitesh Kiritbhai Jariwala	Maliba Pharmacy College, Uka Tarsadia University, Bardoli	9909277833	jitesh.jariwala@utu.ac.in	Male

Statistics (Female participation, location wise participation)

- Male Participants 11
- Female Participants 19
- Maharashtra state: 23 [Pune 09, other districts of Maharashtra 14]
- Other than Maharashtra state: 07

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4. Speaker's details

INAUGURATION PROGRAM

- **Chief guest of Inauguration program:**

Prof. A.B.Pandit,

Vice Chancellor; Institute of Chemical Technology, Mumbai

- **Guest of honour of Inauguration program: Dr. Ratnesh Jain**

Coordinator, DST STUTI ICT

- **Key Note speaker & Resource person:**

Dr. Anthony Melvin Crasto

Consultant, Glenmark Lifesciences, Mumbai

- **OTHER RESOURCE PERSONS:**

- **Dr. Atmaram Pawar**

Professor and I/C Principal, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr. Varsha Pokharkar,**

Dean & Vice Principal, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr. L. Sathiyarayanan;**

Vice Principal, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr. Hemant K Jain**

Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Ms. Swati Bharati,**

Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr. S.Y Gabhe**

Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr K Manoj Bob**



Dy General Manager-Bioanalytical Research, Lupin Bioresearch Center, Pune

- **Dr. C. Bothiraja**

Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Dr. Upendra S. Pendse**

Sr. Research Scientist, Public Testing Lab., PCP, BVDU, Pune

- **Mr. Suraj More**

Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Mr. Suhas Yewale**

Associate Director Techno Commercial, Sotax India Pvt. Ltd. Mumbai

- **Suhas Yewale**

Associate Director Techno Commercial, Sotax India Pvt. Ltd. Mumbai

- **Mr. Aniket Jadhav**

Application Chemist Anchrom Enterprises(I)Pvt. Ltd. Mumbai

- **Dr. Senthil Thyagarajan**

Director, BioRadius Therapeutic Research Pvt Ltd, Pune

- **Dr. Ganesh Kokate,**

Product Manager -LCMS, Spinco Biotech Pvt Ltd

- **Dr. K. S. Jain**

Principal, Rajmata Jijau Shikshan Prasarak Mandal's, College of Pharmacy, Pune

- **Dr. Sangram Patil,**

Chief Chemist, Centre for Food Testing, Poona College of Pharmacy, BVDU, Pune

- **Dr. Dileep Kumar**

Astt. Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

- **Mr. Kunal holmukhe**

Application expert Anatek Services Pvt Ltd

- **Mr. Kunal holmukhe & Dr. Deepak Kadam**



Application expert Anatek Services Pvt Ltd

- **Ms. Snehal Thakar**, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Dr. Ankit Ganeshpurkar**
Astt. Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Dr. A. G. Namdeo**
HoD (Pharmacognosy) Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Mr. Abhishek Pawar**,
Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Dr. Rahul Khiste**
Associate Professor, Marathwada mitra mandal COP Pune
- **Dr. R.G. Kulkarni**
HoD (Pharm Chem), Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Dr. Abhay Harsulkar**
HoD (Pharm Chem) and Professor, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
- **Dr. Rahul Khiste**
Associate Professor, Marathwada Mitra Mandal COP, Pune
- **Mr Vinayak Walekar**
Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

Report of the program (With speaker, participant details, feedback analysis, statistics, and summary)

Day wise report

Day 1 (17.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Registration	Resource person from the host institute
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:00	Inauguration program	Prof. A.B.Pandit, Vice Chancellor; Institute of Chemical Technology, Mumbai Dr. Anthony Melvin Crasto Dr. Ratnesh Jain, Coordinator, DST STUTI ICT
11:00	12:00	Lecture session-1: Characterization of Pharmaceuticals	Dr. Anthony Melvin Crasto Consultant, Glenmark Lifesciences, Mumbai
12:00	13:00	Lunch	
13:00	14:00	Lecture session-2 Fundamentals of UV for Pharm. Analysis	Dr. Hemant K Jain Professor, Poona College of Pharmacy, BVDU, Pune
14:00	15:30	Lecture session-3 Fundamentals of IR for Pharm. Analysis	Dr. Hemant K Jain Professor, Poona College of Pharmacy, BVDU, Pune
15:30	16:45	Lab session: Training for determination of particle size and Zeta Potential	Ms. Swati Bharati, Poona College of Pharmacy, BVDU, Pune
16:45	17:30	Hands on training: UV Spectrophotometer for Pharm. Analysis	Dr. Hemant K Jain Professor, Poona College of Pharmacy, BVDU, Pune
17:30	17:45	Evening Break	
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

