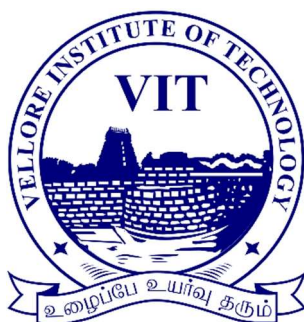


A training session report on
**X-Ray Crystallography and
Determination of Molecular Structure**

Under STUTI program funded by DST



In association with
Indian Institute of Technology, Gandhinagar
(Project Management Unit)



Co-ordinated by
Prof. Manju S L
Department of Chemistry
School of Advanced Sciences
Vellore Institute of Technology Vellore
22nd to 28th August 2022

Acknowledgement

First and foremost, I want to express my sincere gratitude to the Department of Science and Technology (DST) for entrusting me with this project and VIT Management for all the support and encouragement. We convey gratitude for the encouragement and support received from IIT Gandhinagar during the execution of this training since its beginning. Our heartfelt acknowledgement to Dean SAS, Associate Dean SAS and HoD Chemistry for their guidance.

The workshop was coordinated by **Prof. Manju S L** and endorsed by a dedicated organizing team. The workshop was conducted on the “**X-Ray Crystallography and Determination of Molecular Structures**” on the instrument funded under the FIST program (Sanction No.:SR/FST/CS-1/2019/131 Date: 07-01-2020). Organizing team acknowledge the contributions of the training committee, in implementation and the execution of the program to achieve the objectives of the project, particularly, **Prof. Sanjit Konar** (IISER Bhopal), **Prof. Shaikh M Mobin** (IIT, Indore), **Prof. Sujit K Ghosh** (IISER, Pune), **Prof. Jitendra K. Bera** (IIT, Kanpur), **Dr. Prathapa S Jagannatha** (Application Scientist, Bruker), **Dr. Arijit Mukherjee** (BITS pilani), Dr. Arup Sinha (VIT), **Dr. Tamas Kumar Panda** (VIT), **Dr. Manish Kumar Mishra** (VIT), **Dr. Logesh Mathivathanan** (VIT), and **Ms. Sherin Anto** (Scientific Assistant, SCXRD).

I also acknowledge all the staff members of Department of Chemistry involved in the workshop for the smooth conduct of the training programme.

Coordinator

Prof. Manju S L

Summary

The goal of this training session is to popularize single crystal X-ray crystallography (FIST-SCXRD) facility among students, faculty, scientists and industry professionals through a week-long training workshop. The “**X-Ray Crystallography and Determination of Molecular Structures**” workshop was conducted at VIT Vellore from 22nd to 28th August, 2022 and comprised of lectures and hands on training sessions. This initiative is funded by Department of Science & Technology under the program *STUTI (Synergistic Training Program Utilizing the Scientific and Technological Infrastructure)*. All the guidance and support were provided by IIT Gandhinagar. This workshop aimed to provide an insight into the basic principles and various techniques of crystallization of small molecules, functioning of Single Crystal X-Ray Diffraction (SCXRD) instrument, single crystal data analysis and interpretation, applications of SCXRD in material, pharmaceutical and biological sciences. The participants were introduced to the basic concepts of crystallization, instrumentation, refining data using APEX4 software, handling disorder and about twinning. The focus of this workshop was to have “*a balance between theory and practical training on the equipment. Emphasis is on hands-on use of equipment for demonstration/characterization by each participant and analysis of participant’s samples*”. This a great opportunity given to VIT to organize one week workshop on X-Ray Crystallography wherein we could open the facility to institutes and college students in and around Vellore.

Introduction

Vellore Institute of Technology (VIT), Vellore conducted 7-day long workshop on DST-FIST funded instrument “**X-Ray Crystallography and Determination of Molecular Structures**” workshop in its campus. About 35 participants from around 10 states, faculty members, postdoctoral researchers, and doctoral students have participated in this training workshop were invited (**Annex-1**). The following workshop's activities took place from 22nd to 28th August 2022 (**Annex-2 & 3**). This report provides a quick overview of inauguration, the lecture and technical sessions.

