

**88th Annual Conference of Indian Mathematical Society**  
**An International Meet**  
**Birla Institute of Technology, Mesra, Ranchi**  
**December 27 – 30, 2022**

**Schedule**

**December 27, 2022**

<b>December 27, 2022</b>	
8:30 - 9:25	<b>Registration</b>
9:30 - 10:30	<b>Inauguration</b>
10:35 - 10:55	HIGH TEA
11:00 - 12:00	<b>Presidential Address</b> (Technical): S. D. Adhikari, Ramakrishna Mission Vivekananda Educational and Research Institute, Kolkata <i>“Some zero-sum constants and their weighted generalizations”</i>
12:05 - 13:05	<b>S. Ramanujan Memorial Award Lecture:</b> Sudesh Kaur Khanduja, IISER Mohali <i>“A walk through irreducible polynomials”</i>
13:05 - 14:05	LUNCH
14:10 - 15:10	<b>Invited Lecture:</b> Mahesh Kakde, IISc, Bengaluru <i>Title to be announced</i>
15:15 - 15:30	<b>Paper presentation for AMU Prize:</b> Sejal Puvar, Maharaja Sayajirao University of Baroda, Baroda <i>“Common fixed point results in G-metric spaces using rational type cyclic contraction via C-class function”</i>
15:35 - 15:50	<b>Paper presentations for IMS Prizes:</b> <b>Group - 1</b> (Discrete Mathematics (Combinatorics, Graph Theory, Posets), Lattice Theory, Set Theory, Logic, Number Theory and related areas): Laba Kumar Das, NIT Nagaland <i>“On virtually <math>D_1</math>, <math>D_2</math> and principally hollow lifting modules”</i>
15:55 - 16:10	<b>Group - 4</b> (Differential / Integral / Functional equations and inequalities, Special Functions, Numerical Analysis and related areas): Rahul Barthwal, IIT Kharagpur <i>“Study of a supersonic-sonic patch arising in axisymmetric relativistic transonic flows with general equation of state”</i>
16:10 - 16:25	TEA-BREAK
16:30 - 17:00	<b>A. K. Agarwal Awardee Lecture:</b> Janaki Raman Babu, IIST Thiruvananthapuram <i>“Structure of <math>A_2</math>-fibrations having fixed point free locally nilpotent derivations”</i>
17:05 - 18:05	<b>Plenary Lecture:</b> Peter Sarnak, Institute of Advanced Study Princeton, USA <i>Title to be announced</i>
20:00	DINNER

## December 28, 2022

9:00 - 10:00	<b>33rd Hansraj Gupta Memorial Award Lecture:</b> Apoorva Khare, IISc, Bengaluru <i>"Polymath14: Groups with norms"</i>
10:05 - 10:25	TEA-BREAK
10:30 - 13:00	<b>Symposium</b> (in Parallel sessions) <b>(1) Commutative Algebra</b> Convenor: Ramakrishna Nanduri, IIT Kharagpur (i) A.V. Jayanthan, IIT Madras <i>"Subadditivity strand connectivity and multigraded Betti numbers"</i> (ii) H. Ananthnarayan, IIT Bombay <i>"The multiplicity conjecture and graded resolutions"</i> (iii) Rajiv Kumar, IIT Jammu <i>"Componentwise linear powers of vertex cover ideals"</i> (iv) Neeraj Kumar, IIT Hyderabad <i>"Linear type binomial edge ideals and the regularity of their powers"</i> (v) Ramakrishna Nanduri, IIT Kharagpur <i>"On regularity of symbolic and ordinary powers of certain ideals associated to graphs"</i> <b>(2) History of Ancient Indian Mathematics</b> Convenor: Aditya Kolachana, IIT Madras (i) Venketeswara Pai, IISER Pune <i>"Rationale for Paridhi-saskāra as described in Yuktidīpikā"</i> (ii) Sivaram Ambikasaran, IIT Madras <i>"Spectrum of magic squares"</i> (iii) K. Mahesh, IIT Kharagpur <i>"Combinatorial techniques discussed by Munīśvara"</i> (iv) Aditya Kolachana, IIT Madras <i>"The pedagogical significance of the Līlāvati"</i>
13:00 - 14:00	LUNCH
14:05 - 15:05	<b>Contributory Paper presentations</b>
15:05 - 15:35	<b>IMS Award Lectures:</b> (i) <b>Subhash Bhatt Awardee Lecture:</b> Keshab Chandra Bakshi, IIT Kanpur <i>"Lattice of intermediate subalgebras"</i>
15:40 - 16:10	(ii) <b>A. M. Mathai Awardee Lecture:</b> Timir Karmakar, NIT Meghalaya <i>"Physics of unsteady Couette flow in an anisotropic porous medium"</i>
16:10 - 16:25	TEA-BREAK
16:30 - 17:30	<b>Plenary Lecture:</b> Noga Alon, Princeton University, USA <i>"Constructive and non-constructive combinatorics"</i>
17:35 - 19:00	<b>Contributory Paper Presentations</b>
19:15 - 20:15	<b>Cultural Programme</b>
20:30	DINNER

