

International conference on Frontiers in Materials from Basic Science to Real-time Applications

March 13-16th, 2019

Organized by: Centre for Nano and Material
Sciences, JAIN University



Frontiers in Materials from Basic Science to Real-time Applications

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F2MD-2019 was organized by CNMS-JAIN University with an aim to share their Expertise, Knowledge and Innovative Ideas at CNMS, JAIN University, Bengaluru.

The conference was started with the inauguration and brochure release of the conference on March 13th, 2019.

Opening ceremony: Dr. Chenraj Roychand (President, Jain Group of Institutions), Prof. R. Geetha Balakrishna (Director, CNMS, JAIN University), Prof. Vijayamohanan Pillai (Former Director CSIR-CECRI), Prof. Anna Orlova (Professor of Optical Physics and Modern Natural Science & Chair of ITMO University/IMTO Russia), Dr. Manav Saxena (Convener-F2DM-2019 & Assistant Professor, CNMS-JAIN University) and Dr. Chandra Sekhar Rout (Co-convener-F2DM-2019 & Associate Professor, CNMS-JAIN University)

The eminent scientists and the leading experts on materials sciences Prof. Vijayamohanan Pillai (CSIR-CECRI), Prof Kanishka Biswas (JNCASR), Prof. Anna Orlova (IMTO Russia), Dr. Brahmananda Chakraborty (BARC Mumbai), Prof. G.U. Kulkarni (CeNS Bangalore),

Dr. Sasanka Dekka (Delhi University) had discussed on the various topics of materials sciences on the First day (March 13th, 2019) of the conference. Each talk was followed by deep Q&A session. The young researchers had presented their research work in the ~ 95 poster presentation and 17 oral presentations from different institutes/ colleges/universities across the country. Figure-1 gives an idea about the scientific participation of researchers across the country. Red colored states indicates the participation in the F2DM-2019.

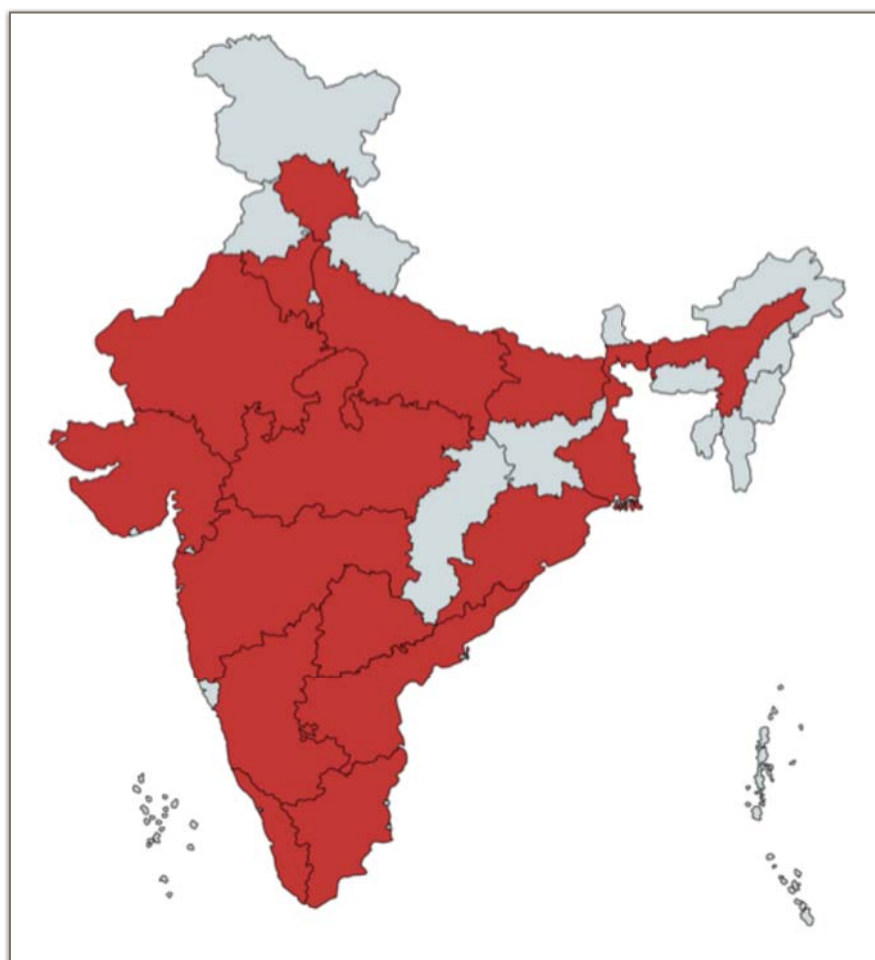


Figure 1: Scientific representation of researchers in F2DM-2019.

The conference was focused mainly on the Layered materials (Graphene, TMDs, MXenes, h-BN, Graphyne, Phosphorene etc.), 0D, 1D, which have attracted tremendous attention and led to a prosperous development in both fundamental investigations and advanced technological applications in nanoelectronics, flexible devices, solid lubricant, sustainable energy, and catalysis etc. Materials research which had been significantly aided by advancements in precise controlled synthesis in large-scale homogeneous and heterogeneous growth of these materials with crystallinity control, were discussed by the speakers. With the recent advent, an experimental guide for various spectroscopic, microscopic and electronic characterization for the single/thick- materials, QDs and their electronic structures, homo- or heterostructures, various methods to tune their electronic/ chemical properties by manipulating the surface, which were crucial and the key interest for the researchers throughout the globe were discussed in detail by different researchers/invited speakers.

