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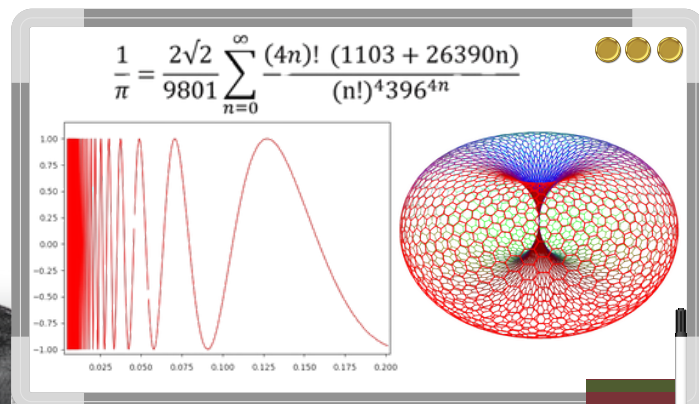
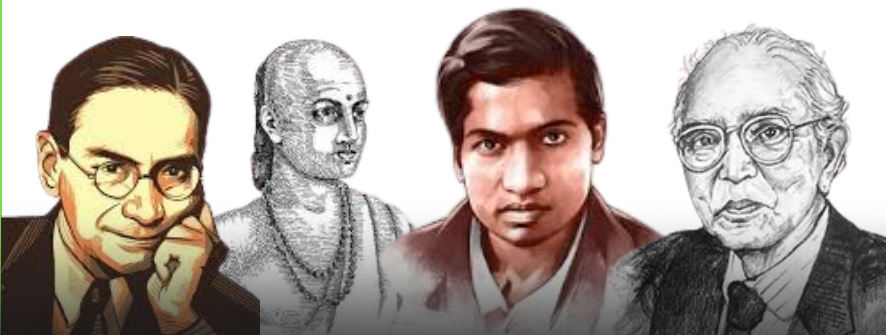
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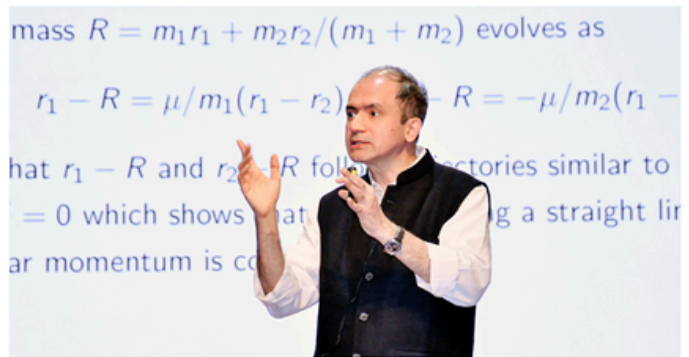
GANANAM

*A Monthly Newsletter of
Department of Mathematics and Computing*



EVENTS

The Department of Mathematics and Computing organized a Mathematics Colloquium on 6 December 2025 as part of the **National Mathematics Day** celebrations along with the institute's centenary celebration week. On this occasion, **Prof. Kaushal Verma** (Shanti Swarup Bhatnagar awardee 2014), Department of Mathematics, IISc Bangalore delivered a keynote lecture on **"Some Aspects of the Three-Body Problem"**.

