Report On

DST STUTI PROGRAM FUNDED 7-DAY TRAINING PROGRAM ON EXPLORING THE RESEARCH INNOVATIONS IN SCIENCES WITH HANDS ON EXPERIENCE – (ERISHE-2022).

Date: 20th – 26th June 2022

Venue: School of Science, Government College(A), Rajahmundry, East Godavari District, Andhra Pradesh

The inauguration of DST Funded 7-Day Training Program on "Exploring The Research Innovations In Sciences With Hands on Experiences (ERISHE-2022)", organised at GOVERNMENT COLLEGE (A), RAJAHMUNDRY in collaboration with GITAM INSTITUTE OF SCIENCE, GITAM DEEMED TO BE UNIVERSITY, VISAKHAPATNAM under STUTI Program-2021 (DST/RND/STUTI/2021/18) took place on 20th JUNE at 9:30 am. STUTI program coordinator, Dr. Balla Srinivasa Prasad from GITAM Deemed to be University; Training program coordinator from Dr.B.Mallikarjuna, Department of Chemistry, GOVERNMENT COLLEGE (A), RAJAHMUNDRY.

INAUGURAL

STUTI program coordinator Dr. Balla Srinivasa Prasad briefly explained the STUTI program and the importance of collaborating with other organisations.

Figure 1: Vice Chancellor of Adikavi Nannayya University, Rajahmundry addressing the participants on inaguration of STUTI program (ERISHE-2022)

DAY 1: 20TH JUNE 2022: (CHEMISTRY)

TECHNICAL SESSION-1:

The first two days' sessions are mainly focused on Chemistry background. On day 01 after the inauguration, the technical session started on ***"Ether's rearrangement and total synthesis of tolterodine,"*** by **Prof.A.V. Reddy** as a resource person. The second technical session started with ***"An overview of separation, purification, and identification of organic compounds and chromatographic techniques"*** by **Dr. B. Jagan Mohan Reddy**.

Figure 3: Technical Sessions by Prof.A.V. Reddy and Dr. B. Jagan Mohan Reddy

PRACTICAL SESSION -1

The hands-on practical sessions were conducted in the afternoon after lunch. The participants were allowed to form into two groups for better practical experience to learn about **"Organic Compound Synthesis"** by resource person **Dr. B. Madhav**. The participants of group 2 were focused on the "Chromatography Techniques" by resource person Dr. K. Anitha, who exhibited the instrument and explained it very briefly with the best examples.

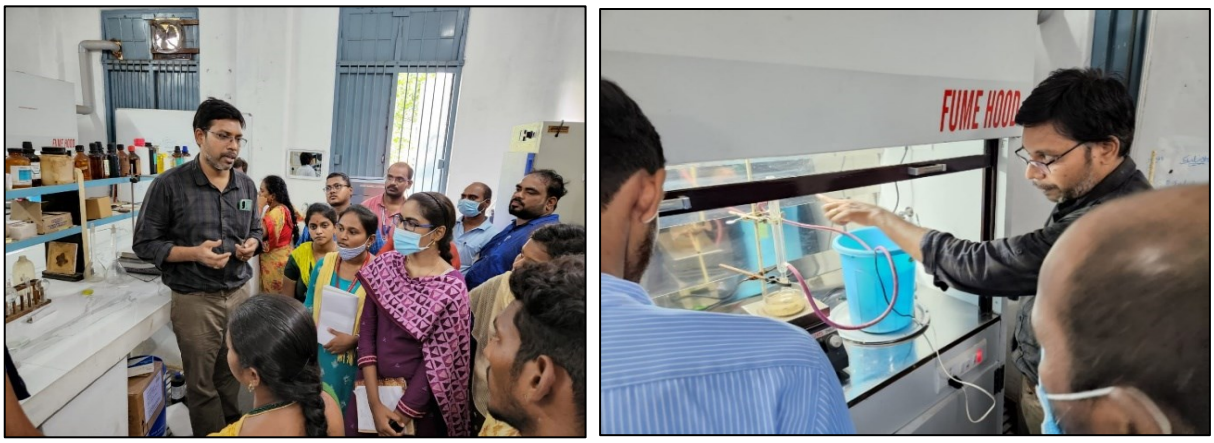

Figure 4: Training sessions by Dr. B.Madhav and Dr. K. Anitha

DAY-2, 21ST JUNE, 2022: (CHEMISTRY)

