

# Samvid

A Biannual Newsletter of IIT Tirupati



Volume 5 | Issue 2 | July 2022

## Shri S. Somnath (Chairman ISRO) at 7<sup>th</sup> Institute Day Celebrations

IIT Tirupati celebrated its 7<sup>th</sup> Institute Day on April 6, 2022 with Shri S. Somnath, Chairman ISRO, as the Hon'ble Chief Guest. The event started with a welcome address by the Dean of Student Affairs, Dr. N. Venkaiah, followed by the Students' General Secretary's brief review of the activities during the academic year 2021-22. The Director then delivered his speech and invited Shri S. Somnath to address the gathering. In his address, the Chief Guest emphasized on the responsibility of IIT graduates in developing indigenous technologies necessary for building *Atma Nirbhar Bharat*. The Hon'ble chief guest then awarded medals to the meritorious students. The celebrations ended with various cultural events organized by the students.



## MOUs SIGNED BY IIT TIRUPATI

### Hindustan Shipyard Limited, Visakhapatnam

An MoU was signed between Hindustan Shipyard Limited, Visakhapatnam and IIT Tirupati on March 02, 2022, to collaborate for developing futuristic technologies. It is agreed that ITTT and HSL will come with the innovative ideas and design for the development of the prototypes for the welding Technology.

### National Atmospheric Research Laboratory (NARL), Gadanki

An MoU was signed between National Atmospheric Research Laboratory, Gadanki and IIT Tirupati on April 06, 2022, for the exchange of academic knowledge and communicating ideas and solutions among the research fraternity.

### Raman Research Institute (RRI), Inter-University Centre for Astronomy and Astrophysics

An MoU was signed between Raman Research Institute (RRI), Inter-University Centre for Astronomy and Astrophysics and IIT Tirupati for the joint production of a precision ion-trap.



### University of Agder, Norway

An MoU was signed between University of Agder, Norway and IIT Tirupati on June 14, 2022, to promote academic collaboration between the two institutes in areas of mutual interest.

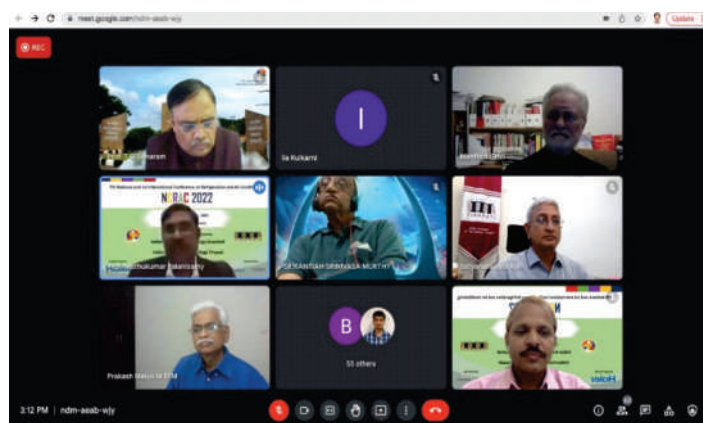
## Invited and Special Lectures/Talks held at IIT Tirupati

