Department of Chemistry

College of Engineering and Technology

SRM Institute of Science and Technology,

Kattankulathur.

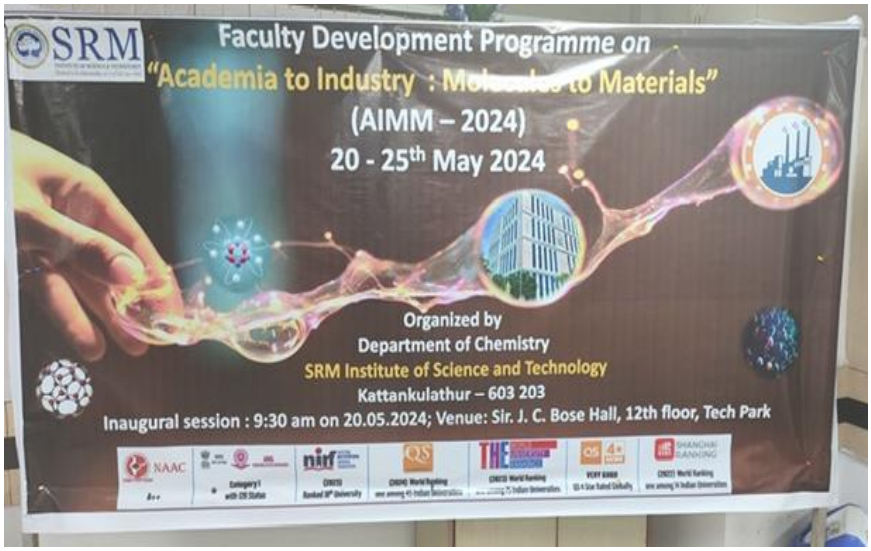
6 Days Faculty Development Programme on

"Academia to Industry : Molecules to Materials"

The FDP lecture series (1-12) focused on the main theme *"Academia to Industry : Molecules to Materials"*, with an aim of inspiring the faculty and research scholars from the Department of Chemistry, SRMIST to conduct translational research leading to product commercialization, during which multidisciplinary approaches, lot of inspiring stories that got unfolded during the research journeys, and insightful suggestions related to bridging the gap between academic and industrial researches were shared throughout the six days.

The FDP program was conducted from 20 - 25th May 2024 at four venues at SRMIST as below.

Sir. J. C. Bose Hall, 12th floor, Tech Park.
Turing Hall, 8th floor, Tech Park.
Seminar Hall 1 and 2, University Building.



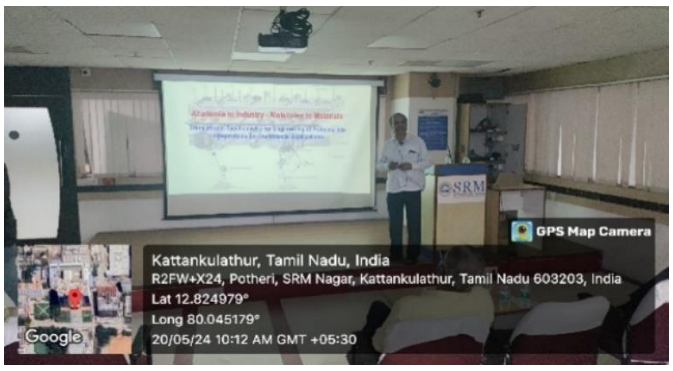
“Six-days Faculty Development Program on “Academia to Industry : Molecules to materials”, AIMM 2024 was successfully organized/conducted by the Department of Chemistry, College of Engineering and Technology, SRM Institute of Science and Technology, Kattankulathur from 20 – 25 May 2024 as part of the initiative to bridge the gap between academic and industrial researches for providing motivation to the faculty and research scholars to conduct translation research, thereby aiming to achieve commercialization of the molecules, materials, and the associated products.