TECHNICAL SESSION-1:

On day 2, the expert and resource person **Dr.D.Suryakala** on ***"Nitrogen-Containing Heterocyclic Compound Synthesis"***. She discussed how various heterocyclic compounds had been developed, and Heterocyclic compounds possess a cyclic structure with two or more different kinds of atoms in the ring. **Dr. B. Madhav** delivered a topic on ***"Supra Molecular catalysis."***

Figure 5: Technical Session delivered by Dr. D. Suryakala and Dr.B.Madhav

PRACTICAL SESSION:

After lunch, the afternoon session was followed by the practical session. The hands-on sessions were conducted for the participants on ***"Compound Analysis by Using FTIR Equipment"*** by **Dr. B. Mallikarjuna.** The following practical session was conducted to the participants delivered on the topic ***"Compound Analysis by Using Uv-Spectroscopy Equipment"*** by the expert and resource person **Dr.M. Trinadh.**

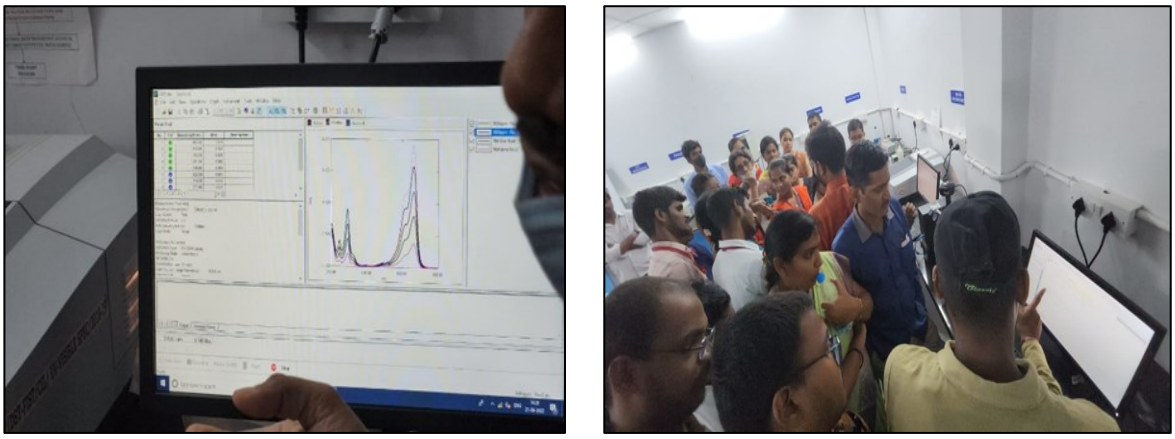

Figure 6: Technical sessions by Dr. B. Mallikarjuna and Dr.M. Trinadh

DAY-3: 22ND JUNE 2022 (BIOLOGY)

TECHNICAL SESSION:

On day 3, the expert and resource person, **Dr. V. Siva Kumar**, delivered about **Plasmids and Electrophoresis**. He discussed the definitions and importance of the topic. Technical session 2 started with the expert and resource person, **Dr. K. J. R. Kishore**, who delivered a topic on **"Application of biotechnology in Pharma Industry".**

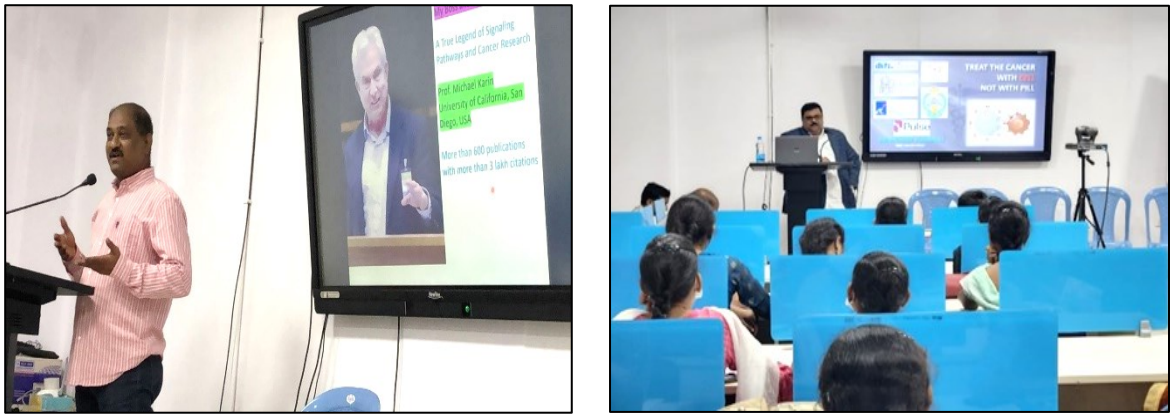

Figure 7: Technical Sessions delivered by Dr. V. Siva Kumar and Dr. K. J. R. Kishore