- Prof. Krishna Maddaly, Department of Mathematics, Ashoka University, delivered a talk on "Eigenvalue Statistics for Random Matrices and Operators" on 17<sup>th</sup> February 2022.
- Prof. Shata Laisram, Professor of Mathematics & Associate Dean, Indian Statistical Institute, delivered a lecture on "On a Conjecture of Erdos on Squares in Arithmetic Progression" on 24<sup>th</sup> February 2022.
- Prof. Anupam Kumar Singh, IISER Pune, delivered a lecture on "Word Maps on Groups" on 3<sup>rd</sup> March 2022.
- Prof. Anirban Mukhopadhyay, IMSc, Chennai, delivered a lecture on "Turan-Kubilius inequality for numbers and polynomials" on 24<sup>th</sup> March 2022.
- Prof. Parthanil Roy, Indian Statistical Institute Bangalore, delivered a lecture on "How to Tell a Tale of Two Tails?" on 31<sup>st</sup> March 2022.
- Prof. Prem Devanbu, Department of Computer Science, University of California, Davis, delivered a talk on "Naturalness and Bimodality of Code: A Research Overview" on 25<sup>th</sup> March 2022.
- Prof. Maria Ángeles Japón Pineda, Faculty of Mathematics, University of Sevilla, delivered a lecture on "A walk through the fixed-point property in  $L^p(\Omega)$  and in variable  $L^{p(t)}$  ( $\Omega$ ) function spaces." on 28<sup>th</sup> April 2022.
- Prof. Arni Srinivas, August University, delivered a talk on "Opportunities available for Mathematics and Statistics Students" and interacted with the students and scholars on 26<sup>th</sup> May 2022.
- Dr. Sattwick Dey Biswas, Research Fellow, Institute of Public Policy, National Law School of India University Bangalore, India, delivered a talk on "Mysteries of valuation: Few thoughts on valuation (of land) and compensation during expropriation" on 6<sup>th</sup> January 2022.
- Dr. Gopal Sarangi, Assistant Professor, TERI School of Advanced Studies, New Delhi, India, delivered a talk on "Transitioning towards a Sustainable Energy Regime in India: Dichotomies and Distortions" on 11<sup>th</sup> January 2022.
- Dr. Tarun Menon, Assistant Professor, National Institute of Advanced Studies Bengaluru, India, delivered a talk on "How Evidence-Based Is Evidence-Based Policy?" on 21<sup>st</sup> January 2022.
- Dr. Raghu Murtugudde, Visiting Faculty, Climate Studies, Indian Institute of Technology Bombay, delivered a talk on "What Can You Do About Climate Change?" on 28<sup>th</sup> January 2022.
- Dr. Yugank Goyal, Associate Professor, Public Policy Department of Social Sciences Flame University, Pune, India delivered a talk on "Who moved my vote: Data Analysis of Indian Elections" on 5<sup>th</sup> February 2022.
- Dr. Ariel Ortiz-Bobea, Associate Professor, Charles H. Dyson School of Applied Economics and Management, Cornell University Ithaca, New York, delivered a talk on "Historical and future impacts of anthropogenic climate change on US agricultural productivity" on 11<sup>th</sup> February 2022.
- Dr. Sharachchandra Lele, Distinguished Fellow in Environmental Policy & Governance, Centre for Environment & Development, Ashoka Trust for Research in Ecology and the Environment (ATREE), & Adjunct Faculty, Department of Humanities and Social Sciences, Indian Institute of Science Education & Research (IISER) Pune delivered a talk on "Exploring the Normative and Theoretical Foundations of Environmental Public Policy" on 18<sup>th</sup> February 2022.
- Dr. Akshaya Kumar, Assistant Professor, Indian Institute of Technology Indore, delivered a lecture on "Cinema after Film: Digital disruption in the Bhojpuri speaking region" on 2<sup>nd</sup> March 2022.
- Prof. Peter P Mollinga, Professor of Development Studies School of Oriental & African Studies, University of London, UK delivered a talk on "Water and development: understanding the plurality of productive, consumptive and symbolic uses and meanings of water" on 8<sup>th</sup> April 2022.
- Dr. Vijayendra Rao, Head and Lead Economist World Bank, delivered a talk on "Can Economics Become More Reflexive? Exploring the Potential of Mixed-Methods" on 22<sup>nd</sup> April 2022.

## Conferences, Workshops, Symposiums Organized by the Institute

### International Conference on Refrigeration and Air Conditioning

Prof. E. Anil Kumar organized 7<sup>th</sup> national and 1<sup>st</sup> international conference on Refrigeration and Air conditioning in collaboration with Department of Mechanical Engineering, IIT Guwahati during February 24 to 26, 2022.



## Workshop on Computer System Design

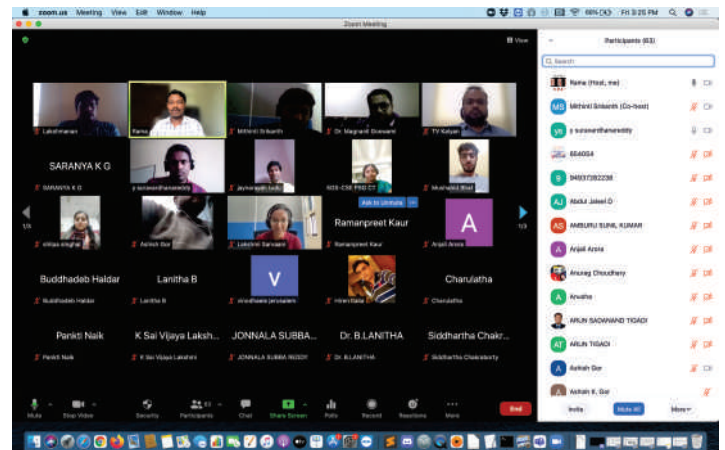
A 5-Day online workshop on "Computer System Design" funded by ATAL Academy of AICTE, New Delhi was hosted by the Dept. of Computer Science and Engineering during January 3-7, 2022. Around 100 participants attended the workshop and learnt the fundamental concepts to design a computer system. Seven resource persons from various IITs delivered the lectures. Dr. G. Ramakrishna from the Dept. of Computer Science and Engineering was the coordinator of the workshop.

## One-Day Scientific Workshop on Nanomechanical & Nanotribological Testing

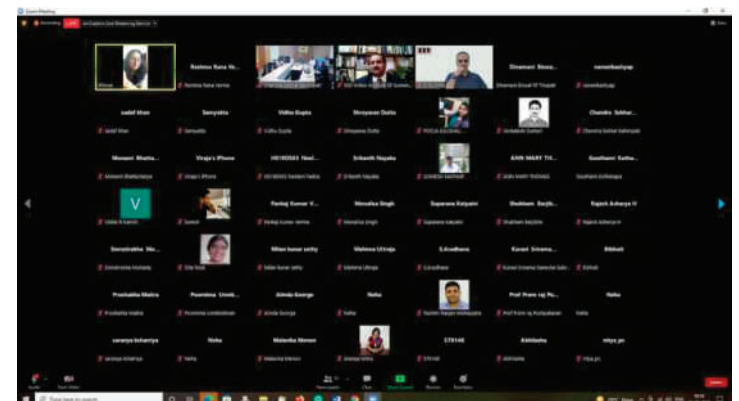
Dr. Ajay Kumar, Department of Mechanical Engineering, organized a 1-Day Scientific Workshop on Nanomechanical & Nanotribological Testing on June 3, 2022 in association with Industron and Bruker.