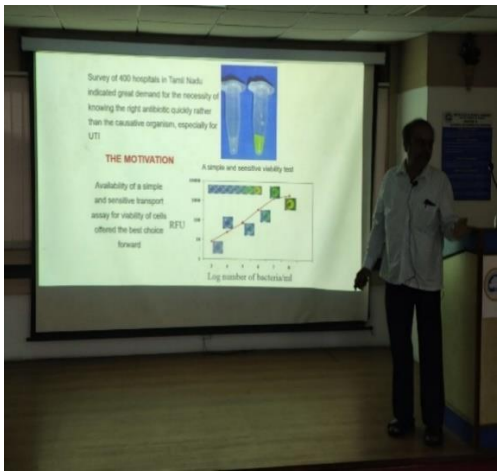
The FDP program started in a grand fashion at 9:35 am on 20th May 2024 with the inaugural function at Sir. J. C. Bose Hall, 12th floor, Tech Park, SRMIST. The welcome address was given by Dr. M. Arthanareeswari, Professor and Head, Department of Chemistry, SRMIST. In her welcome address, madam shared the Department’s vision and highlighted the value of team work, inspiration, continuous academic commitments, and research progression towards achieving the 350th ranking worldwide. She also explained the main theme of AIMM 2024, highlighting the importance of research collaboration between academia and industry and how effectively we should get connected to establish new collaborations and links with the industry to foster the academic research to the next level.

Following the welcome address, Dr. Baburaj Baskar, Associate Professor in Chemistry introduced the honorary chief guest, Dr. Ayyapanpillai Ajayaghosh, Prof. Shanti Swarup Bhatnagar Chair Professor, School of Basic Sciences, SRMIST and welcomed him to deliver the presidential address.

Prof. Ajayaghosh's presidential address was highly inspirational and thought provoking. He shared lots of valuable insights to the audience in a motivational and scientific perspective. From the wealth of research experience that he has acquired over the years, he mentioned the importance of academic and industrial research and explained how to connect these two sectors together to have fruitful outcomes. He further highlighted the importance of making use of time, money, and efforts effectively to conduct a quality academic research to achieve outstanding outcomes. By asking ourselves how good we are at time and money management and how effectively we can manage them, we will be aware of our inputs in a project. To put this in short, his inspiring words can be coined into a three-letter acronym "TEM" – Time, Effort, and Money. Remarkably, his inspiring message to the audience has been highlighted by many speakers during their talks on the first day.

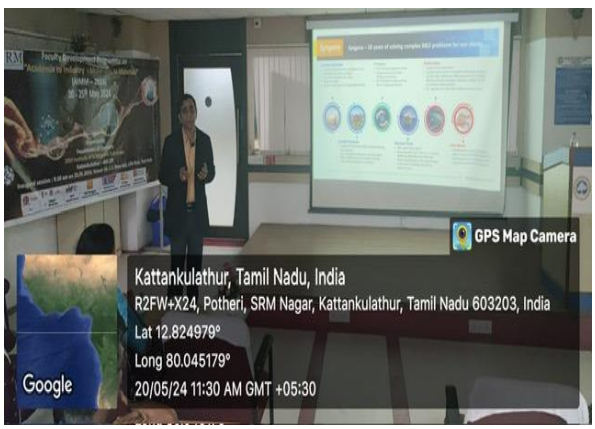
Next to the presidential address, Dr. K. Sanakaran, Professor of eminence, National Networking consultant, NTHID, Anna University, Chennai delivered a chief guest talk, whose talk was packed with full of inspirations, where his talk centred around the study of artificial enzymes, liposomes, and indigenous development of assay kits for screening antibacterial resistant drugs. We were overwhelmed to hear the news that Dr. Sankaran's antibacterial drug screening assay has already made inroads into the market and about 50000 assay kits were sold already and many more of them are ready to be sell out. We believe such an inspiring message could have truly motivated everyone to plan our research journey in a way that we can effectively translate our academic research into valuable products.