## December 29, 2022

9:00 - 10:00	<b>33rd V. Ramaswamy Aiyer Memorial Award Lecture:</b> Debasish Goswami, ISI Kolkata <i>“Quantum symmetry of classical and noncommutative spaces”</i>
10:05 - 10:25	TEA-BREAK
10:30 - 13:00	<b>Symposium</b> (in Parallel sessions) <b>(3) Number Theory</b> Convenor: P. Sanoli Gun, IMSc, Chennai (i) Jyothsnaa Sivaraman, CMI, Chennai <i>“An analogue of the Brun-Titchmarsh theorem”</i> (ii) B. Ramakrishnan, HRI, Prayagraj <i>“An extension of Ramanujan-Serre derivative map and some applications”</i> (iii) R. Thangadurai, HRI, Prayagraj <i>“On the growth of trace of powers of algebraic integers”</i> (iv) Sunil L Naik, IMSc, Chennai <i>“Ramanujan tau function and its prime divisors”</i> (v) Veekesh Kumar, NISER Bhubaneswar <i>“Sufficient conditions for classifying algebraic integers”</i> (vi) Madhu Raka, Punjab University, Chandigarh <i>“Recent developments of some non-homogeneous problems”</i> <b>(4) Water Wave Mechanics</b> Convenor: Swaroop Nandan Bora, IIT Guwahati (i) Trilochan Sahoo, IIT Kharagpur <i>“Hydroelastic analysis of very large floating structures in the context of blocking dynamics: an overview”</i> (ii) Ranadev Datta, IIT Kharagpur <i>“A semi analytic approach to study the hydroelasticity of a Container Ship under slamming and green Water loading”</i> (iii) Subash Chandra Martha, IIT Ropar <i>“Mathematical techniques for solving some linear and nonlinear problems of water wave mechanics”</i> (iv) Harekrushna Behera, SRM Institute of Science and Technology, Chennai <i>“Wave scattering by an array of floating and submerged circular structures”</i> (v) Santu Das, Institute of Advanced Study in Science and Technology, Guwahati <i>“Ocean surface waves are influenced by slight water compressibility”</i> (vi) Swaroop Nandan Bora, IIT Guwahati <i>“Impact of porous structures in mitigating hydrodynamic coefficients acting on a floating elastic plate in a two-layer fluid”</i>
13:00 - 14:00	LUNCH
14:00 - 14:30	<b>Invited lecture in Parallel sessions</b> (Half an hour:) (i) Shalini Gupta, Punjab University <i>“Central codes of Dihedral 2- groups”</i> (ii) A. Swaminathan, IIT Roorkee <i>“Quasi kernel orthogonal polynomials and ratio of hypergeometric functions involving chain sequences”</i>

14:30 - 17:00	<p><b>Symposium</b> (in Parallel sessions)</p> <p><b>(5) Discrete Mathematics</b>  Convenor: Vinayak Joshi, Savitribai Phule Pune University, Pune</p> <p>(i) Lavanya Selvaganesh, IIT BHU  <i>“Super Power graphs of finite groups”</i></p> <p>(ii) T. Tamizh Chelvam, Manonmaniam Sundaranar University, Turunelveli  <i>“Additive graphs from commutative rings”</i></p> <p>(iii) Shariefuddin Pirzada, Kashmir University, Srinagar  <i>“On Laplacian eigenvalues of graphs and zero divisor graphs associated to the ring of integers modulo <math>n</math>”</i></p> <p>(iv) Peter J. Cameron, University of St. Andrews, United Kingdom  <i>“Graphs defined on groups”</i></p> <p>(v) Vinayak Joshi, Savitribai Phule Pune University, Pune  <i>“On the inter-relationship between graphs associated with algebraic structures and graphs associated with ordered structures”</i></p> <p><b>(6) Financial Mathematics</b>  Convenor: Anindya Goswami, IISER Pune</p> <p>(i) Milan Kumar Das, Institute of Statistical Science, Taipei  <i>“On matrix exponential differentiation with application to weighted sum distributions”</i></p> <p>(ii) Nimit Rana, Imperial College London, United Kingdom  <i>“Regime switching optimal growth model with risk sensitive preferences”</i></p> <p>(iii) Kuldip Singh Patel, IIT Patna  <i>“Numerical methods for option pricing: Need and Challenges”</i></p> <p>(iv) Anindya Goswami, IISER Pune  <i>“Data-driven option pricing using single and multi-asset supervised learning”</i></p>
17:00 - 17:15	TEA-BREAK
17:15 - 17:45	<p><b>Invited lecture in Parallel sessions</b></p> <p>(i) Pradyumn Kumar Sahoo, BITS Hyderabad  <i>“Wormhole geometry: Science or Science fiction?”</i></p> <p>(ii) Nitu Kumari, IIT Mandi  <i>“Role of group defense on pattern formation analysis in a tritrophic food chain model”</i></p>
17:50 - 19:15	<b>Contributory Paper Presentations</b>
20:00	DINNER

### December 30, 2022

9:00 - 10:00	<p><b>36th P L Bhatnagar Memorial Award Lecture:</b>  Adi Adimurthi, TIFR CAM, Bengaluru  <i>“Critical point theory in PDE”</i></p>
10:00 - 10:30	<p><b>Narasinga Rao prize lecture:</b>  Chaitanya Ambi, IISER Pune  <i>“An estimate of the growth of cohomology with coefficients”</i></p>
10:30 - 10:45	TEA-BREAK
10:50 - 11:20	<p><b>Invited lecture in Parallel sessions</b></p> <p>(i) R. Radha, University of Hyderabad, Hyderabad  <i>Title to be announced</i></p> <p>(ii) Shiv Datt Kumar, MNNIT Allahabad, Prayagraj  <i>“Representations of finite groups and algebras”</i></p>
11:25 - 11:55	<p><b>P K Jain Award Lecture:</b>  To be announced</p>
12:00 noon	General Body Meeting to be followed by Valedictory Function
13:30	LUNCH