- *Lecture Session*

The inauguration ceremony was started with invocation followed by lightning of *Kuthivillakku* by dignitaries. **Dr. Rajagopal** (Head, Chemistry), proposed a welcome address to all the participants. **Dr. A. Sheela** (Associate Dean, SAS) gave an overview and achievements of School of Advanced Sciences comprising of three departments (Chemistry, Physics and Mathematics). This was followed by **Dr. S. L. Manju** (Coordinator), mentioned about the salient features of STUTI program. The guest of honor, **Dr. Sanjit Konar** addressed the gathering on the importance of structural characterization using single crystal XRD. **Dr. K. Jagadeesan** (Chief Guest) delivered the speech on the importance of human health in the context of Covid, fabrication of novel sensors to identify multiple ailments in a single device. **Dr. G. Viswanathan** (Chancellor, VIT) delivered the Presidential Address and emphasized the importance of funds aided by Government of India on higher education, better health care system and other areas. Finally, the vote of thanks was addressed by **Dr. K.K.Cheralathan**. The inaugural session followed by two keynote lectures by **Dr. Sanjit Konar** followed by Lab tour arranged for the participants by the organizing team. **Prof. Sanjit Konar** (Department of Chemistry, IISER Bhopal) discussed all the basic concepts and principles of crystallography and explained the technical details of single crystal X-ray diffraction. He delivered a lecture on dynamic molecular crystals and discussed how to investigate the Single Crystal to Single Crystal (SCSC) in the molecular crystals. **Prof. Shaikh M. Mobin** (Department of Chemistry, IIT Indore) explained about the research advancement in the X-ray crystallography and showed the crystal structures of metal complexes with their applications. **Prof. Sujit Ghosh** (Department of Chemistry, IISER Pune) gave a detailed lecture on role of X-ray crystallography in materials synthesis such as metal-organic framework (MOFs), and discussed the benefits of single crystal X-ray crystallography in MOFs and other porous materials. **Dr. Arijit Mukherjee** (Department of Chemistry, BITS Pilani, Hyderabad) discussed key elements of organic crystal engineering,

polymorphism, cocrystals and synthesis of multicomponent pharmaceuticals crystals and ionic liquids crystals. **Prof. Jitendra K. Bera** (Department of Chemistry, IIT Kanpur) gave a detail presentation on single crystal X-ray crystallography's applicability in the organometallic compound's development and in the investigation of their bonding and structural implications. **Dr. Prathapa Jagannadha** (Bruker Scientific Ltd) delivered a detail tutorial on the specialized topics such as structure solution, refinement and twinning in the structure along with refinement of the different types of disorders in the organic and metal-based crystal structures. **Dr. Arup Sinha** (Department of Chemistry, VIT Vellore) discussed about the different types of single crystals, and their crystallization methods. **Dr. Manish Kumar Mishra** (Department of Chemistry, VIT Vellore) delivered a lecture on structure-property relationships towards the designing of functional molecular crystals including pharmaceutical crystals and ionic liquids. **Dr. Tamas Kumar Panda** (Department of Chemistry, VIT Vellore) showed how one can use Olex2 software to solve and refine the single crystal structures. **Dr. Logesh Mathivathanan** (Department of Chemistry, VIT Vellore) gave a detailed talk on the unconventional applications of single crystal X-ray crystallography in the area of pharmaceutical, gas absorption, magnetism, catalysis, etc.

- Technical Session

On the **first day**, after inauguration of the workshop, the participants were exposed to various kind of crystallization techniques to obtain good crystals by **Dr. Arup Sinha** and **Dr. Logesh** followed by a campus visit. On the **Second day**, the participants were taken to the laboratory and carried out hands on training on crystallization under the guidance of **Dr. Arup** and **Dr. Logesh**. On the **third day**, **Dr. Mobin** (IIT Indore), **Dr. Palanisami** (VIT) and **Dr. Tamas**, provided hands-on session on screening of crystals and data collection to all the participants through an access to the XRD setup. In addition, all participants were provided with the academic version of the installation setup as well as hands-on instruction on how to install the software. In the **fourth day's** session, participants were instructed on how to obtain the parameters for diffraction data collection, as well as how to obtain data from an unknown material by **Dr. Logesh**, **Dr. Arup** and **Ms. Sherin Anto** (Scientific assistant, SCXRD, VIT). On **fifth day**, **Dr. Prathapa Jaganathan** (Application Scientist from Bruker), had conducted a daylong session on structure solution, refinement, disorder and twinning also included a similar activity of reviewing the specifics of data gathering methods from software, data reduction using APEX4 software. On the **Sixth day**, a session was held on hands-on and a discussion with participants on several fundamental principles and case studies, including crystal structure solution and refinements. On the **Seventh day**, a concluding session by **Dr. Jitendra K Bera** (IIT Kanpur) was held with all the participants on Questions and Answers on technical and software difficulties.