## International Conference on Climate Change

Dr. Chandra Sekhar Bahinipati and Dr. Rahul A. Sirohi from



the Department of Humanities and Social Sciences, organized an International Conference in online mode on 'Tackling Climate Change through Urban Resilience: Role of Institutions and Public Policies in Canada and India', during March 24-25, 2022. Scholars from India and abroad joined for a very fruitful discussion on the impact of climate change and the role of public policies in mitigating those changes.



## International Workshop on Public Policy

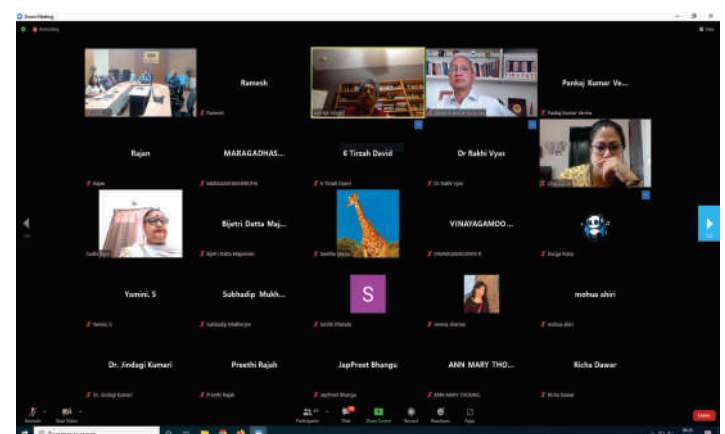
Dr. Rahul A. Sirohi and Dr. Chandra Sekhar Bahinipati organized an International Workshop on 'Public Policies for the Post-Pandemic Era', in online mode, during February 24-25, 2022.

## Workshop on Advanced Manufacturing of Biomedical Devices for Precision Health Technologies

A 6-Day online workshop on "Advanced Manufacturing of Biomedical Devices for Precision Health Technologies" funded by ATAL Academy of AICTE, New Delhi was hosted by the Dept. of Mechanical Engineering during January 24-29, 2022. Around 100 participants attended the workshop. Dr. M. Ravi Sankar from the Dept. of Computer Science and Engineering was the coordinator of the workshop.

## Online GIAN Course on Migration and Citizenship: Comparative Perspectives on African American and Asian American Literatures

A GIAN course on "Migration and Citizenship: Comparative



Perspectives on African American and Asian American Literatures", was hosted in online mode by Dr. Prabha Shankar Dwivedi, on 14, 15, 16, 17, 21, 22, and 23 March 2022, at the Indian Institute of Technology Tirupati. Prof. Amritjit Singh, Langston Hughes Emeritus Professor of English and African Studies at Ohio University in Athens, Ohio, was the teaching faculty for the course. As many as 36 participants from all over the country participated in the course.

### Online GIAN Course on *Cross Environmental Ethics: Challenges and Potential*

A GIAN course on "Cross Environmental Ethics: Challenges and Potential", was hosted in online mode by Dr. Bharath Kumar, on 05, 06, 12, 13, 19, 20, 26, and 27 March 2022, at the Indian Institute of Technology Tirupati. Prof. Monika Kirloskar Steinbach, Professor of Philosophy at VU University Amsterdam, was the teaching faculty for the course. As many as 80 participants from all over the country participated in the course.

### Online GIAN Course on *The Advaita Vedanta Tradition and the Possibilities for a Hindu Theology of Liberation*

A GIAN course on "The Advaita Vedanta Tradition and the Possibilities for a Hindu Theology of Liberation" was hosted in online mode by Dr. Bharath Kumar and Prof. A. Raghuramaraju, during April 25-29, 2022, at the Indian Institute of Technology Tirupati. Prof. Anantanad Rambachan, Professor of Religion at St. Olaf College, Minnesota, USA, was the teaching faculty for the course. As many as 100 participants from all over the country participated in the course.

### VRITIKA Research Internship Programme

The one-month Vritika Research Internship Programme sponsored by the Science & Engineering Research Board (SERB), Department of Science and Technology (DST), Govt of India, under Accelerate Vigyan Vritika scheme was organised at IIT Tirupati by Dr. Ajay Kumar from January 03, 2022 to February 28, 2022.