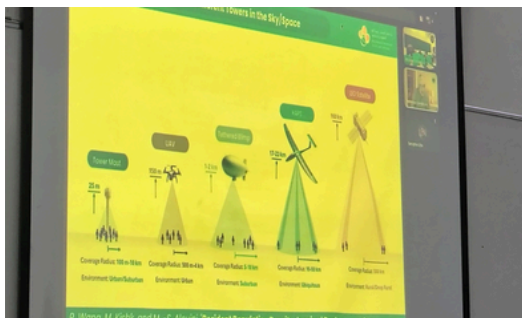
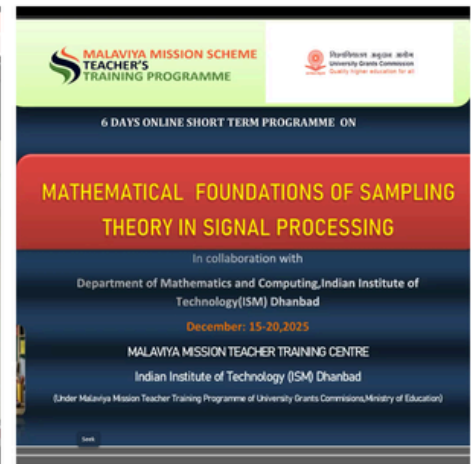
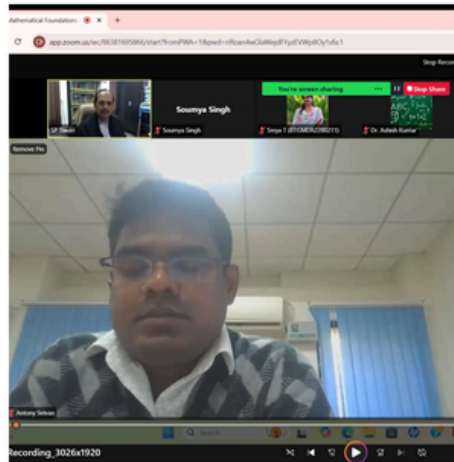


As part of the centenary celebration, the department showcased a variety of live demonstrations, such as Ramanujan's birthday square, the Golden Ratio, Games based on binary numbers, graph theory, Vedic mathematics, LLM applications in smart homes, AI-based material understanding.



EVENTS

Prof. A. Antony Selvan (Convenor) and **Prof. N. Bala** (Course Co-Coordinator) organized an online Workshop on Mathematical Foundations of Sampling Theory in Signal Processing at IITISM Dhanbad during December 15-20, 2025, under Malaviya Mission Scheme Teacher Training Programme.



Prof. T. Ojha organized the 2nd Edition of 6DCIoT workshop along with IEEE ANTS 2025 at IIIT Delhi on 18th December 2025. Also, he took part in a panel discussion on "Semantic Communication for Wireless Networks" on 17th December 2025.

Prof. M. Verma was part of the organizing team as the Publicity Chair for the 10th International Conference on Computer Vision and Image Processing (CVIP-2025) held at IIT Ropar during December 10-13, 2025. Additionally, she served as a Session Chair during the conference.



PUBLICATIONS

- S. Hossain, **A. Das**, S. Naskar, S. N. Sahu, K. Ghoshal. Suspended Sediment Transport in Ice-Covered Turbulent Flow: Semi-Analytical Solution and Parametric Sensitivity, *International Journal for Numerical and Analytical Methods in Geomechanics*, 2025 (Accepted).
- S. Bansal and **P. K. Kewat**. A family of optimal dual-containing and reversible linear codes over F_4 , *Finite Fields and Their Applications*, 111, 102777, 2026.
- P. Maurya, A. Hazra and **A. Kalita**, "Unleashing the Potential of Industrial IoT and Industry 5.0," in IEEE Engineering Management Review. 2025.
- K. Priyanka and **A. Antony Selvan**. Construction of irregular complete interpolation sets for shift-invariant spaces, *Journal of Fourier Analysis and Applications*, 31, 71, 2025.
- N. Choudhary, A. Nirvana and **S.P. Tiwari**. L-fuzzy automata based on complete regular residuated and co-residuated lattice: A categorical study, *Fuzzy Sets and Systems*, 529, 109730, 2026.