- Types of samples tested

During the technical session, all of the participants expressed an interest in learning from the workshop and more than 30 samples were characterized were tested on Single Crystal X- Ray Setup. In these samples, most of the samples were powder type.

Outcome of the workshop

The STUTI workshop attracted participants from 15 different states and 20 different institutes (**Figure 1**). About 33 participants enrolled and attended the SCXRD training sessions. The goal of this training event was to bring together participants from many disciplines and raise awareness of the institute's advanced facilities. Throughout the sessions, participants asked major questions regarding theoretical and practical aspects of SCXRD instrumentations, techniques of developing good quality crystals, disorder treatments. This SCXRD workshop brought more than 5 collaborations from many small institutions and national level institutes. Finally, the feedback from the participants was considered in the evaluation of workshop (**Annex-4**). The majority of the participants were pleased with the training session and suggested that more workshops be held in the future. Few participants, also suggested for organizing such a workshop/training session on more troubleshooting techniques of data collection and on other instruments.



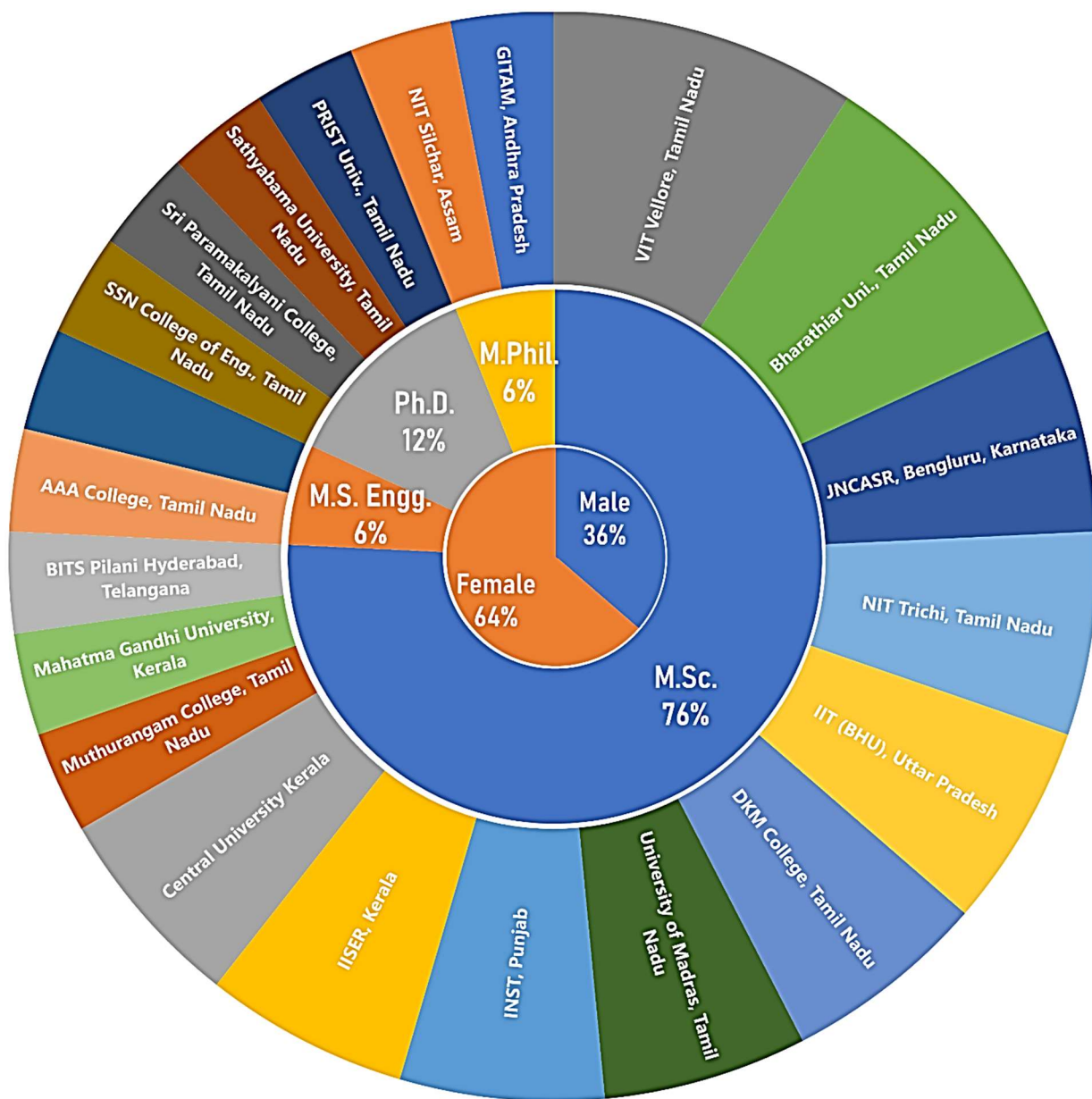


Figure 1: Participants registered for the “X-Ray Crystallography and Determination of Molecular Structures” workshop from 20 different institutes.

Annex 1: Brochure for the program.



Dr. Sanjit Konar is an Associate Professor of Chemistry at IISER Bhopal. His research interests are Nanomagnets, MOF materials, polyoxometallates for catalysis, and nanoscopic molecular clusters and cages.



Dr. Shaikh M. Mobin is an Associate Professor at IIT Indore. His group focuses on single-source molecular precursors (SSMP) for the synthesis of functional nanomaterials.



Prof. Sujit K. Ghosh is a Professor of Chemistry at IISER Pune. His research efforts are focused in the areas of metal-organic frameworks, porous organic frameworks, and metal-organic polyhedra.