Day 2 (18.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:30	Lecture session-1: HPLC Separations and Requirements	Dr. S.Y Gabhe Professor, Poona College of Pharmacy, BVDU, Pune
11:30	13:00	Lecture session-2 Bio-analytical Techniques	Dr K Manoj Bob Dy General Manager-Bioanalytical Research, Lupin Bioresearch Center, Pune
13:00	13:45	Lunch	
13:45	15:00	Basics of Biopharmaceutics	Dr. C. Bothiraja Professor, Poona College of Pharmacy, BVDU, Pune
15:00	16:30	Lab session: Hands on training on HPLC	Dr. Upendra S. Pendse Sr. Research Scientist, Public Testing Lab., PCP, BVDU, Pune
16:30	16:45	Evening Break	
16:45	17:45	Lab session: Winnoline Software Demonstration	Mr. Suraj More, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

Day 3 (19.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:30	Lecture session-1 Applications of HPTLC	Dr. L. Sathiyarayanan; Vice Principal, Poona College of Pharmacy, BVDU, Pune
11:30	13:00	Lecture session-2 Biopharmaceutical aspect of Generic medicines	Dr. Atmaram Pawar Professor and I/C Principal, Poona College of Pharmacy, BVDU, Pune
13:00	14:00	Lunch	
14:00	15:00	Lecture session-3: Introduction of type 4 dissolution system	Mr. Suhas Yewale Associate Director Techno Commercial, Sotax India Pvt. Ltd. Mumbai

15:00	16:30	Lab session and training of Dissolution Apparatus, USP 4	Suhas Yewale Associate Director Techno Commercial, Sotax India Pvt. Ltd. Mumbai
16:30	16:45	Evening Break	
16:45	17:45	Lab session: Hands on training on HPTLC	Mr. Aniket Jadhav Application Chemist Anchrom Enterprises(I)Pvt. Ltd. Mumbai
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

Day 4 (20.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:30	Lecture session-1: Current trends in clinical research - Drugs and Biopharmaceuticals	Dr.Senthil Thyagarajan Director, BioRadius Therapeutic Research Pvt Ltd, Pune
11:30	13:00	Lecture session-2 : Basics of LC-MS for Pharmaceutical analysis.	Dr. Ganesh Kokate, Product Manager -LCMS, Spinco Biotech Pvt Ltd
13:00	14:00	Lunch	
14:00	15:30	Lecture session-3: Need of microwave assisted synthesis	Dr. K. S. Jain Principal, Rajmata Jijau Shikshan Prasarak Mandal's, College of Pharmacy, Pune
16:30	16:45	Evening Break	
16:45	17:45	Lab session and training of LC-MS	Dr. Sangram Patil, Chief Chemist, Centre for Food Testing, Poona College of Pharmacy, BVDU, Pune
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

Day 5 (21.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:30	Lecture-1 NEP 2020 and Value education	Dr. Hemant K Jain Professor, Poona College of Pharmacy, BVDU, Pune
11:30	13:00	Lecture-2 Deciphering the role of Artificial intelligence in drug discovery: shifting paradigm	Dr. Dileep Kumar Asth. Professor, Poona College of Pharmacy, BVDU, Pune
13:00	13:45	Lunch	
13:45	15:00	Lecture on Basics on Raman Spectroscopy	Mr. Kunal holmukhe Application expert Anatek Services Pvt Ltd
15:00	15:30	Lab session and training/ Safety and Instructions	Lab Speaker/ lab in charge
15:00	16:00	Lab session and training of Handheld Raman Spectrometer-(Serstech)	Mr. Kunal holmukhe & Dr. Deepak Kadam Application expert Anatek Services Pvt Ltd
16:30	16:45	Evening Break	
16:45	17:45	Lab session: training of Microwave assisted synthesizer Anton Paar Monowave	Ms. Snehal Thakar, Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune

Day 6 (22.05.2022)

Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	13:00	Molecular Dynamics(MD) Simulation	Dr. Ankit Ganeshpurkar Asth. Professor, Poona College of Pharmacy, BVDU, Pune
13:00	14:00	Lunch	
14:00	15:00	Lecture: Biotechnological approaches for production of phytopharmaceuticals	Dr. A. G. Namdeo HoD (Pharmacognosy) Poona College of Pharmacy, BVDU, Pune
15:00	15:30	Lab session and training/ Safety and Instructions	Lab Speaker/ lab in charge

15:30	17:00	Lab session: Training for preparation of nanofibers	Mr. Abhishek Pawar, Poona College of Pharmacy, BVDU, Pune
16:30	16:45	Evening Break	
16:45	17:45	Hands on training: QSAR	Dr. Rahul Khiste Associate Professor, Marathwada mitra mandal COP Pune
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

Day 7 (23.05.2022)

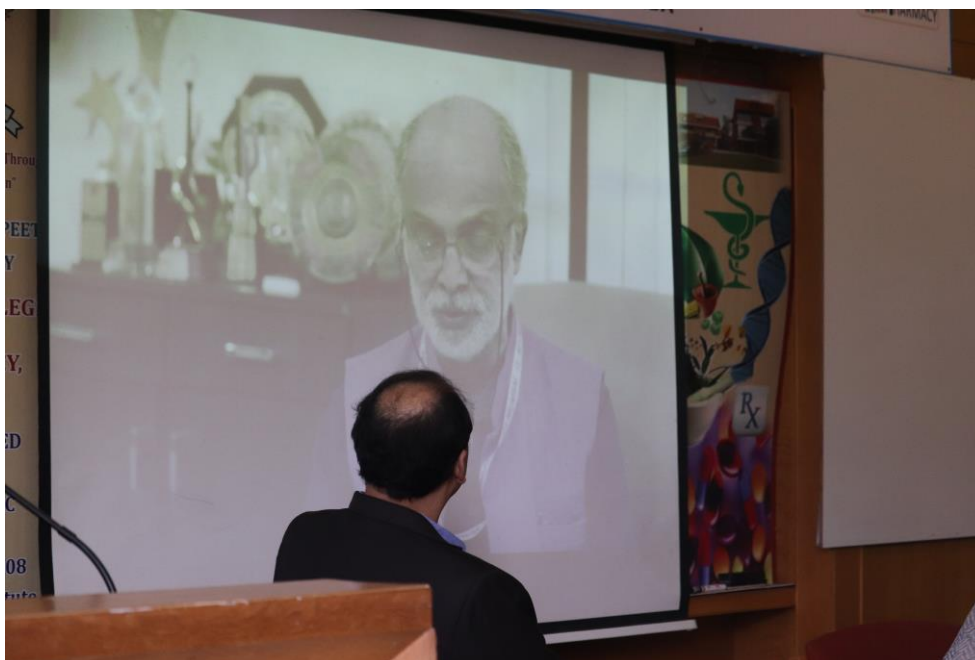
Start time	End time	Agenda	Speaker/ faculty/Resource person
09:00	09:30	Arrival and Breakfast	
09:30	10:00	Welcome and Introduction	In-charge of the event from the host institute
10:00	11:15	Lecture session: Introduction to computer aided drug designing (Structure based Drug Design (docking))	Dr. R.G. Kulkarni HoD (Pharm Chem), Poona College of Pharmacy, BVDU, Pune
11:15	12:30	Lecture session :Proteomics: A window for Identification of therapeutic bioactive proteins	Dr. Abhay Harsulkar Professor, Dept. of Pharm. Biotech., Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune
13:00	14:00	Lunch	
14:00	15:00	Lecture session: Advances in characterisation of drug delivery system	Dr. Varsha Pokharkar, Dean & Vice Principal, Poona College of Pharmacy, BVDU, Pune
15:00	15:30	Lab session and training/ Safety and Instructions	Lab Speaker/ lab in charge
15:00	16:00	Lab session and training Demonstration of Docking simulation	Mr Vinayak Walekar Poona College of Pharmacy, BVDU, Pune
16:30	16:45	Evening Break	
16:45	17:45	Hands on training: Deno novo drug design	Dr. Rahul Khiste Associate Professor, Marathwada mitra mandal COP Pune
17:45	18:00	Q&A Session, Feedback/ end of the day	In-charge of the event, speakers and lab incharge

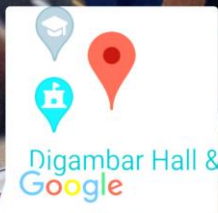
Inauguration of STC

Inauguration of DST STUTI ICT (PCP) Program on training program on Strategies and Approaches for Characterization of Pharmaceuticals and Biopharmaceuticals was conducted 17th MAY, 2022. This program was Organized by Institute of Chemical Technology, Mumbai (PMU) and Hosted by Poona College of Pharmacy, Bharati Vidyapeeth (Deemed to be University), Pune.

