

SEMINAR REPORT

FUNCTIONAL POLYMERS FOR MATERIAL APPLICATIONS (POLYMAT-2023)

The Three-Day National Seminar on the topic “*Functional Polymers for Material Applications (PolyMAT-2023)*” was organized by the Post Graduate Department of Polymer Chemistry, Government College Attingal, sponsored by the Directorate of Collegiate Education and was held at ORICE Hall, Government College Attingal, on 15-17 November, 2023.

Inaugural Ceremony

The official function starts with the prayer song on 15-11-2023 at 10.00 AM. Dr. Sumi V. S., HoD, Department of Polymer Chemistry welcomed the participants into the Three-Day National Seminar. Dr. Muhammed Arif M., Principal, Government College Attingal presided over the inaugural session and addressed the gathering. Dr. Adarsh N., Assistant Professor and Seminar coordinator, Department of Polymer Chemistry presented the scope and importance of POLYMAT-2023 to the audience. Dr. K. I. Suresh, Chief Scientist, CSIR-NIIST, Thiruvananthapuram inaugurated the seminar and gave some valuable insight on the advantages of polymers and their applications. Felicitations were made by Dr. Sunil Raj N. V., IQAC Coordinator and Dr. Anitha S., Research Committee Convenor. Ms. Prabha J., Assistant Professor, Department of Polymer Chemistry extended the vote of thanks to the gathering and the participants dispersed for a tea break before the Technical Sessions started.

Session 1: Inaugural Lecture (Invited Talk 1)

Chair : Dr. Muhammed Arif, Principal, Government College Attingal

Resource Person : Dr. Suresh K. I., Chief Scientist, CSIR-NIIST

Dr. Suresh gave a lecture on “Polymer Chemistry in Sustainable Development” in which he describes briefly about the advancement in the field of polymer chemistry and latest research in polymers across the world. The participants were actively engaged in discussion and he concluded his session by wishing all the very best to the seminar.

Session 2: Invited talk 2

Chair : Dr. Dhanya Augustine, Assistant Professor, University College

Resource Person : Dr. Rahul Dev Mukhopadhyay, Asst. Professor, Ramananda College, WB

Dr. Rahul Dev delivered a lecture on “Audible sonochemistry with supramolecular systems” in which he discusses the possibility and applications of sonographic waves in supramolecular systems. The audience were excited to know about the audible sonochemistry and their discussions went long and Dr. Rahul Dev beautifully addressed the concerns raised by the audience. After the session of Dr. Rahul Dev, polymath-2023 dispersed for a short lunch break.

Session 3: Invited talk 3

Chair : Dr. Ajesh P. Thomas, Assistant Professor, Nirmalagiri College, Kannur

Resource Person : Dr. Praveen V. K., Senior Scientist, CSIR-NIIST, Trivandrum

Dr. Praveen V. K. delivered an interesting lecture on “Functional Materials Based on Supramolecular Polymers” in which he discusses the security related applications of supramolecular polymers. He demonstrated several videos which shows the potential of some of his systems in the field of security applications. He extended any type of help to the audience, especially to students to advance in their research career. Audience cleared their doubts in the discussion part.

Session 4: Invited talk 4

Chair : Dr. Rahul S. Asst. Prof., Dept. of Chemistry, M. G. College

Resource Person : Dr. Suneesh C. V., Asst. Professor, University of Kerala, Kariyavattom

Dr. Suneesh C. V. discussed about “Covalent Organic Frameworks for Energy and Environment Applications” in which he gave an insight to the audience about the need and necessity of the advancement of energy storage and environmentally benign applications in the current scenario. Audience cleared their doubts by actively engaging in the discussion part. The day 1 is concluded with this lecture.

DAY 2

Session 5: Invited talk 5

Chair : Dr. Sumi V. S., HoD, Department of Polymer Chemistry, GCA

Resource Person : Dr. Joshy Joseph, Principal Scientist, CSTD, CSIR-NIIST

Dr. Joshy Joseph delivered a lecture on the topic “Molecular Engineering of Cross-linkable, Triphenylamine derivatives for Organic Electronics Applications” in which he describes the recent advancements in the field of Organic electronics. He also mentioned the various opportunities available for students to carry out their research on Organic electronics. Audience was actively engaged in the discussion part and Dr. Joshy Joseph satisfactorily answered all the questions and concerns.