Prof. Jitendra K. Bera is a Professor of Chemistry at IIT Kanpur. His group focuses their efforts in organometallic catalysis for small-molecule activation. His group prepares various polynuclear metal constructs and study their catalytic activity.



Prof. Arijit Mukherjee is an Assistant Professor at BITS Pilani, Hyderabad Campus. His research interests are in the crystal engineering of organic solids, polymorphs, APIs, the design of functional materials among others.



Dr. Prathapa Siriyaa Jagannatha is a Product Manager and Application Scientist SC-XRD Bruker India Scientific Pvt. Ltd. His topic of interests is structure solution and data refinement

Registration & Contact Details

- Interested participants must register and only selected candidates would be invited for the workshop
- For selected candidates Registration fees, local travel, Boarding and lodging will be covered by DST.

Interested participants should register using the following link:

<https://forms.gle/1DApKvYeBmgqAb18>

Registration Deadline: Aug. 12, 2022.

Shortlisted candidates will be intimated by email,

latest by Aug. 16, 2022.

Eligibility criteria:

- Minimum qualification: Post-Graduate (Science) or B.Tech. (Technology).
- Professors/Scientists/Post-Doctoral Fellows/Ph.D. Fellows/Industry persons who are actively involved in R&D.
- Not more than 2 participants from an institute.

For more information:

Coordinator: Dr. Manju S. L.

Access:

<https://vit.ac.in/school-advanced-sciences-sas/one-week-workshop-x-ray-crystallography-and-determination-molecular>

& <https://events.iitgn.ac.in/stuti/>

Mail: dststuti.vit@vit.ac.in

Address: Department of Chemistry,
School of Advanced Sciences,
Vellore Institute of Technology,
Vellore, 632014, India.

Department of Science & Technology

(DST) Funded

Training Workshop Under STUTI (Synergistic Training Program Utilizing the Scientific and Technological Infrastructure)

One Week Workshop on

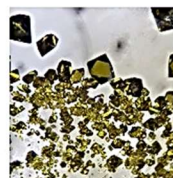
X-Ray Crystallography and Determination of Molecular Structure

Aug. 22 – 28, 2022.

Department of Chemistry,
School of Advanced Sciences,
Vellore Institute of Technology, Vellore.



Department of Chemistry,
School of Advanced Sciences,
Vellore Institute of Technology, Vellore.