PRACTICAL SESSION:

The hands-on practical sessions were conducted in the afternoon after lunch. The participants were allowed to form into two groups for a better practical learning experience. The first group were trained about **"Plasmid isolation and purification"** by **Dr. V. Siva Kumar.** Group 2 were focused on **"SDS Page Electrophoresis and Agarose Electrophoresis"** by **Dr. K. Vasudha.**

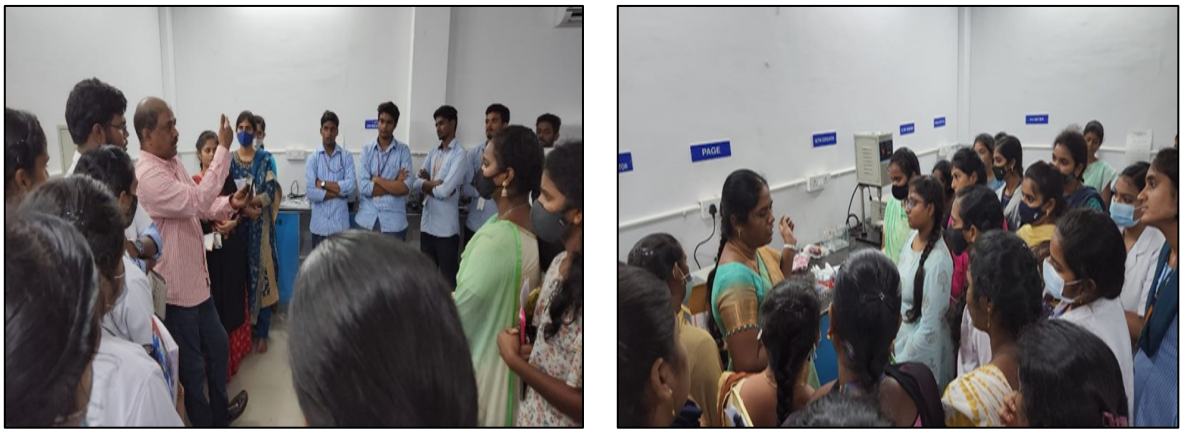

Figure 8: Practical Session by Dr. V. Siva Kumar and Dr. K. Vasudha

DAY-4, 23rd JUNE 2022: (BIOLOGY)

TECHNICAL SESSION:

On day 4, the resource person **Dr. S. Seshadri** delivered a talk on ***"Microalga biomass production in wastewater and its effective utilisation"***. He explained that microalgae are single-cell algae species that can survive individually or in clusters. Technical session-2, the Resource person **Dr. Ch. Surekha,** is an expert and delivered a talk on ***"Vector and its application (Plasmids, Phages, cosmids and Ti-plasmids)"***. She explained the definition and briefly discussed molecular biology and its applications.

Figure 9: Technical Session by Dr. S. Seshadri and Dr. Ch. Surekha

PRACTICAL SESSION:

The hands-on practical sessions were conducted in the afternoon after lunch. The participants were allowed to form into two groups. The first group learnt about **"Isolation of pure culture"** from an expert and resource person, **T.Sony**. The participants of group 2 were focused on practicals by the expert and a resource person **Dr. Shaik. Dilshad**, on the topic "**Dieses diagnostics in fish and shrimp**."