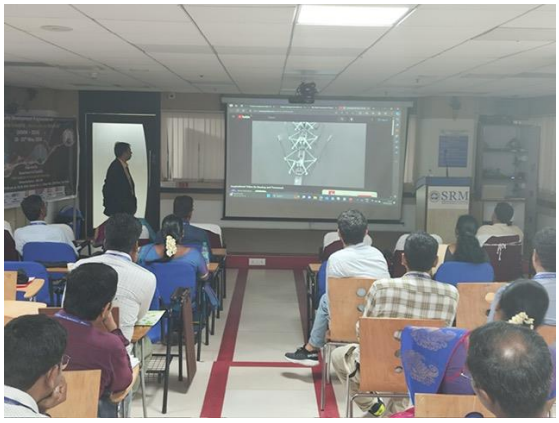
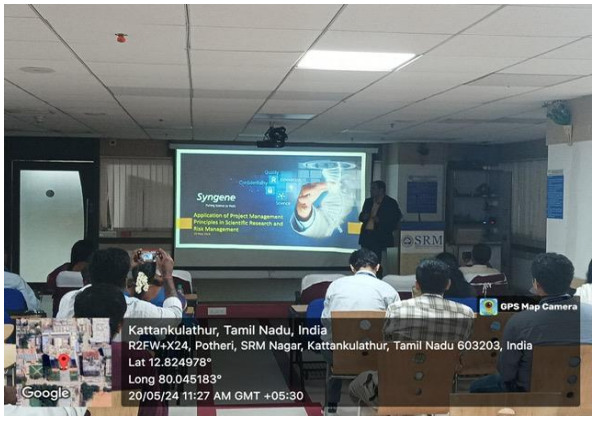





Dr. Dr. M. Arthanareeswari, Professor and Head, Department of Chemistry, SRMIST, felicitated Dr. K. Sanakaran with a flower bouquet and memento.

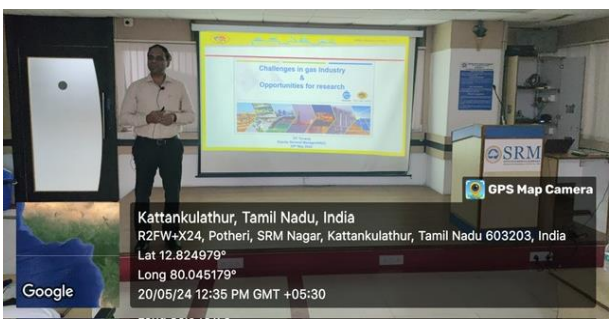
On day 1, Dr. S. Venkatraman, Head, enterprise project, Syngene, Bangalore brought the program to limelight, delivering the first lecture of the FDP lecture series on “Application of Project Management Principles in Scientific Research and Risk Management in Scientific Projects”. During his talk, he shared a rowing video, which inspired the audience and motivated us to focus on team work. He was very interactive with the audience throughout his talk and he gave valuable tips and guidelines on project management principles and risk management in scientific projects.



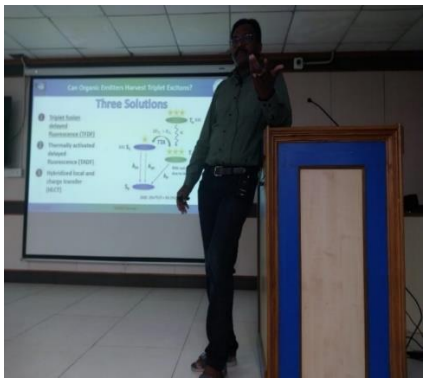

Dr. Senthil Andavan G. T., Assistant Professor in Chemistry, felicitated Dr. S. Venkatraman with a flower bouquet and memento (photos on the second row).