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Founder & Chancellor

Patrons

Mr. Sankar Viswanathan

Vice President

Dr. Sekar Viswanathan

Mr. G. V. Selvam

Vice President

Vice President

Co-Patrons

Dr. Rambabu Kodali

Dr. S. Narayanan

Vice-Chancellor

Pro-Vice-Chancellor

Convener

Dr. N. Arunai Nambi Raj Dean, SAS

Co-Conveners

Dr. A. Sheela

Dr. Rajagopal D

Associate Dean, SAS

HoD, Chemistry

Coordinator

Dr. Manju.S.L

Organizing Team

Dr. Palanisami N

Dr. Manish Kumar Mishra

Dr. K. R. Ethiraj

Dr. Logesh Mathivathanan

Dr. Asharani LV

Ms. Sherin Anto

Dr. Arup Sinha

Dr. Rajasekhara Reddy S

Dr. Cheralathan K.K

Dr. Mohana Roopan S

Dr. Tamas Kumar Panda

Contact details: dststuti.vit@vit.ac.in

About VIT: VIT was founded in 1984 as Vellore Engineering College by the Hon. Chancellor Dr. G. Viswanathan with the aim of providing quality higher education on par with international standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis. National Assessment and Accreditation Council (NAAC) has re-accredited (IV Cycle) with a CGPA of 3.66 on a seven point scale at 'A++' Grade. VIT has been ranked 10 in Research, 12 in Engineering Category, 9 in University Category and 18 in Overall Category by the NIRF-NIRF Ranking 2022.

School of Advanced Sciences (SAS) is pledged to internationally acclaimed research and inventive instruction with a priority on disciplinary rigor and establish academic achievement. It comprises three academic departments spanning Chemistry, Physics & Mathematics. It QS world ranking by subject Chemistry Top 401-450, Mathematics Top 451-500 and THE ranking for Physical Sciences 601-800.

Programs Offered at VIT

The School offers M. Sc. Physics, RSC accredited M.Sc. Chemistry (Organic/Inorganic/Analytical/Pharma) M. Sc. (Data Science), M. Sc. Integrated Five Year Programs (Computational Statistics and Data Analytics, Chemistry, Physics and Mathematics) and Ph. D. programs.

Overview of STUTI and Objectives of the Workshop

DST welcomes all the participants for the workshop on Single Crystal X-Ray crystallography organised under STUTI. The STUTI program envisions hands-on-training and sensitization of the state-of-the-art equipment as well as towards sharing while ensuring transparent access to S&T facilities. Department of Science and Technology has identified IIT Gandhi Nagar (IITGN) as the Project Management Unit (PMU) and VIT as the coordinator for this workshop.

VIT Vellore is home to state-of-the-art instrumentation for SCXRD and the workshop will explore the theory and practice involved in various stages of molecular structure determination. Expert talks will provide our vision for the use of crystallography beyond simple structure determinations. We will highlight unusual problems faced in structure determination and provide solutions through expert lectures and hands-on training.

Contents of the workshop

Day 1 - Aug. 22, 2022

Inaugural session-Expert Talk by Dr. Sanjit Konar

Hands-on Session: Introduction to single crystals and crystalization techniques - Dr. Arup Sinha and Dr. Logesh Mathivathanan

Day 2 - Aug. 23, 2022

Expert Talk by Dr. Shaikh M. Mobin and Dr. Arup Sinha

Hands-on Session: Lab Visit, crystallization techniques - Dr. Asha Rani IV

Day 3 - Aug. 24, 2022

Expert Talk by Dr. Manish Kumar Mishra and Dr. Tamas Kumar Panda

Hands-on: Crystal screening and data collection - Dr. Palanisami N

Day 4 - Aug. 25, 2022

Expert Talk by Prof. Sujit Ghosh and Dr. Logesh Mathivathanan

Hands-on: Crystal selection, mounting & centering - Ms. Sherin

Day 5 - Aug. 26, 2022

Expert Talk by Prof. Jitendra K. Bera and Dr. Prathapa Jagannatha

Hands-on: Strategy optimizer & setting up a measurement Data reduction, scaling & structure solution - Dr. Manju S. L.

Day 6 - Aug. 27, 2022

Expert Talk by Dr. Arijit Mukherjee

Hands-on: Structure solution and refinement - Ms. Sherin A rto

Day 7 - Aug. 28, 2022

Interactive and Problem-solving session followed by closing remarks.