INVITED TALKS

- **Prof. J. Dasgupta** was one of the speakers in the National Centre for Mathematics Workshop on Toric Varieties, held in Kerala School of Mathematics, Kozhikode from 8-20 December 2025.
- **Prof. S. Misra** delivered a talk titled "On Stability of Syzygy bundles" at 40th Annual Conference of Ramanujan Mathematical Society (RMS) 2025 held at Department of Mathematics, IIT Delhi on 18th December, 2025.
- **Prof. S. Laxmi** delivered an invited talk on Inverse Modeling of PDEs Using PINNs and their Applications in Biomedical Imaging at NIT Harmirpur, Department of Mathematics and Scientific Computing on 18th December 2025.
- **Prof. P. Kewat** delivered an invited talk on "Primality Testing" at Department of Mathematics & Statistics, Deen Dayal Upadhyaya Gorakhpur University, U.P., on the occasion of National Mathematics Day 2025 on 22 December 2025.
- **Prof. S. A. Sahu** delivered a keynote lecture on "Biography and works of S. Ramanujan" on National Mathematics Day at Department of Mathematics, Magadh University, Bodh Gaya on 22 December 2025.

STUDENT ACHIEVEMENTS

Ms. Riya Ghosh (a PhD student of **Prof. A. Antony Selvan**) received the Inder Mohan Thapar Research (IMTR) Award - 2024.

Mr. Ayush Jain and **Mr. Mannan Golchha**, 2nd year B. Tech students, received INR ₹7 Lakh grant by the Ministry of Electronics and Information Technology (MeitY), Government of India under the GENESIS EIR-2 program.

Mr. Mannan Golchha, 2nd year B. Tech student, was awarded the Chanakya UG Fellowship from TEXMiN Foundation.

STUDENT ACTIVITY

- **Ms. Sweta Bara** (a PhD student of **Prof. S. Misra**), have attended the Annual Foundational School (AFS-1) workshop sponsored by National Center for Mathematics (NCM) (namely AFS-1) held at IIT Patna during 1st December - 27th December, 2025.
- **Mr. Somnath Das** (a PhD student of **Prof. S. Laxmi**), presented their work titled "RAPINN: A novel Residual guided self-Adaptive loss balanced Physics-Informed Neural Network for robust early cancer detection", in the International Conference on Applied AI and Scientific Machine Learning (CASML), during 8-11 December, 2025 at IISc Banalore.
- **Mr. Dusmant Naik** (a PhD Student of **Prof. S. A. Sahu**) presented his paper titled "Wave reflection in pre-stressed FGPM structure under thermal effect" in 91st Annual Conference of the Indian Mathematical Society - an International Meet, organized by Department of Mathematics and Astronomy University of Lucknow, December 26-29, 2025 and in National Conference on "Recent Trends in Mathematical and Computational Sciences (RTMCS-2025)", organized by the Department of Mathematics, Magadh University, Bodh Gaya, 28-29 November 2025.

FACULTY ACHIEVEMENT

- **Prof. T. Ojha** was appointed as an Associate Editor of IEEE Transactions on Green Communication and Networks.
- **Prof. S. Misra** became a Lifetime Member of the Ramanujan Mathematical Society (RMS).

MATHEMATICS AND COMPUTING NEWS

- **This tiny chip could change the future of quantum computing:** A new microchip-sized device could dramatically accelerate the future of quantum computing. A chip-scale, low-power, mass-manufacturable laser-control technology enables scalable, far more powerful quantum machines than today's custom, bulky systems. [[Read More](#)]
- **Ramanujan's 100-year-old pi formula is still revealing the Universe:** Ramanujan's elegant formulas for calculating pi, have unexpectedly resurfaced at the heart of modern physics. Researchers at IISc showed that abstract mathematical structures underlying these formulas also govern real phenomena—from turbulence and percolation to black holes—revealing a deep link between pure mathematics and fundamental physics. [[Read More](#)]
- **These mesmerizing patterns are secretly solving hard problems:** Tessellations aren't just eye-catching patterns—they can be used to crack complex mathematical problems. By repeatedly reflecting shapes to tile a surface, researchers uncovered a method that links geometry, symmetry, and problem-solving. [[Read More](#)]

EDITORIAL TEAM

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