On the same day, Dr. T. P. Yuvaraj Deputy general manager (R & D), GAIL, India delivered the second lecture on “Challenges in Gas Industry and Opportunities for Research”. He listed out five main challenges in gas industry and went on giving explainations about the measures to be taken to tackle those challenges. He further continued to brief about high niche research areas and holy grail research opportunities such as development of indigenous photopolymers, alternate anti-freezing agents for hydrate removal, sulfur free odorants for natural gas and LPG, adsorbents to store natural gas. He also emphasized the audience to focus on game changer research activities which have huge market values.




Dr. Ananthanarayanan K, Research Associate Professor from Chemistry felicitated Dr. T. P. Yuvaraj with a flower bouquet and memento (photos on the second row).

On day 2, the 21st May 2024, lecture 3 was delivered by Prof. K. R. Justin Thomas from the Department of Chemistry, IIT Roorkee. His talk was about “Harnessing Single Enantiomer by Asymmetric Organic transformations”. Enthusiastically, he shared his inspiring research experiences and stories from his Taiwan diaries and highlighted that the island nation is presented with full of technological opportunities. He also added, the Taiwanese researchers are highly motivated and committed to translating their academic research activities into commercial products. He explained, while embarking through his research journey he had to come across lot of research challenges, but still he successfully went on to overcome those challenges by focusing on one challenge at a time and most importantly by shedding focus at exploring translational approaches where possible.



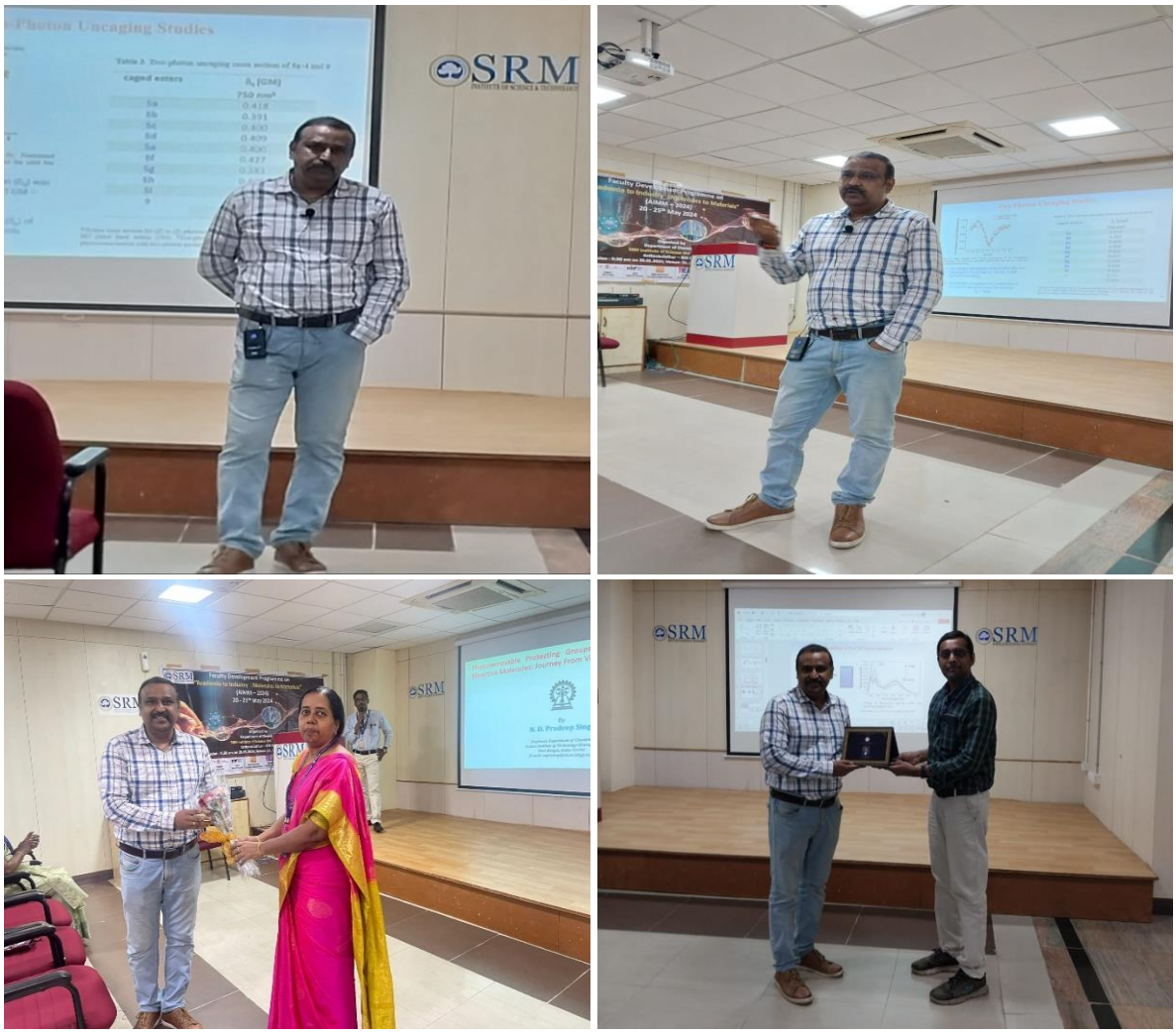
The second talk (lecture 4) on day 3 was delivered by Dr. Naveen Malik, Research Assistant Professor from the Department of Chemistry, SRMIST. His talk was about "Polypyridyl Metallo-Organic Assemblies for Smart Electrochromic Glasses". Dr. Naveen explained, smart electrochromic glasses have wide range applications, right from automated window screen applications to antiglare specs and rear mirrors uses in vehicles, and many more. He shared his mission and challenges which he had to encounter to set-up an in-lab spray gun to achieve a smooth uniform coating of polypyridyl metallo-organic assemblies. He then explained, how he went on to synthesize metallo-organic analogues with different arm lengths, surface functionalities, complexing ions such as iron and palladium and coat on the glass and flexible substrates, which switched colours instantly front- and forth upon application of positive or negative bias. At the end, audience had very fruitful interactions with Dr. Naveen, who explained their questions in a clean manner and in his very own humorous style.