Program has started by Ms. Preeti Kaushik, Project Associate, DST STUTI-ICT followed by Welcome Address given by Dr. Atmaram Pawar, Principal (I/C), Poona College of Pharmacy. Then Overview of DST STUTI program was given by Dr. Hemant Jain, Host Institute (PCP) Coordinator followed by Virtual Inauguration by Chief Guest Prof. A.B. Pandit, Vice Chancellor; Institute of Chemical Technology, Mumbai and Guest Dr. Ratnesh Jain, Coordinator, DST STUTI ICT. Key Note speaker of program was Dr. Anthony Melvin Crasto, Consultant, Process research, Glenmark Life Sciences Ltd., and Finally Vote of Thanks is given by Dr. Varsha Pokharkar, Vice Principal and Dean, Poona College of Pharmacy.

Total 30 participants from various parts of country and Dr. L. Sathiyarayanan, Vice Principal were participated in this program. This program was coordinated by Dr. Hemant K. Jain and program manager of the program was Mr. Shailesh Bhokare.



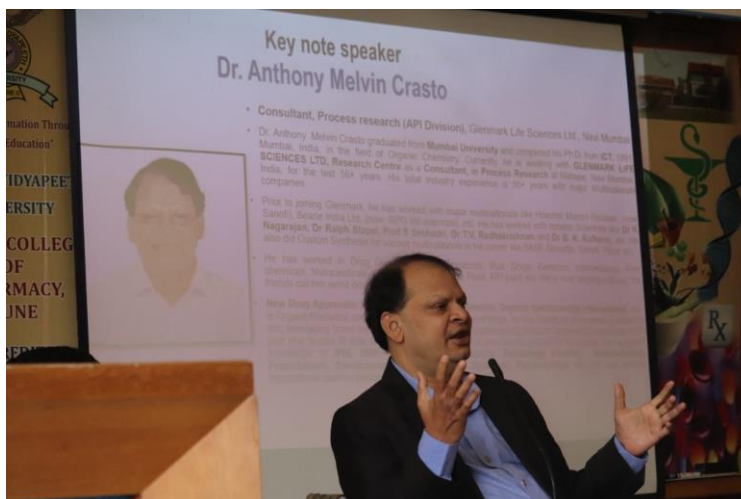


Pune, Maharashtra, India
Poona College of Pharmacy (BVDU), GR7C+895, Hanuman Nagar,
Kothrud, Pune, Maharashtra 411038, India
Lat 18.513273°
Long 73.820782°
17/05/22 10:22 AM

GPS Map Camera

Report of program

Lecture on Characterization of Pharmaceuticals by Dr. Anthony Melvin Crasto



Dr. Anthony began his session by explaining the basics of qualitative analysis and quantitative analysis, Various types of Qualitative analysis, Fluorescence, UV-Vis spectrophotometry, Fluorimetry, IR Spectrophotometry, NIR Spectrophotometry, NMR spectroscopy, AAS, Inductively Coupled Plasma Mass Spectrometry, liquid chromatography, HPLC, Gas Chromatography, Mass Spectrometry, Sampling, Precision, Screening, Scope. The session was concluded with the applications of analysis techniques.

Lecture on Fundamentals of UV for Pharmaceutical Analysis by Dr. Hemant K Jain



Dr. Hemant K Jain began his session by need of UV Visible Spectroscopy. Then he explained UV and Visible regions, theory of UV Visible spectroscopy, types of electronic transitions involved in molecule and effect of conjugation on wavelength, Red and Blue Shifts, Beer's law, Lambert's law,

Beer-Lambert's law, deviations from Beer's law and Instrumentation of UV spectrophotometer. The session was concluded with applications of UV spectrophotometry.

Lecture on Fundamentals of IR for Pharmaceutical Analysis by Dr. Hemant K Jain

Dr. Hemant K Jain explained Theory, Modes of Molecular vibrations, Sample handling, Instrumentation of Dispersive and Fourier-Transform IR Spectrometer, Factors affecting vibrational frequencies and applications of IR spectroscopy. He also discussed IR data Interpretation.