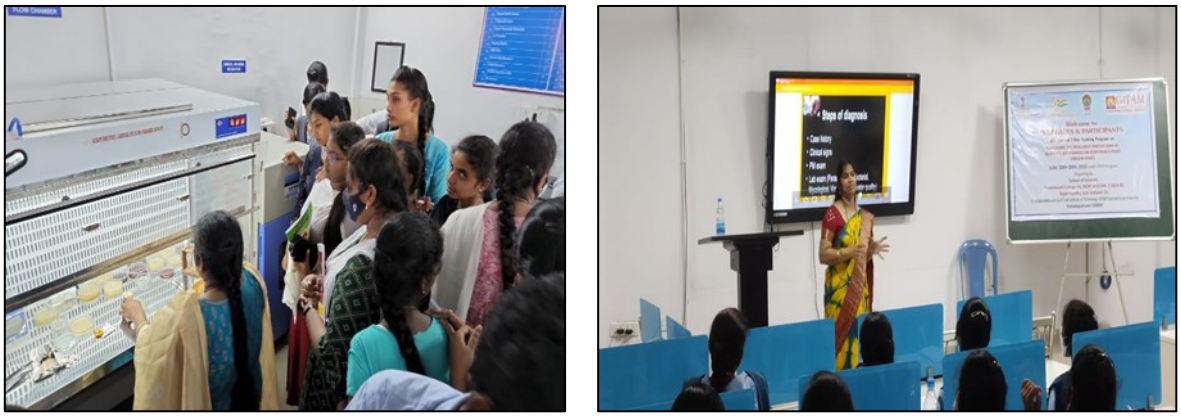

Figure 10: Practical session taken by T.Sony and Dr. Shaik. Dilshad

DAY-5, 24th JUNE 2022: (Physics)

TECHNICAL SESSION:

On day 5, In one of the technical sessions, one of the resource persons, **Prof.D.Harinadh** is an expert and delivered a talk on **"Material Research and its importance"**. He briefly discussed the basics of the topic as how material research is now changing, inducing into the fields of technology. Technical session two, the Resource person **Dr K. Rama Chandra Rao,** was an expert and delivered a talk on "**Nanomaterials and their application**". He briefly discussed the definition of the present scenario where it is used.

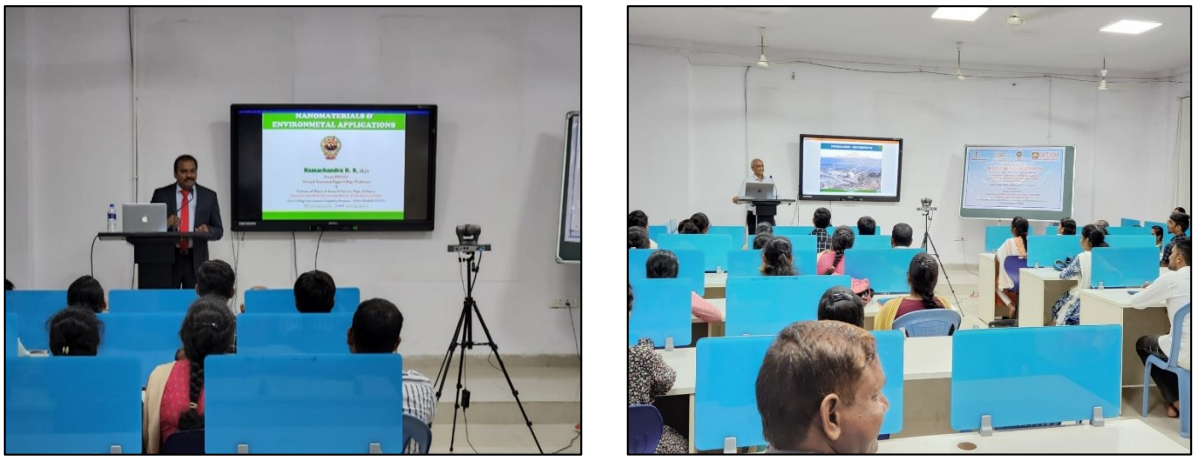

Figure 11: Technical Session delivered by Dr.K.Rama Chandra Rao and Prof.D.Harinadh

PRACTICAL SESSION:

The hands-on practical sessions were conducted after lunch. The participants were allowed to gain practical experience about ESR from an expert **Dr. Chaitanya Varma**. The participants of group 2 were taught practices on **Planck's Constants** by **Dr D. Sanjeev Kumar.**

Figure 12: Practical session taken by Dr. Chaitanya Varma and Dr D. Sanjeev Kumar

DAY-6, 25th JUNE 2022: (Physics)

TECHNICAL SESSION:

On day 6, In technical session one, the resource person Dr Synthil Kumar delivered a topic on ***"Development of single crystals for device fabrications"***. He discussed the uses of single crystals: minerals, such as quartz and gemstones. Technical session two, the resource person **Sri.V. Nataraja** delivered a talk on ***"Physics at BARC an R&D Respective".***

Figure 13: Sessions by Dr Synthil Kumar and R&D Perspective By Sri V. Nataraja

PRACTICAL SESSION-1:

The hands-on practical sessions were conducted after lunch. The participants were allowed to have practical experience with **Hall Effect** by the resource person **Dr. T.K. Visweswara Rao.** Group 2 were focused on **UV and FTIR** by resource person **Lt.Esub Basha Sk.** He discussed that UV (Ultraviolet) spectrophotometers use visible light to determine the concentration of chemicals in a mixture.