We had two talks in the morning session of day 3, 22nd May, 2023. The first talk (lecture 5) was delivered by Dr. S. Anandhakumar, Research Assistant Professor from the Department of Chemistry, SRMIST. Dr. Anandh talked about the importance of knowledge transfer from academia to industry in the aspects of materials electrochemistry". He explained about the multifunctional materials which he had explored to date. He, further shared some interesting research events which got unfolded towards exploring the potential of the materials of his interest using electrochemistry as a tool during his PhD and Postdoc journeys. This includes exploring new materials for electrochemical sensors development focusing on high sensitivity and low detection limits and advanced materials developed for energy storage. He concluded his talk by highlighting the application of metal free hydride stabilised boron nanosheets for use as an anode material for Lithium-ion battery applications.

The second talk (lecture 6) on day 3 was delivered by Dr. Anjan Das, Research Assistant Professor from the Department of Chemistry, SRMIST. He talked about "Harnessing Single Enantiomer by Asymmetric Organic Transformations", highlighting how important harnessing single enantiomers meant to him and what challenges he had to overcome to achieve and/or monitor the asymmetric transformations using the state-of-art-techniques. He concluded that tuneable absorption and unique energy transfer properties of single enantiomers and their chiral assemblies can open new avenues in asymmetric catalysis. While we had opportunities to discuss a lot about focusing on translation approaches through true thought transitions and transformations to find new connections with industry, it was truly inspiring to hear from Dr. Anjas Das that the organic transformations are already in place.

The day 4 of FDP program started with the lecture 7 delivered by Dr. Karthik D, Research Assistant Professor from the Department of Chemistry, SRMIST. His talk was about the development of organic emitter designs for organic light emitting diode (OLED) applications. Dr. Karthik covered the fundamental concepts related to organic emitters and he emphasized that one should come up with some innovative organic emitter designs first and then he can further engineer it in detail to have an improved OLED performance to meet the market needs. He shared his PhD and post doc works, describing how his journey enroute to his success while he embarked steadily through the process of exploring new organic emitters for OLED applications.