Hands on training for analysis of pharmaceuticals by UV Spectrophotometry by Dr. Hemant K Jain



Dr. Hemant K Jain explained optimum conditions for Spectrophotometric measurements. He also discussed development of method by UV Spectrophotometry. He provided hands on training for analysis of pharmaceuticals by UV Spectrophotometry.

Training for determination of particle size and Zeta Potential by Ms. Swati Bharati



Lecture on HPLC Separations and Requirements by Dr. S. Y. Gabhe



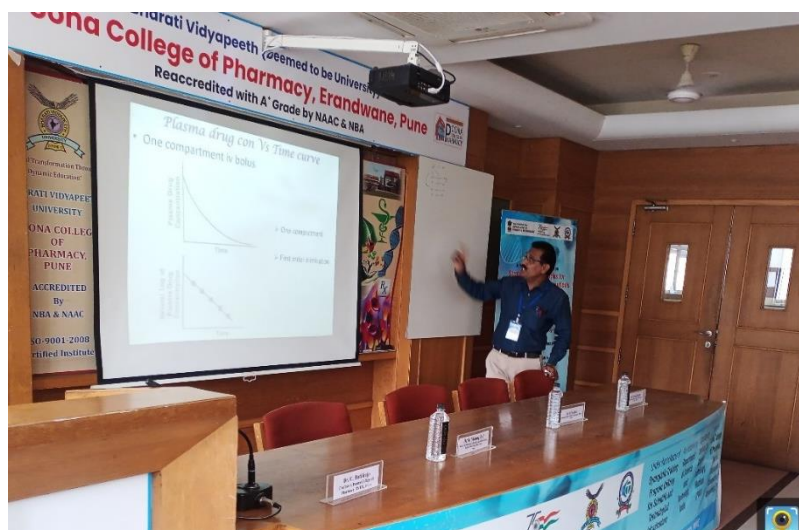
Dr. Gabhe began his lecture by explaining the difference between separation and resolution, IEC, gel permeation/ Size exclusion chromatography, requirements of HPLC method development for analysis followed by validation. He also discussed about Resolution, Separation time/run time, Back pressure, Minimum Detectable Mass, Maximum Sample Size, Maximizing UV detectability, Derivatization of different classes of compounds, Optical isomers, choosing the LC method. The lecture session concluded with the discussion of column development and a question and answers session.

Lecture on Bio-analytical Techniques by Dr K Manoj Bob



Dr. Manoj Bob started the lecture session by explaining the quantification of drug/ metabolite residue in biological fluids and tissues. He discussed about the bioanalytical techniques, Literature review and sample processing for bioanalysis. The session included the discussion about instrumental analysis – HPLC, LC-MS/MS, ELISA, GC-MS and the Derivatisation techniques. The session was concluded with the brief explanation about approaches, challenges and the strategies of method development (MD) and method validation (MV) of bioanalysis.

Lecture on Basics of Biopharmaceutics by Dr. C Bothiraja



Dr. Bothiraja initiated the session on biopharmaceutics by first defining the terms - Volume of distribution, Closed compartment, One compartment and two compartment model, IV bolus, first order kinetics and second order kinetics. He explained about time vs log plasma drug concentration, ($y = mx + c$) and the semilogarithmic scale = actual conc. Vs time. The session was followed by the concepts of Apparent volume of distribution vs volume of distribution, clearance, Total clearance,

Extraction ratio, Organ clearance First order elimination, zero order elimination, elimination rate, mathematical methods to predict drug concentration and elimination rate constant. The lecture was concluded with a discussion on half-life, area under the curve (AUC) and the trapezoidal rule.

Lab session: Hands on training on HPLC by Dr. Upendra S. Pendse



Lab session: Winnoline Software Demonstration by Mr. Suraj More



Lecture on Applications of HPTLC by Dr. L. Sathiyarayanan



Dr Sathiyarayanan initiated his lecture session on HPTLC with the applications, ADC, HPTLC quantification, Stepwise practice of HPTLC, HPTLC for QC & research lab, acceptance of HPTLC by regulatory bodies. The session also included the concept of fully automatic sample analysis and evaluation system by HPTLC. The session was concluding by stating the advantages, limitations and further approaches of HPTLC.