## Faculty and Staff News

### New Faculty Entrants

Name	Designation and Department	PhD	Previous Employment
Dr. Srikrishna Bera	Assistant Professor, Chemistry	Westfälische Wilhelms Universität Münster, Germany	Postdoctoral Fellow, Ecole Polytechnique Federale De Lausanne, Switzerland
Dr. Avadh Bihari Narayan	Assistant Professor, Civil and Environmental Engineering	Indian Institute of Technology Kanpur	Research Associate-I, Indian Institute of Technology Kanpur
Dr. Shilpak Banerjee	Assistant Professor, Mathematics and Statistics	The Pennsylvania State University, Pennsylvania, USA	Assistant Professor, Indraprastha Institute of Information Technology Delhi
Dr. Someswara Rao Sanapala	Assistant Professor, Chemistry	Indian Institute of Technology Bombay	Senior Scientist, Vaxxilon Deutschland GmbH, Germany
Dr. Aniket Uday Joglekar	Assistant Professor, Physics	The University of Chicago, Illinois, US	Postdoctoral Researcher, Laboratoire d'Annecy-Le-Vieux de Physique Theorique, France

### New Staff Entrants

Full Name	Designation	Department
P. Mallikarjuna	Assistant Executive Engineering	Engineering Unit
T. Sathish Kumar	Technical Officer	Electrical Engineering

## Sponsored Research Projects

S. No.	Title	Funding Agency	Investigator and Dept.
1	Process topology based computational methods for sensor and actuator placement in large scale systems	Science and Engineering Research Board- SERB	Dr. Nabil M. Chemical Engineering
2	Many-body quantum engines	Science and Engineering Research Board- SERB	Dr. Ranjan Krishna Modak Physics
3	Functionally Graded Polymer Derived Ceramic Surface Nano Composites using Solid-State Additive Friction-Stir Manufacturing (AFSM)	Science and Engineering Research Board- SERB	Dr. Ajay Kumar Mechanical Engineering
4	Finishing of 3D Printed High Aspect Ratio Complex Internal Conformal Cooling Channels using Economic Polymer Rheological Abrasive Semisolid Medium	Science and Engineering Research Board- SERB	Dr. Mamilla Ravi Sankar Mechanical Engineering
5	Cyber Physical Modelling and Detection of Cyber Attacks in a WADC for Smart Grids	Central Power Research Institute	Dr. Vignesh V. Electrical Engineering
6	Teachers associateship for research excellence (TARE)	Science and Engineering Research Board- SERB	Prof. Mamilla Ravi Sankar Mechanical Engineering
7	Development of a deterministic single photon source for quantum networking applications	I-HUB Quantum technology foundation	Dr. Arijit Sharma Physics
8	Inner cohomology of $GL_n$	Science and Engineering Research Board- SERB	Dr. Krishna Kishore Mathematics
9	Mechanical and microstructural behaviour of laser based direct energy deposited and wire arc additive manufactured Ti-6AL-4V Components	Aeronautics R&D Board (ARDB)	Dr. Ajay Kumar Mechanical Engineering
10	Theoretical Investigation of Bio-inspired Channel Based Membrane for Water Purification	Science and Engineering Research Board- SERB	Dr. Rajib Biswas Chemistry
11	Track and Trigger: ultra sound-responsive mesoporous Mn@Silica nanocapsules for delivery and therapeutic microRNA's and p53 supplemented suicide genes to glioblastoma	Department of Biotechnology	Dr. Uday Kumar Sukumar Chemical Engineering
12	Design and Development of Disaster Response Dashboard for India	Facebook India online service	Dr. Kalidas Yeturu Computer Science Engineering
13	Towards development of fluorophores of predictable fluorescence: A comprehensive investigation of fluorescence characteristics of fluorescein	Science and Engineering Research Board- SERB	Dr. Arijit Sharma Physics
14	The Analysis and simulation of beam-wave interaction for dual mode dual harmonic gyrotrons with the design of specific modules	Science and Engineering Research Board- SERB	Prof. Machavaram Venkata Kartikeyan Electrical Engineering
15	Machine Learning in Mechanics: Current Status and Future Prospects	Department of Scientific & Industrial Research	Dr. Venkatraman Pandurangan Mechanical Engineering
16	A Virtual AR/VR Museum for Science and Technology Literacy	Department of Science & Technology	Dr. Sridhar Chimalakonda Computer Science Engineering
17	Material and process development for additive manufacturing and post-processing of tools made of modified hot work tool steel (ModAMtool)	Department of Science and Technology	Dr. Mamilla Ravi Sankar Mechanical Engineering

S. No.	Title	Funding Agency	Investigator and Dept.
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## Industrial Consultancies