The second talk (lecture 8) of the morning session on Day 4, 24th May 2024, was given by Prof. N. D. Pradeep Singh. He explained in detail about photoremovable protecting groups and their biological application, which covered the journey from visible to NIR light. His talk was inspiring and full of valuable technical insights. The audience thoroughly enjoyed his talk and the results he shared on were very insightful and informative. This includes the interplay between the light of interest, including visible and NIR and what sort of effects they can have on biological properties and applications.



Dr. M. Arthanareeswari, Professor and Head, Department of Chemistry, SRMIST, felicitated Prof. N. D. Pradeep Singh with a flower bouquet (photo on the left), and Dr. Senthil Andavan

G. T., Assistant Professor in Chemistry, handing over the memento to the speaker (photo on the right).

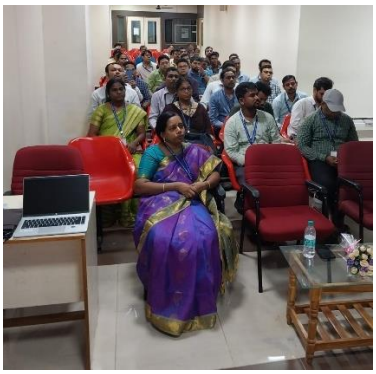
In the afternoon session on day 4, Prof. V. Ravichandran, Director of NIPER, Kolkata, delivered lecture 9 of the FDP lecture series. His talk was about “Translational Research”. Dr. Bernaurdshaw Neppolian, Dean (Research), graced the occasion with his esteemed presence. During his talk, Dr. Ravichandran explained, about the importance of translational research and which areas once should focus on, for example, how important it is to identify a research problem before thinking off the next step, towards commercialization. He also stressed the importance and need for academia-industry collaboration. One key research question of this type is how to bring down multiple synthesis steps of drug molecules such as 25 odd or more to three or less. If we can achieve this then we can considerably cutdown the time and costs involved. Dr. Ravichandran also talked elaborately about the research opportunities and commercialization prospects. He concluded, we should aim high and should think about taking effective measures to take the academic research to the next level.


Dr. M. Arthanareeswari, Professor and Head, Department of Chemistry SRMIST, and Dr. Bernaurdshaw Neppolian, Dean (Research) felicitated Prof. V. Ravichandran with a memento (photo on the right in second row).

Dr. K. Ganesh babu, Director, Syngene, Bangalore, delivered lecture 10 of the FDP series on day 5, 24.05.2024. His talk was about Syngene’s research capabilities and opportunities. He also explained about how academic research can be translated to next level that is how we can commercialize the products by making use of the commercialization opportunities and the industrial platforms available.



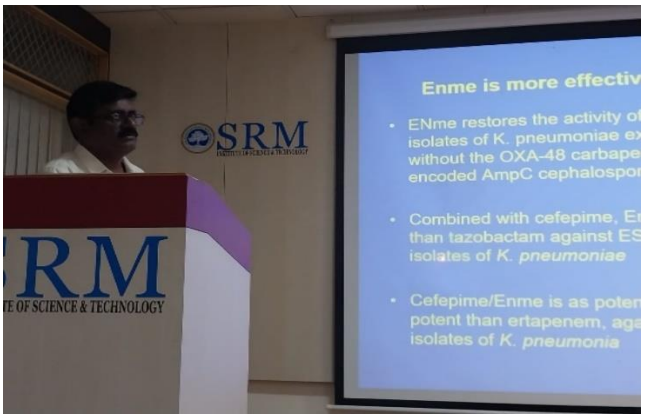

Lecture 11 on day 5 was delivered by Dr. Surya Narayanan Cherubuvada, Assistant General Manager, Sai India Leadership Team. He explained in detail about understanding pharmaceutical solid form diversity and applications. He talked about the properties of the pharmaceutical drugs, how they are synthesized, formulated, and delivered based on the market needs. His talk was insightful and motivated us to focus on the research strategies which can help with translation research.