SCHEDULE

Day 1, 22/8/2022

08:30 Registration
09:00 Inaugural Session
10:45 Tea Break
11:00 Expert Talk 1
12:30 Lunch
14:00 Session II (Hands on)
16:30 Tea Break
16:45 Campus Visit

Day 2, 23/8/2022

09:00 Expert Talk 2
11:00 Break
11:30 Expert Talk 3
12:30 Lunch
14:00 Session II (Hands on)
16:30 Tea Break
16:00 Lab visit

Day 3, 24/8/2022

09:00 Expert Talk 4
11:00 Tea Break
12:30 Expert Talk 5
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 4, 25/8/2022

09:00 Expert Talk 6
11:00 Tea Break
11:30 Expert Talk 7
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 5, 26/8/2022

09:00 Expert Talk 8
11:00 Tea Break
11:30 Expert Talk 9
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 6, 27/8/2022

09:00 Expert Talk 10
11:00 Tea Break
11:30 Expert Talk 11
12:30 Lunch
14:00 Session IIA
15:30 Tea Break
16:00 Session IIB
17:00 Discussion

Day 7, 28/8/2022

09:00 Interactive session
11:15 Tea Break
11:30 Closing remarks

Networking Dinner on Day 5

Annex 2: List of participants registered and their attendance for the “X-Ray Crystallography and Determination of Molecular Structures” workshop.

Sr. No.	Candidate Name	Gender	Educational Qualification	Email address	University/Institute
1	P. Atchutha Rao	Male	M.Sc. Materials Chemistry	121962402002@gitam.in	GITAM Visakhapatnam, Andhra Pradesh
2	Arindam Roy	Male	M.Sc.	arindam21_rs@phy.nits.ac.in	NIT Silchar, Assam
3	Dana Susan Abraham	Female	Post Graduate	danaroqz@gmail.com	Central University Kerala, Kerala
4	Keerthana Sahadevan	Female	M.Sc. Chemistry	keerthana.s.devan1996@gmail.com	
5	Bichu Sebastian	Male	M.Sc. Chemistry	bichuseban20@iisertvm.ac.in	IISER Trivendrum, Kerala
6	Khazeber R.	Male	M.Sc. Chemistry	khazeber@iisertvm.ac.in	
7	Kritika	Female	M.Sc. Chemistry	kritika.ph21222@inst.ac.in	INST Mohali, Punjab
8	Sarita Kumari	Female	M.Sc. Chemistry	sarita.ph21217@inst.ac.in	
9	Jacob J.	Male	M.Sc. Chemistry	jacob.nst@buc.edu.in	Bharathiar University, Coimbatore, Tamil Nadu
10	Keerthana J.	Female	M.Sc. Chemistry	keerthanajothi755@gmail.com	
11	Sureka K.	Female	M.Sc. Chemistry	k.sureka.che@gmail.com	
12	Santhosh M.	Male	M.Sc. Chemistry	scientistchemsanthosh@gmail.com	PRIST University, Tamil Nadu
13	T. Dharini	Female	M.Sc. Materials Science	dharini2110@gmail.com	Sathyabama University, Chennai, Tamil Nadu
14	M. Seevalapriyal	Female	M.Sc. Chemistry	seevalapriyal@gmail.com	Sri Paramakalyani College, Tamil Nadu
15	R. Anandha Krishnan	Male	M.Sc. Chemistry	anandhakrishnanr@ssn.edu.in	SSN College of Engineering, Tamil Nadu
16	Devi Priyadarshini V.	Female	M.Sc. Chemistry	devisarajuama@gmail.com	Thiruvalluvar University, Tamil Nadu
17	A.Arthikasree	Female	M.Sc. Crystallography & Biophysics	arthibiophysics@gmail.com	University of Madras, Chennai, Tamil Nadu
18	Roslin Elsa Varughese	Female	M.Sc. Physics	roslinmerin9@gmail.com	
19	Revathi S.	Female	Ph.D.	yughanityan2319@gmail.com	DKM College for Women, Vellore, Tamil Nadu
20	Mrs. J. Saranya	Female	M.Phil.	saranchem20@gmail.com	
21	Radhika V.	Female	M.Phil.	nirmalradhi@gmail.com	AAA College, Walajapet, Tamil Nadu
22	Mollah Rohan Ahsan	Male	M.Sc. Chemistry	p20210012@hyderabad.bits-pilani.ac.in	BITS Pilani Hyderabad, Telangana
23	Ashish Kumar Yadav	Male	M.Sc. Chemistry	ashishkumaryadav.rs.chy21@itbhu.ac.in	IIT (BHU), Varanasi, Uttar Pradesh
24	Rajesh Kushwaha	Male	M.Sc. Chemistry	rajeshkushwaha.rs.chy21@itbhu.ac.in	
25	Aswathi Ravindram NE	Female	M.Sc.	aswathine@@gmail.com	NIT Trichi, Tamil Nadu
26	Jayadharini J.	Female	M.Sc.	dharinijcprakash@gmail.com	
27	Vidya L.	Female	M.Sc.	1062vidya@gmail.com	Mahatma Gandhi University, Kottayam, Kerala
28	Devesh Chandra Binwal	Male	M.S. Engg.	dcbinwal@jncasr.ac.in	JNCASR, Jakkur, Bengaluru, Karnataka
29	Aditi Saraswat	Female	M.S. Chemical Science	aditi@jncasr.ac.in	
30	Princy Sowmya R.	Female	M.Sc.	princysowmya994@gmail.com	Muthurangam College, Vellore, Tamil Nadu
31	Archana B.	Female	Ph.D.	archana.b2020@vitstudent.ac.in	VIT Vellore, Tamil Nadu
32	Shafeeq S.	Male	Ph.D.	shafeeq.s2020@vitstudent.ac.in	
33	Revathi S.	Female	Ph.D.	revathi.2019@vitstudent.ac.in	