Lecture on Biopharmaceutical aspects of Generic medicines by Dr. Atmaram Pawar



Dr. Atmaram Pawar Sir began his lecture by explaining exactly what does generics mean and the concept of ANDA and NDA. The session included the comparison of generic drugs versus the

branded ones. Dr. Pawar explained about the history of medicines and the Hatch- Waxman Act 1984 and the Drugs and Cosmetics Act, 1940. Difference between solubility and BCS solubility and many such concepts of Revolution of medicines in India.

Lecture on Introduction of Type 4 Dissolution system by Mr. Suhas N. Yewale



Mr. Suhas Yewale during his lecture session on Type IV Dissolution Apparatus discussed in depth about the USP – IV closed loop and open loop configuration. The session also included topics like smart development – API to dosage forms, IVIVC correlation. The session had an emphasis on the important role in establishing IVIVC correlation. The session ended with the discussion about the difficulties in maintaining the volume for class IV and class II molecules.

Lab session and training of Dissolution Apparatus, USP 4, SOTAX by Suhas Yewale



Lab session: Hands on training on HPTLC by Mr. Aniket Jadhav



Lecture on Current trends in clinical research - Drugs and Biopharmaceuticals by Dr. Senthil Thyagarajan,



Dr. Senthil began his session by narrating the history of clinical trials focusing on past events in 1747 - James Lind and Scurvy trial - first controlled clinical trial of modern era followed by the 1950's Thalidomide tragedy. Dr. Senthil enlightened the participants about the evolution of ethical and regulatory framework. He also discussed about the central drug development challenges. Dr. Thyagarajan concluded his lecture by explaining about the current trends in Pharma and clinical trials and the use of biomarkers and biologics in pharmaceutical industry.

Lecture on Basics of LC-MS for Pharmaceutical Analysis by Mr. Ganesh Kokate



Dr. Ganesh Kokate initiated the lecture session by explaining the 3- dimensional features of LC/MS/MS which gives fragmentation pattern of the given molecule. Dr. Ganesh explained about the ionization, API – Atmospheric pressure ionization, source, ESI (electron spray ionization). The session included the explanation why MS detector are used over any other detector. The session also included concept of tandem mass spectrometry, types of mass spectrometer, quadrupole, time of flight, ion trap, essentials of LC/MS, areas of ionization & target compounds, PDA vs LC/MS and LC/MS/MS System configuration.

Lecture on Need of Microwave Assisted Synthesis by Dr. K. S. Jain



Lab session and training of LC-MS by Dr. Sangram Patil



Lecture on Deciphering the role of Artificial intelligence in drug discovery: shifting paradigm by Dr. Dileep Kumar Sharma



Dr. Dileep initiated the session by defining the terms - artificial intelligence, machine learning and deep learning to get the basic overview of the topic, followed by focusing on the applications of artificial intelligence in human healthcare. The lecture also had a healthy discussion between Dileep Sir and the participants regarding the SANJEEVANI software – it's merits and demerits and the

reason for its failure. Sir concluded the lecture by throwing some light on the benefits of virtual reality in healthcare and the Artificial Intelligence tools used in the process of drug discovery.

Lecture on NEP 2020 and Value education by Dr. Hemant Kumar Jain,



Dr. Hemant Jain explained need of NEP 2020 and value education. Dr. Jain explained about the value education, purpose of education, aspirations in National Education Policy 2020, outcome of Holistic Education and Universal Human Values (UHV). The session concluded with the discussion the important aspects of human life e.g., right understanding, relationship, required physical facilities, mutual happiness.

Lecture on Basics of Raman Spectroscopy by Dr. Deepak Kadam,



Dr. Deepak Kadam Sir discussed Raman Spectroscopy very concisely covering all the aspects of instrumentation, principle and working along with special emphasis on topics such as Laser operation, Grating system, Rejection filter. He also focussed on the Handheld Raman, Raman spectroscopy measurement, pharmaceutical applications of RAMAN, Polymorphism, High speed Raman Imaging example of tablet, Tablet homogeneity & dissolution and Raman profiling of multi-layer film.