The 4-day conference was comprised with interactive lectures with case studies, hands-on sessions, demonstrations of real-time analysis aimed to accelerate the understanding of advanced characterization techniques and data analysis skills.

The topics covered in the conference are mentioned below:

- Functionalization chemistry of 2D materials
- Electrochemistry of 2D materials
- Materials for energy storage and conversion
- Catalysis/Catalytic applications of materials
- Epitaxial growth and role of growth substrate
- Field-effect transistors, spin- and valley-tronics
- Materials for sensing application
- Computational simulation
- QDs and other nanomaterials
- Medicinal Chemistry
- Green Chemistry, Biomaterials

Total 289 researchers had participated in the F2DM-2019. Their participation based on their academic qualifications is shown by Figure 2.

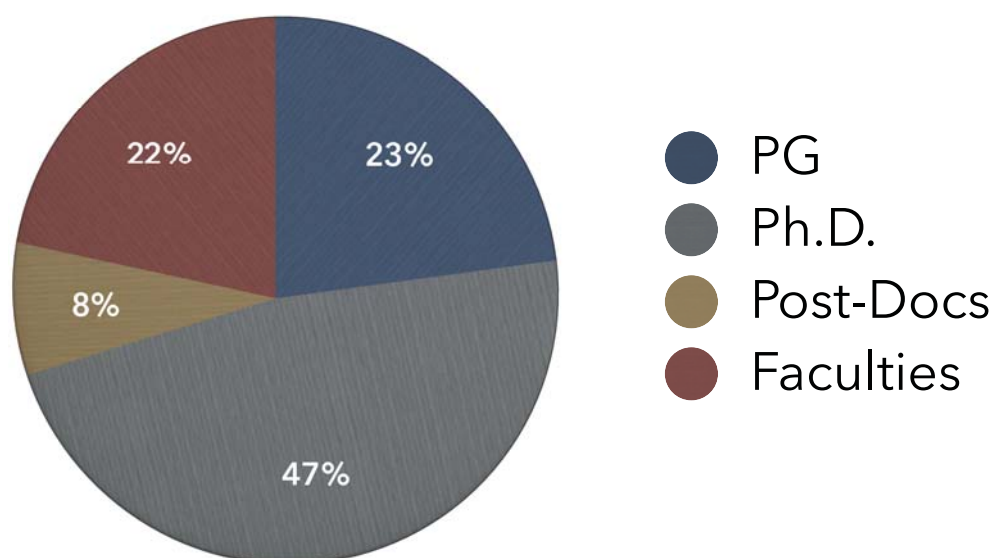
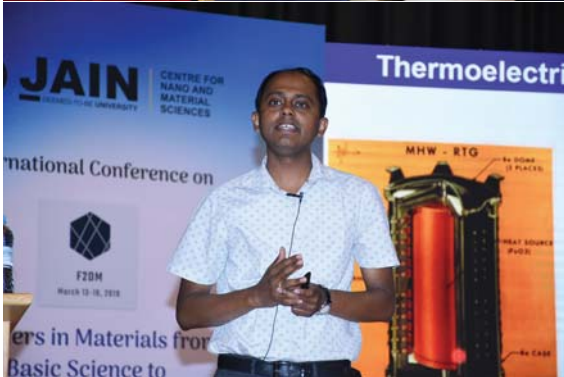


Figure 2: Participation according to academic qualification.

The young researchers participated with great zeal and the best oral and poster presentations were motivated for their efforts selected by different jury of leading experts. The best oral awardees (03) are: Ms. Bhavya M., Mr. Sumanta K. Karan, Ms. Radha N. The best poster awards (05) are: Ms. Divya Prasad, Ms. Geetha B. N., Mr. Manohar, Mr. Suman Kundu, Mr. Naresh Killi, Mr. Sandeep M.

Closing Ceremony: The last session of the conference "Basic Science to real time applications: Principle and challenges in data collection and interpretation" which were designed to help young researchers to interact more closely and discussed their research problem, was concluded with the talk of Prof. M. A More (University of Pune), Dr. Debajeet Bora (CNMS-JAIN University), Dr. Satyapriya (CNMS-JAIN University). These session were mainly focused on the characterization through electron microscopy and data analysis, problem in solar cell research, data analysis and tunable fluorescent semiconductor QDs and their biological applications problem. The young researchers were awarded in gracious presence of Prof. Jogendra Behra (NISER Bhubaneswar), Dr. Dr. N.V.H. Krishnan (Registrar, JAIN University), Prof. R. Geetha Balakrishna (Chair-F2DM-2019 & Director, CNMS-JAIN University), Dr. Manav Saxena (Convener-F2DM-2019 & Assistant Professor, CNMS-JAIN University).



Conference organizing committee expresses its gratitude to the conference moderator, Dr. Shajesh P. (Associate Professor, CNMS), Dr. Varsha Brahmkhatri (Assistant Professor, CNMS) for taking up the responsibility to coordinator during the sessions for smooth functioning of this event. we also express our thanks to all the coordinators, organizing committee members, research scholars for their valuable time and inputs.

Very special thanks to all the participants, our Exhibitors and all the funding agencies (JGI, SERB, BRNS, RSC) and sponsors to have bestowed and their faith in us. We hope their support in future endeavors.



Group photo of all the First-day participants in F2DM-2019.