Annex 3: Schedule date and activities during the workshop.

Day 1	Day 2	Day 3	Day 4
8.30 am: Registration 9.00 am: Inaugural session 10.00 am: Introduction 10.30 am: Expert Lecture (S-1) 11.30 am: Expert Lecture-(S-2) 12.30pm: Lunch 2.00 pm: Hands on training 4.00 pm: Tea break 4.30 pm : Campus visit	9.00 am: Expert Lecture (S-3) 10.00am: Tea break 10.30am: Expert Lecture-(S-4) 12.30pm: Lunch 2.00 pm : Hands on training 4.00 pm : Tea break	9.00 am: Expert Lecture (S-5) 10.00 am: Tea break 10.30am: Expert Lecture-(S-6) 12.30pm: Lunch 2.00 pm: Hands on training 4.00 pm: Tea break	9.00am: Expert Lecture (S-7) 10.00 am: Tea break 10.30 am: Expert Lecture-(S-8) 12.30pm: Lunch 2.00 pm: Hands on training 4.00 pm: Tea break
Day-5	Day 6	Day 7	
9.00am: Expert Lecture (S-9) 10.00am: Tea break 10.30am: Expert Lecture-(S-10) 12.30pm: Lunch 2.00 pm; Hands on training 4.00 pm : Tea break	9.00am: Expert Lecture (S-11) 10.00am: Tea break 10.30am: Expert Lecture-(S-12) 12.30pm: Lunch 2.00 pm: Hands on training 4.00 pm: Tea break	9.00am: Interactive session 11.00am: Tea break 11.30 am: closing remarks	

Annex 4: Feedback summary

Sr. No.	Content	% Rating
1.	Overall grading of the programme with reference to relevance of course module/content etc	99 % rated above 8 points
2.	Overall grading of the facilities provided by the institute i.e. Hostel, mess, class rooms, transport/infrastructure etc.	99 % rated above 8 points
3.	Overall grading of the faculty members conducting the training	100 % rated above 8 points
4.	How do you rate the overall training methodology	99 % rated above 8 points
5.	How far the field visit is relevant and related to your research study	95 % rated above 8 points
6.	Usefulness of this training in your current role	99 % rated above 8 points
7.	Usefulness of this training in future work/job you may handle	99 % rated above 8 points
8.	How far have you benefitted from interaction with the fellow participants of the training	100 % rated above 8 points
9.	How far the course material supplied relevant and related to the training curriculum	99 % rated above 8 points
10.	Overall grading of the process of training	99 % rated above 8 points
11.	Your recommendation to your peers/colleagues for the training programme	99 % rated above 8 points