Figure 14: Session delivered by Dr. T.K. Visweswara Rao and Lt.Esub Basha Sk

DAY-7, 27TH JUNE 2022: (GEOLOGY)

TECHNICAL SESSION:

On day 7, resource person **Dr.M.R.Goutham delivered an expert lecture** on **"Importance of Petrographic studies".** In technical session two, the resource person, **Dr. C. Krishna,** is an expert and delivered a talk on ***"Optical properties of minerals".*** Petrographic

Analysis (ASTM C856) is a method to study the paste's optical and scanning electron microscopy (SEM).

Figure 15: Technical session delivered by Dr. M. R. Gowtham

PRACTICAL SESSION:

The hands-on practical sessions were conducted after lunch. The participants were allowed practical experience with ***"Petrological microscope"*** and ***"Identification of different optical properties"*** by an expert person Dr. M. R. Gowtham.

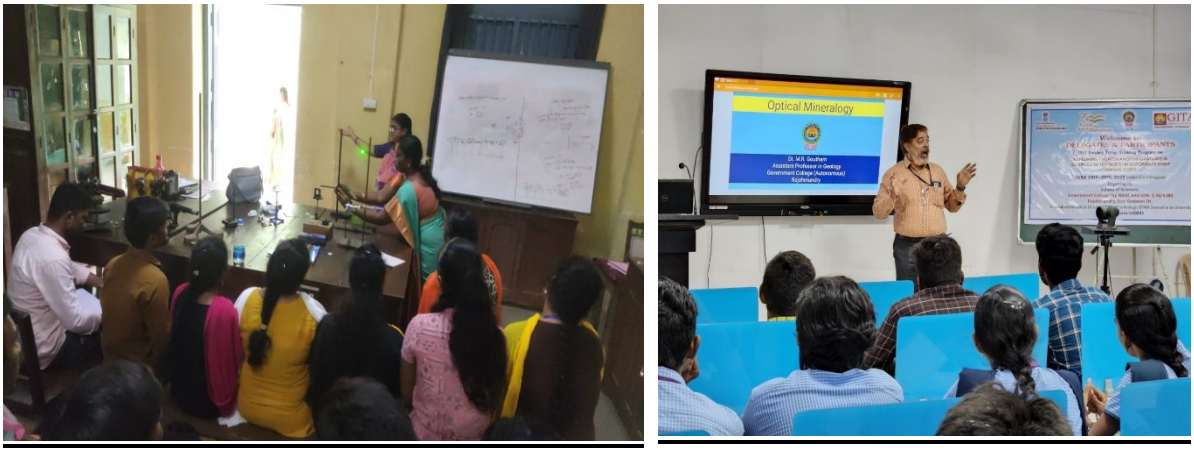

Figure 16: Session delivered by an expert person Dr. M. R. Gowtham

CERTIFICATE DISTRIBUTION

Figure 17: Distribution of certificates to the participants by Dr. Balla Srinivasa Prasad, STUTI coordinator

STUTI program coordinator Dr. Balla Srinivasa Prasad congratulated all the participants on the successful completion of the seven-day training. The coordinators of Government degree college Rajamundry Dr Mallikarjun and STUTI Program coordinator Dr Balla Srinivasa Prasad thanked each other for completing the training program. Certificates were distributed to the participants, feedback forms were collected, and the program concluded with the national anthem.

Figure 18: Group photo of all the participants at ERISHE-2022 at Govt Degree College, Rajahmundry, Andhra Pradesh

Regards,
Dr Balla Srinivasa Prasad
STUTI program coordinator (DST/RND/STUTI/2021/18)
GITAM Institute of Technology, GITAM Deemed to be University
Visakhapatnam-530045 (Email: **sballa@gitam.edu**/ Cell: **9848321070**)