Third International Conference on Mathematical Techniques and Applications (Second-e-ICMTA-2022)

The third edition of International Conference on Mathematical Techniques and Applications (ICMTA-2022) a three-day event, took place from 23rd March to 25thof March. The virtual conference, hosted by the Department of Mathematics witnessed good response from the delegates. Despite the prevailing Covid-19 pandemic the management were gracious to support the event. The inaugural ceremony of the ICMTA 2022 on "Mathematical techniques and its applications" commenced with "Tamilthai vazhthu". Associate Professor and Head Incharge Dr. B. Vennila, formally welcomed all the dignitaries and participants from various parts of the globe. She mentioned about the significance of Virtual conference at this pandemic situation and its aim. Dr A. Anuradha assistant professor Department of Mathematics presented a detailed curtain raiser of the SRM IST and highlighted the innovations and achievements of SRMIST in the research platform. Dr. N. Parvathi introduced the chief guest, Pro. S Sundar, Director, National Institute of Technology, Mizoram. In the inaugural address by the chief guest, The relation between Mathematics and day to day life was well interpreted by him. In his speech he briefly explained the applications of mathematics in science/automation as it is used in global development. Prof. T. V. Gopal, Dean CET, SRM Institute of Science and Technology presided over the function. One of the coordinators Dr. J. Sasikumar delivered the vote of thanks.

The conference included keynote speakers and invited talks by the eminent invited speakers around the world in virtual mode using Zoom platform. The resource persons were from premier institutes in India and abroad such as – The resource persons are called from premier institutes in India and abroad such as - The University of Newcastle, Australia, Polytechnic University of Burcuresti: Burcuresti, Romania, The Penn State University, United States, University of Bahrain, Kingdom of Bahrain, Technical University of Munich, Germany, IIT Madras, IIT Kharagpur, IIT Kanpur, IIT Guwahati, NIT Warangal, NIT Durgapur, Bhabha Atomic Research Centre, Mumbai

The first day, witnessed 4 invited talks. Professor Michael H. Meylan from the University of Newcastle, Australia has given a talk on the topic "Modelling the Vibration of Ice Shelves and Icebergs". In this talk, he presented methods to model the impact of very long ocean surface waves on ice shelves, primarily waves in the tsunami and has extended the model to icebergs.

In second talk of the first day, Professor S. Ponnusamy from the Department of Mathematics, Indian Institute of Technology Madras has, given a talk on the topic "Bohr's power series Inequality and planar Harmonic Mappings." Professor explained more general issues concerning Bohr-type inequality in refined and general form. In addition, gave a few specific problems of interest for function theorists. In the next talk of the day, Professor Somesh Kumar from Indian Institute of Technology, Kharagpur spoke on the topic "Inference on the common mean direction of several Langevin populations." Prof. Kumar considered the problem of estimation and testing procedures for the common mean direction of several von Mises-Fisher (or Langevin) populations with a common mean direction but different concentration parameters. In the fourth talk of the first day, Professor Savin Treanta from the Polytechnic University of Burcuresti, Romania, delivered a technical session on "Well-Posedness, Existence and characterization results for certain variational problems". In this talk, Prof. Savin has discussed well-posedness and well-posedness in the generalized sense for a new class of isoperimetric-type constrained variational control problems. He also introduced new versions for the concepts of monotonicity, pseudomonotonicity and hemicontinuity associated with the considered curvilinear integral functional.

There were 5 invited talks on the second day of the conference. Professor Allen Bickle from Penn State University, USA has given a talk on "Bounds and Algorithms for Graph Coloring". He presented definitions, results and essential applications of graph coloring followed by, Professor Debabrata Datta, Former Senior Scientist & HOD, RP&AD, from Bhabha Atomic Research Centre, Mumbai. Professor Debabrata Datta spoke on"Fractal and Application of its Stochastic Variation as an Innovative Optimizer." In this talk, Prof. Datta has provided an overview of fractals as well as demonstrate application of fractals in different scenario. On third talk of the second day, Professor Swaroop Nanda Bora from the Department of Mathematics, IIT Gauhati, spoke on the topic "Constructing efficient breakwaters for mitigating wave forces in a two-layer fluid in finite ocean depth". Prof. bora illustrated the interaction of oblique surface waves with various types of vertical caisson type porous breakwater placed on an elevated rigid block in a two-layer fluid. In fourth talk of the second day, Professor Samarjit Kar from the Department of Mathematics, National Institute of Technology Durgapur, has given a talk on "On Uncertain Multi-objective Minimum Spanning Tree Problem ". He explained multi-objective

programming problems in a different uncertain environment. He discussed briefly how heuristic and metaheuristic techniques help to get the best efficient solution for the problems, which involve the simultaneous optimization of several competing objectives and constraints.

The final and third day of the conference had 4 invited talks. Starting with Prof. Y Sreenivasa Rao from Department of Mathematics, NIT Warangal, Telangana. "Attribute-Based Cryptography and Its Applications" delivered by Prof. Y Sreenivasa Rao enthralled the audience. Prof. Rao discussed the role of mathematics in our daily life data stores and its safety. Professor Geetanjali Panda from the Department of Mathematics, Indian Institute of Technology, Kharagpur, the second speaker of the day discussed the basics of the Trust region scheme for the optimization problem in detail. Professor B. V. Rathish Kumar from the Department of Mathematics, Indian Institute of Technology Kanpur, gave an excellent talk on the currently facing pandemic by the world Covid -19. The topic's title "Modeling and simulation of the potential indoor airborne transmission of SARS-COV-2 Virus" was apt to the prevailing situation. Prof. Rathish discussed the mathematical model formulation and simulation of potential transmission of SARS-COV-2 Virus in a realistic indoor Context. Professor Peter Massopust from Technical University of Munich, Germany gave the concluding talk on the topic "The many faces of fractal interpolation". In his talk, Prof. peter has explained about an iterated function system and briefly reviewed some properties of such IFSs and presented the geometric construction of affine fractal interpolation functions. Then he has elaborated original geometric construction and regarded it as a construction in an appropriate function space.

The feedback from the participants, revealed that all the invited talks were interesting and highly appreciable. A total 401 research papers have been received for the conference. 6 papers from foreign countries such as Tanzania, Nigeria, Pakistan, Malaysia and Muscat, Oman. After the review committee's assessment, a total of 330 papers have been accepted for the presentation. The parallel sessions organized enabled the participants to present the papers through google meet platform.

The staff, post graduate and graduate students of the Department also showcased their research work by virtual presentations which won the appreciation of the jury. The valedictory function began with the welcome address by Dr. K. Ganesan. Prof B. Napolean, Dean Research gave the presidential address. He briefed the audience on how to do quality research. Dr. B. Vennila introduced the Chief Guest Dr. Peter Massopust from Technical University of Germany.

The valedictory address was delivered by the chief guest. This was followed by the conference report delivered by one of the coordinators Dr. Pankaj Kumar which photographed in detail the entire event. The feedback given by the participants was a moral boost to the organizing committee and motivated all the participants for their future contribution to the field of Mathematics. The coordinator of the conference Dr. B. Vijaya Kumar proposed the vote of thanks. The curtains came down with the National Anthem.

A glimpse of the Third Edition of e-ICMTA-2022