Session 6: Invited talk 6

Chair : Dr. Soumya S., Asst. Prof., Department of Polymer Chemistry, GCA

Resource Person : Dr. Aravind K. Asst. Prof., SB College Changanassery

Dr. Aravind gave a very interesting lecture on the topic “Controlling Molecular Behavior: The Concept of Stimuli (Experimental and Theoretical)” in which he discussed about the importance of theoretical simulations and how one can bridge the theory with experiments. He extended his discussion on demand of the audience. Soon after this session the polymath-2023 dispersed for the lunch.

Session 7: Invited talk 7

Chair : Dr. Sreejith M., Asst. Prof., St. Joseph’s College, Devagiri

Resource Person : Dr. Dickson D. Babu, Asst. Prof., St. Joseph’s College, Kozhencherry

Dr. Dickson D. Babu spoke on the topic “Energy in 21st Century: Catalyzing a Sustainable Future” in which he discussed about the ongoing research in energy generation and storage. He travels through his research career by quoting examples for the energy applications. The audience were very much excited by his demonstrations and raised many questions related to the talk.

Session 8: Short Oral Presentations

PolyMAT-2023 offered an opportunity for the young researchers to showcase their research findings in the form of Oral presentations and around 20 abstracts were received for the same. On Day 2 the last session was dedicated to the oral presentations and it was conducted in two different stages simultaneously.

Hall 1 (Main Hall-Orice): OP-01 to OP-06 (Chair: Dr. Betsy M. and Dr. Sreejith M.)

Hall 2 (Hall 2): OP-07-OP11 (Chair: Dr. Dhanya S. R. and Dr. Praveen Prakash)

The judges commented about the presentations as excellent and they selected one best presentation from each session. The Day 2 of polyMAT-2023 signed off soon after the oral presentations.

DAY 3

Session 9: Invited talk 8

Chair : Smt. Thushara R., Assistant professor, Government College Attingal

Resource Person : Dr. Ajesh P. Thomas, Assistant professor, Nirmalagiri College Kannur

The first talk on 17/11/2023 (DAY-3) was given by Dr. Ajesh P. Thomas, the talk started at 10:00 am and title of the talk was ‘Mitochondria Targeting Photodynamic Therapy and DNA G-quadruplex Stabilization as Potential Therapeutic Tool for Cancer’. The session was very informative as he explained the advantages of Photodynamic therapy. It was a very interactive session and the audience were curious to know about the future of PDT. The session ended at 11:15 am.

Session 10: Invited talk 9

Chair : Smt. Archana V. P., Assistant professor, Government College Attingal

Resource Person : Dr. V. M. Biju, Associate Professor and Head of Dept. of Chemistry, NIT Tiruchirappalli

Dr. V. M. Biju dealt with importance of electrocatalysis. The talk was mainly focused on the application of aromatic carboxylic acid derived bimetallic Nickel/Cobalt electrocatalysts for Oxygen evolution reaction and its sensing application. The topic was so well furnished that all the participants were really enjoyed the talk.

Session 11: Invited talk 10

Chair : Dr. Ajesh P. Thomas, Assistant professor, Nirmalagiri College Kannur.

Resource Person : Dr. Jatish Kumar, Assistant professor, Dept of Chemistry IISER Tirupati.

The last technical session of the Three- day National Seminar was engaged by Dr. Jatish Kumar. He explained the role of chemistry in the field of nanotechnology. He delivered a talk on the topic: “Chiral Functional nanomaterials”. The lecture has ignited the minds of the participants

in chemical and material sciences research areas. With this lecture polyMAT-2023 dispersed for a tea break before the valedictory session and prize distribution.

Valedictory Session

The valedictory function starts at 3.15 PM with a welcome note of Ms. Thushara R., Assistant Professor, Department of Polymer Chemistry, GCA. Prof. V. Manikantan Nair, former principal, Government College Attingal conveyed the valedictory address. Dr. Jatish Kumar from IISER Tirupati and Dr. Ajesh P. Thomas from Nirmalagiri College, Kannur expressed their views and remarks on the polyMAT-2023. The prize announcement of the Oral and Poster presentations (2 each) was done by Dr. Sreejith M., Assistant Professor, St. Joseph's College Devagiri and the awardees shared their experience with polyMAT-2023. Dr. Bhagyasree J. B. briefed about the seminar with an account of its preparations and timeline. Dr. Adarsh N., Seminar co-ordinator expresses the vote of thanks to all the participants and resource persons for making the seminar a grand success. Finally, Dr. Sumi V. S., HoD declared officially that the polyMAT-2023 is concluded and the participants dispersed with a suggestion to conduct the future editions of polyMAT in the coming years.