1	Validation of the ground improvement requirement for the proposed warehouse construction at the proposed container terminal in Kodakarai, Chennai.	Ocean Life Spaces India Private Limited	Prof. A. Murali Krishna Civil and Environmental Engineering
2	Slope stability analysis of the side slopes of Trial Race Channel of Polavaram Hydro Electric Project, Polavaram Irrigation Project, Andhra Pradesh	Mega Engineering and Infrastructures Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
3	Laboratory testing of plastic concrete cylindrical specimen of the diaphragm cut off wall at the SPVB reservoir	Mega Engineering and Infrastructures Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
4	Mix design of DBM2, DAC1 and DAC2 of Arakkonam Airport	NCC Limited	Dr. B. Krishna Prapoorna Civil and Environmental Engineering
5	Development of titanium envelop forging for compressor aero foils	Gas Turbine Research Establishment (GTRE)	Dr. Ajay Kumar Mechanical Engineering
6	Geotechnical investigations of foundations soil along the proposed bund alignment of SS tank at Mangalampaducheruvu, Sullurupeta, Nellore District, Andhra Pradesh	Public Health Department, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
7	Geotechnical investigations of foundations soil along the proposed earthen bund alignment of Summer Storage tank at Juvvalapalem irrigation tank, Naidupeta, Nellore District, Andhra Pradesh	Public Health Department, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
8	Improvement of existing effluent treatment facility at Amara raja Batteries Limited	Amara Raja Batteries Limited	Dr. Shihabudheen M. Maliyekkal Civil and Environmental Engineering
9	Mix Design of PQC of Arakkonam Airport	NCC Limited	Dr. B. Krishna Prapoorna Civil and Environmental Engineering
10	LCA of Rubber Tries and Associated Products	Tinna Rubber and Infrastructure Limited	Dr. B. Krishna Prapoorna Civil and Environmental Engineering
11	Development of value added natural pure organic products for food and wellness sectors	M/s Jama Botanics Private limited	Dr. N. Trivikram Reddy Chemical Engineering
12	Laboratory testing of excavated soil sample to access the suitability of backfilling at Boy's Hostel II & IV and Dining Hall at IIIT Sri City, Andhra Pradesh	IIIT Sri City, Chittoor	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
13	Laboratory testing of disturbed and undisturbed soil samples from three boreholes drilled at the bed of trail race channel of Hydroelectric Project, Polavaram, A. P.	Megha Engineering and Infrastructures Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
14	Vetting the designs and drawings of foundations prepared by Tata Consulting Engineers Ltd., for high transmission lines of different types of towers for Madhya Pradesh Power Transmission Co. Ltd	Tata Consulting Engineers Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering

S. No.	Title	Funding Agency	Investigator and Dept.
15	Laboratory testing of plastic concrete specimens prepared from spoil concrete between chainage 39.9m and 166.5m at downstream cofferdam of Polavaram projects, A. P.	Megha Engineering and Infrastructures Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
16	Proof checking of structural design of Hangar by M/s Karekar & Associate Bengaluru for HAL, Bengaluru	M/s Karekar & Associates	Dr. M. Nithyadharan Civil and Environmental Engineering
17	Testing & Verified Tiles	Aparna Enterprises Ltd	Dr. Behera Prasanna Kumar Civil and Environmental Engineering
18	Geotechnical investigations of foundations soil along the proposed earthen bund alignment of Summer Storage tank at Juvvalapalem irrigation tank, Naidupeta, Nellore District, Andhra Pradesh	Public Health Department, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
19	Geotechnical investigations of foundations soil along the proposed bund alignment of SS tank at Mangalampaducheruvu, Sullurupeta, Nellore District, Andhra Pradesh	Public Health Department, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
20	Investigation on the structural soundness and stability of Government Hospital Mangalagiri	All India Institute of Medical Sciences, Mangalagiri, Andhra Pradesh	Dr. Bijily Balakrishnan Civil and Environmental Engineering
22	Technical Recommendations of the feasibility of the proposed new Ramps in PID building for AIIMS Mangalagiri	All India Institute of Medical Sciences, Mangalagiri, Andhra Pradesh	Dr. Bijily Balakrishnan Civil and Environmental Engineering
23	Laboratory testing of plastic concrete specimens prepared with four different percentages of retarders to evaluate their unconfined compression strength, confined compression strength and permeability at 7 days and 14 days of curing time	Mega Engineering and Infrastructures Limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering

## Recent Faculty Publications

### Journals

#### Chemical Engineering

- [Misra, S.](#), Buttazoni LR., Avadiappan V., Lee H., Yang M., Maravelias C.T., "CProS: A Web Based Application for Chemical Production Scheduling", *Computers & Chemical Engineering*, 164, 107895, 2022.
- Perez, J.M., Sener C., [Misra S.](#), Umana G.E., Coplien C., Haak D., Li Y., Maravelias C.T., Karlen S.D., Ralph J., Donohue T.J., Noguera D.R., "Integrating lignin depolymerization with microbial funneling processes using agronomically relevant feedstocks" *Green Chemistry*. 24(7), 2795-2811, 2022.

#### Civil & Environmental Engineering

- Allabakshi, S.M., P.S. N. S. R. Srikar, [R.K. Gangwar](#), and [S.M. Maliyekkal](#). "Feasibility of surface dielectric barrier discharge in

wastewater treatment: Spectroscopic modeling, diagnostic, and dye mineralization", *Separation and Purification Technology*, vol. 296, 121344, 2022.

- Chauhan, P., Kanagaraj, V. and [Asaithambi, G.](#) "Understanding the Mechanism of Lane Changing Process and Dynamics using Microscopic Traffic Data", *Physica A: Statistical Mechanics and its Applications*, 593, 2022.
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- Gandhi, T.P., [Sampath, P. V.](#), and [Maliyekkal, S.M.](#) "A critical review of uranium contamination in groundwater: Treatment and sludge disposal". *Science of The Total Environment*, Elsevier. vol. 825, 2022, 15394, 2022.