Lab session and training of Handheld Raman Spectrometer- (Serstech) by Mr. Kunal Holmukhe



Lab session: Training of Microwave assisted synthesizer Anton Paar Monowave by Ms. Snehal Thakar



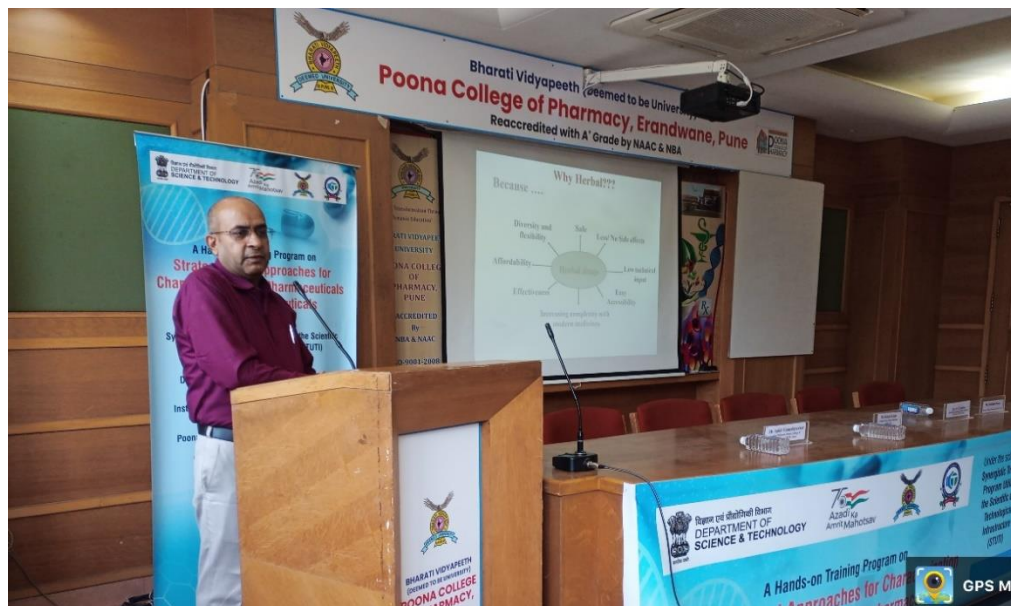
Lecture on Molecular Dynamic Simulations by Dr. Ankit Ganeshpurkar



Dr. Ankit started the session from the basics explaining what does Molecular dynamics and simulation exactly means and why do we need simulation. He continued by going through what are atomistic/ molecular simulation, basics of MD algorithm using Newtonian mechanics. He explained that position and velocity are the two important variables to start the experiment on Molecular

Dynamic Simulations and how to predict the coordinates in molecular docking. Maxwell Boltzmann formula for determining the velocity of the system.

Lecture on Biotechnological approaches for production of phytopharmaceuticals by Dr. A. G. Namdeo



Dr. Ajay Namdeo initiated his session by explaining the importance of the herbal drugs, limitations of Conventional Process, Plant Tissue culture (In vitro cultivation of plant cells/tissue), basic requirements of plant tissue culture - Nutrient media, MS media preparation protocol, relationship of Auxin and cytokinin on plant cells, aseptic techniques, stages of the callus culture, establishment of the suspension culture, stages in the medicinal plant biotechnology, strategies in medicinal plant biotechnology. The lecture was concluded by brief introduction of bioreactor technology.

Lab session: Training for preparation of nanofibers by Mr. Abhishek Pawar



**Lecture on Introduction to computer aided drug designing (Structure based Drug Design (docking)
by Dr. Ravindra G. Kulkarni**



Dr Ravindra Kulkarni Sir initiated his lecture session with homology modelling - principle, tools and techniques, database approach to homology modelling. PDV crystal structures gives 2 types of coordinates – Z matrix and the cartesian coordinates. Sir told about the applications of homology modelling, followed by the practical approaches. He mentioned 8 steps of homology modelling which generally involve alignment, modelling and correction. Then, sir told about template and

target and how much % minimum similarity we look for alignment. Then he discussed Sequence identity vs alignment length, SWISS-MODEL, then how to generate template with SWISS-MODEL.

Lecture on Advances in characterization of drug delivery system Dr. Varsha Pokharkar



Dr. Varsha Pokharkar began the lecture session with the discussion on challenges in characterization of drug delivery system. Global market of Nanocarriers with an emphasis on Gold(Au) Nanoparticles followed by brief explanation about indispensable qualities of gold nanoparticles (AuNPs) for biomedical applications. How to tailor make the shapes of gold as per requirements. Wide biomedical applications of AuNPs. Targeted drug delivery with special emphasis on types on liver targeting and the cells of liver to be targeted.

Lab session and training Demonstration of Docking simulation by Mr Vinayak Walekar



Photos