Dr. Arockia Selvi J, Associate Professor Department of Chemistry SRMIST, felicitated Dr. Surya Narayanan Cherubuvada with a memento (photo on the right).

On day 6, the final day of FDP came to an end in a grand fashion with the final lecture of the series, lecture 12, delivered by Dr. U. P. Senthilkumar, Head (R & D established products,

3xper Innoventure Ltd, Chennai. His talk was fully inspiring and informative. Dr. Senthilkumar's inspired the audience with his talk on bacterial (ultra-mini creatures) intelligence. He highlighted the motivation that he has drawn over the years from the bacteria, particularly, the ultra-mini creatures like cyanobacteria which can create world by producing oxygen and are constantly looking at venturing new options and opportunities leading to faster innovations. Not only this we are excited to hear that they can nurture unique communication skills and involve in knowledge sharing among their community and are constantly developing resistance against the drugs being introduced in the market. He concluded his talk with an inspiring journey of the antibacterial drugs, right from the labs to the market and what sort of screening and quality control measures were in place to get the useful drugs patented or commercialised. As a take-home message, we researchers should think how useful things we can create for the society by focusing on translational research.



Following Dr. Senthilkumar's talk, the valedictory session on the final day begun. The closing ceremony remarks started to unfold one after the other in front of the distinguished delegates, Head of the Department, fellow faculty members and research scholars, who were gracing the occasion with their esteemed presence. Dr. Arun Prakash P, Research Assistant Professor, Department of Chemistry, SRMIST shared the FDP report. Following the FDP report sharing, Prof. V. Subramanian, Visiting Professor, School of Basic Sciences, SRMIST and former outstanding Scientist, CSIR-CLRI, Chennai, delivered the valedictory address. His talk was very intriguing and informative. He highlighted the importance of conducting an FDP program in an impactful fashion and asked the Head of the Department and the other colleagues who graced the occasion to keep frequently conducting FDP programs to bridge the gap between academia and industry. He added, we can motivate and provide new opportunities to the faculty by effectively organising such FDP frequently to venture exciting industrial collaboration oppurtunities, thereby they will be able to explore the commercial prospects related to their research. Dr. Subramanian also stressed the importance of utilising cryo-Transmission Electron Microscopy (cryoTEM) imaging technique in our research and he encouraged everyone to use such advanced tools in our research to unravel new atomic and molecular level insights, thereby we can make "Science" more exciting, informative, and useful to all. Finally, Dr. Karthik, Research Assistant Professor, Department of Chemistry, SRMIST, concluded the six-day FDP by delivering the vote of thanks, extending his thanks to everyone who supported us to have this FDP, a grand success. The event came to a grand

finish with the national anthem sung by everyone echoing around. With true inspiration and commitment, we sign off from everyone, sincerely thanking everyone who contributed for the success of this FDP. We look forward to meeting you in another inspiring and informative event organized by the Department of Chemistry, SRMIST, expecting your esteemed presence, support, and encouragement in those upcoming events as well.

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Kattankulathur - 603 203, Tamil Nadu, India.

6 Days Faculty Development Program on

"Academia to Industry : Molecules to Materials", 20-25 May, 2024.

Certificate of Participation

This is to certify that **Dr. Helen Annal Therese, Prof., Department of Chemistry, SRMIST, KTR**

has participated in the Faculty Development Program entitled ***"Academia to Industry : Molecules to Materials"*** *organized by the Department of Chemistry, SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu, India from 20th – 25th May, 2024.*

Dr. M. Arthanareeswari
Professor and Head
Department of Chemistry, SRMIST.

Dr. D. John Thiruvadigal
Dean (Sciences), SRMIST.