- Jyothi, M.S.V.N., A. Harafan, S.S. Gupta, N. Neethu, G. Singhal, **B.J. Ramaiah**, and **S.M. Maliyekkal**. "Chitosan immobilised granular FeOOH-MnxOy bimetal-oxides nanocomposite for the adsorptive removal of lead from water," *Journal of Environmental Chemical Engineering*, vol. 10, 107353, 2022.
- Kannan, U., S.A. Gafoor, S. Srivastava, S. Gupta, **M. Nityaharan**, and **S.M. Maliyekkal**. "A waste-derived nanocomposite sealant for repairing micro-cracks in concrete", *Journal of Building Engineering*, vol. 48, 103965, 2022.
- Singh, A., **Biligiri, K.P.**, and **Sampath, P.V.** "Development of framework for ranking pervious concrete pavement mixtures: application of multi-criteria decision-making methods", *International Journal of Pavement Engineering*, 1-14, 2022.
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## Computer Science & Engineering

- Priya, Shruti, Shubhankar Bhadra, **Sridhar Chimalakonda**, and Akhila Sri Manasa Venigalla. "ML-Quest: a game for introducing machine learning concepts to K-12 students." *Interactive Learning Environments*, 1-16, 2022.

## Electrical Engineering

- Lakshmi Vineela, V., P. A. Praveen, T. Kanagasekaran, Nitish Kumar C., and **N.V.L. Narasimha Murty**, "Direct X-Ray Detection Using Thin-Film Pentacene Schottky Diodes." *Journal of Instrumentation*, P02024, 17 (2), 2022.
- Ramakrishnan, S., V. Ramaiyan, and **K.P. Naveen**, "Completely Uncoupled Utility Maximization Algorithms for State Dependent Networks," *IEEE Transactions on Wireless Communications*, vol. 21, no. 1, 191 - 202, 2022.
- Reddy, G.N.K., M. S. Manikandan and **N.V.L. Narasimha Murty**, "Evaluation of Objective Distortion Measures for Automatic Quality Assessment of Processed PPG Signals for Real-Time Health Monitoring Devices," *IEEE Access*, vol. 10, 15707-15745, 2022.
- Sannakashappanavar, B.S., Yadav, A.B., Kumar, Vinod Kumar, **N.V.L. Narasimha Murty** and K. Singh, "Low Resistance Ohmic Contact on ZnO Thin Film Revealed by Schottky Barrier Height", *Silicon*, 14, 1531-1536, 2022.
- Sumanth, V., Vaishnavi R., **Rama Krishna Gorthi**, A Multi-task Learning for 2D Phase Unwrapping in Fringe Projection, *IEEE Signal Processing Letters*, Vol. 29, 797 - 801, 2022.
- Sumanth, V., Naveen P., **Rama Krishna Gorthi**, 3D Deformation Measurement in Digital Holographic Interferometry Using A Novel Multitask Deep Learning, *Journal of the Optical Society of America A (JOSA-A)*, vol. 39, no. 1, 167-176, 2022.
- **Vyavahare, P.**, J. Nair and D. Manjunath, "Sponsored Data: On the Effect of ISP Competition on Pricing Dynamics and Content Provider Market Structures," in *IEEE/ACM Transactions on Networking*, 2022.

## Mechanical Engineering

- Kumar, Alok, **P. Muthukumar**, Pratibha Sharma, and **E. Anil Kumar**. Absorption based solid state hydrogen storage system A: review, *Sustainable Energy Technologies and Assessments* 52, 102204, 2022.
- **Rajan, G.K.**, Damping rate measurements and predictions for gravity waves in an air-oil-water system, *Physics of Fluids*, volume 34, 022113, 2022.
- Sarath Babu, K., and **E. Anil Kumar**, Thermodynamic analysis of compressor operated resorption thermo-chemical energy storage system for heat storage, combined cooling and heat upgradation, *Journal of Energy Storage*, 50, 104659, 2022.

## Physics

- Baral, S., S. Saha, Km. A. Dubey, J. Jose, **P.C. Deshmukh**, A.K. Razavi and S.T. Manson, "Unusual behavior of Cooper minima of *ns* subshells in high-Z atoms", *Phys. Rev. A Phys. Rev. A* 105, 062819, 2022.
- **Deshmukh, P.C.**, Subham Ghosh, Uday Kumar, C. Hareesh, and G. Aravind, "A Primer on Path Integrals, Aharonov-Bohm Effect and the Geometric Phase". *The Physics Educator*, Vol. 4, No. 1, 2250005, 2022.
- Harafan, A., **R.K. Gangwar**, and **S.M. Maliyekkal**. "Abatement of Pesticides in Drinking Water by Nanoscale Carbon Materials," *Separation Science and Technology*, Elsevier, vol. 15, 139-161, 2022.
- Shen, B., F. Breitner, D. Prishchenko, **R.S. Manna**, A. Jesche, M.L. Seidler, P. Gegenwart, and A.A. Tsirlin." Pressure-induced dimerization and collapse of antiferromagnetism in the Kitaev material  $\alpha$ -Li<sub>2</sub>IrO<sub>3</sub>." *Physical Review B, American Physical Society*, vol. 105, 2022, 054412, 2022.

## Humanities and Social Sciences

- **Bahinipati, C.S., R.A. Sirohi** and S. Rao. "Technological innovation and behavioural interventions for household energy conservation: policy insights and lessons", *Ecology, Economy and Society - the INSEE Journal*, vol. 5, no. 1, 63-87, 2022.
- **Bahinipati, C.S.** "Do Risk Management Strategies Prevent Economic and Non-Economic Loss and Damages? Evidence from Drought Affected Households in Western India", *Environmental Quality and Management*, vol. 31, no. 3, 59-66, 2022.
- **Kashyap, V.**, N. Nakra, and R. Arora. "Do Decent Work Dimensions lead to Work Engagement? Empirical Evidence from Higher Education Institutions in India", *European Journal of Training and Development*, vol. 46, no. 1/2, 158-177, 2022.
- **Kashyap, V.**, and R. Arora. "Decent Work and Work-family Enrichment: Role of Meaning at Work and Work Engagement", *International Journal of Productivity and Performance Management*, vol. 71, no. 1, 316-336, 2022.
- Tripathi, Priyanka, **P.S. Dwivedi**, Sheo Rama, and Shreya Sharma. "Economic Perspectives on Violence Against Women During Covid - 19 Crisis: A Case Study of Bihar", *Feminist Research*, Vol. 6, No. 1, 14-25, 2022.



- Yadav, Vivek Kumar, Shomik Dasgupta, and **Bharath Kumar**. "B. R. Ambedkar on the Practice of Public Conscience: A Critical Reappraisal", *Journal of Human Values*, SAGE, vol. 28, no. 3, 1-9, 2022.

## Books/Book Chapters

- Allabakshi, S.M., P.S.N.S.R. Srikar; **R.K. Gangwar**, and **S.M. Maliyekkal**. "Application of plasma-assisted advanced oxidation processes for removal of emerging contaminants in water," *New Trends in Emerging Environmental Contaminants*, Springer, 333-370, 2022.
- **Bahinipati, C.S.** and U. Patnaik. "Climate change and human security in India: evidence, opportunities and challenges", In Behera, A. & S. Mishra, 'Varying Dimensions of India's National Security: Emerging Perspectives', Springer, 197-213, 2022.
- Budhkar, A.K., **Asaithambi, G.**, Maurya, A.K., Arkatkar, S.S. "Emerging Traffic Data Collection Practices Under Mixed Traffic Conditions: Challenges and Solutions", *Transportation Research in India*. Springer Transactions in Civil and Environmental Engineering. Springer, Singapore, 2022.
- Harafan, A., S.A. Gafoor, T.D. Kusuma, and **S.M. Maliyekkal**. "Graphene modified photocatalysts for the abatement of emerging contaminants in water", *New Trends in Emerging Environmental Contaminants*, Springer, 371-406, 2022.
- Monachan, M., N. Dixit, **S.M. Maliyekkal**, and S.P. Singh, "Reverse Osmosis (RO) and Nanofiltration (NF) Membranes for Emerging Contaminants (ECs) Removal, *New Trends in Emerging Environmental Contaminants*, Springer, 407-425, 2022.
- **Misra, S.** and Maravelias CT., "Overview of Scheduling Methods for Pharmaceutical Production," *Optimization of Pharmaceutical processes*, Springer, 355-371, 2022.
- Singh, S.P., T. Gupta, A.K. Agarwal, and **S.M. Maliyekkal** (Eds.) *New Trends in Emerging Environmental Contaminants*, Springer, 2022.

## Newspaper Articles

- **Raghuramaraju, A.**, "Cerebral Minds: Reversal as Restatement often Adds Something New," *The Telegraph*, 10-1-2022.
- **Raghuramaraju, A.**, "Inner Voice: Internal Criticism as a moral virtue," *The Telegraph*, 14-2-2022.
- **Raghuramaraju, A.**, "The Relevance of Badarayana: Original Compiler," *The Telegraph*, 14-3-2022.
- **Raghuramaraju, A.**, "Deceptive Dance: The aesthetics of the 'item number'" *The Telegraph*, 11-4-2022
- **Raghuramaraju, A.**, "Diverse Voices: Upanishads' Women and Non-Brahmins," *The Telegraph*, 16-5-2022.
- **Raghuramaraju, A.**, "Fresh Perspective: An Empirical Critique of Development is not enough," *The Telegraph*, 13-6-2022.

## Conferences/Proceedings

### Civil & Environmental Engineering

- S.R. Pasula, Gudem, S.S., Gaddam, S.J., and **Sampath, P.V.**

"Optimizing cropping patterns under the influence of climate change" (No. EGU22-11145). Copernicus Meetings, 2022.

- A.N. Sharma, Gaddam, S.J., and **Sampath, P.V.** "Optimal sowing dates for major crops in India under climate change" (No. EGU22-11068). Copernicus Meetings, 2022.
- T. Pushparaj Gandhi, S. Gomosta, S. Sengupta, and **S.M. Maliyekkal**. "A scalable and affordable method for production of graphene oxide: Application in the removal of aqueous uranium." *Roorkee Water Conclave IIT Roorkee*, March 02-04, 2022.
- M.S.V. Naga Jyothi and **S.M. Maliyekkal**. "Fe-Mn binary oxides granules for mercury removal from water, *First International Conference on Circular Economy for Sustainable Water Management* (SuWaM- 2022), IIT Madras, 23-25<sup>th</sup> March 2022.
- T.P. Gandhi, P.V. Sampath, and **S.M. Maliyekkal**. "A review on remediation of uranium from groundwater using nanoscale materials. *In International Conference on Environmental Science and Engineering*, Environmental Science and Engineering Department, IIT Bombay, January 20-22, 2022.
- U. Kannan and **S.M. Maliyekkal**. "Ag nanoparticles-based point of use disinfection system for personal and household use," *Indo-Canadian Joint Symposium on Water purification, optimization and Management*, IIT Tirupati, India, 17-18 March 2022.
- **S.M. Maliyekkal**. "Nanotechnology enabled water disinfection," *International Conference on Environmental Science and Engineering* (ICESE), IIT Bombay, Jan 21, 2022.
- **S.M. Maliyekkal**. "Sustainable water purification technologies," *An Indo-Canadian Symposium on "Water: Purification, Optimization, and Management*, IIT Tirupati, March 17-18, 2022.
- **S.M. Maliyekkal**. "Sustainable nanoscale materials in construction, repair, and water purification," *Engineers Meet*, Brigade Constructions, Bangalore, March 5, 2022.
- **S.M. Maliyekkal**. "Bio-inspired sealant for healing micro-cracks in concrete," *One day workshop on "Climate Change Impacts on Civil Engineering Applications*, VIT Chennai, Jan 08, 2022.
- A. Singh, **Nithyadharan, M.**, **Sampath, P.V.**, and **Biligiri, K.P.** (2022). Structural Design of the Pervious Concrete Pavements: A Computational Mechanics Approach. In *Proceedings of the Fifth International Conference of Transportation Research Group of India*, Springer, Singapore, 339-350, 2022.
- **S.M. Maliyekkal**. "Sustainable nanoscale materials for purification of water," *National Workshop on "Chemistry in Everyday Life*, Department of Chemistry, School of Advanced Sciences (SAS), VIT-AP University, April 18, 2022.

### Computer Science & Engineering

- Chirayu Anant Haryan, **G. Ramakrishna**, Kishore Kothapalli and Dip Sankar Banerjee, "Shared-Memory Parallel Algorithms for Fully Dynamic Maintenance of 2-Connected Components", International parallel and distributed processing symposium (IPDPS), Fully Online, June 2022.
- Agrahari Vartika, and **Sridhar Chimalakonda**. "A Catalogue of Game-Specific Anti-Patterns." In *15<sup>th</sup> Innovations in Software Engineering Conference (ISEC 2022)*, 1-10. 2022.

- Gupta Nakshatra, Ashutosh Rajput, and **Sridhar Chimalakonda**. "COSPEX: A Program Comprehension Tool for Novice Programmers." In *2022 IEEE/ACM 44<sup>th</sup> International Conference on Software Engineering: Companion Proceedings (ICSE-Companion)*, 41-45, IEEE, 2022.
- Shanbhag Shriram, **Sridhar Chimalakonda**, Vibhu Saujanya Sharma, and Vikrant Kaulgud. "Towards a Catalog of Energy Patterns in Deep Learning Development." In the *International Conference on Evaluation and Assessment in Software Engineering (EASE) 2022*, 150-159. 2022.
- Das Debeshee, Noble Saji Mathews, and **Sridhar Chimalakonda**. "Exploring Security Vulnerabilities in Competitive Programming: An Empirical Study." In *The International Conference on Evaluation and Assessment in Software Engineering (EASE) 2022*, 110-119. 2022.
- Venigalla Akhila Sri Manasa, Kowndinya Boyalakuntla, and **Sridhar Chimalakonda**. "GitQ-Towards Using Badges as Visual Cues for GitHub Projects." In *2022 IEEE/ACM 30<sup>th</sup> International Conference on Program Comprehension (ICPC)*, 157-161. IEEE, 2022.
- Ajay Meena, K. Sarath Babu, and **E. Anil Kumar**. "Suitability of  $\text{LaNi}_{5-x}\text{Co}_x$  ( $x=0, 0.25, 0.5$  and  $0.75$ ) for Low Temperature Thermochemical Energy Storage Application", *International Conference on Renewable Energy (ICRE 2022)*, University of Rajasthan, Jaipur, India, February 25-27, 2022.
- Dinesh Dash Babu, **E. Anil Kumar** and I.P. Jain. "Effect of aluminium substitution for Ni in  $\text{LaNi}_5$  on the performance of a metal hydride-based hydrogen compressor", *International Conference on Renewable Energy (ICRE 2022)*, University of Rajasthan, Jaipur, India, February 25-27, 2022.
- Rakesh Sharma, S. Anil Kumar, and **E. Anil Kumar**. "Comparative Study of Adsorption and Resorption Cooling Systems Using Ammonia-Halide Salts Sorption Pairs", *7<sup>th</sup> National and 1<sup>st</sup> International Conference on Refrigeration and Air Conditioning (NCRAC 2022)*, IIT Guwahati, India, February 24-26, 2022.
- K. Sarath Babu, and **E. Anil Kumar**. "Application of Mischmetal Based Low Pressure Metal Hydrides for Solar Energy Storage", *23<sup>rd</sup> World Hydrogen Energy Conference (WHEC 2022)*, Istanbul, Turkey, June 26-30, 2022.
- Dinesh Dash Babu and **E. Anil Kumar**. "Thermodynamic analysis of a metal hydride-based hydrogen compressor using  $\text{La}_{1-x}\text{Ce}_x\text{Ni}_5$  hydrides", *23<sup>rd</sup> World Hydrogen Energy Conference (WHEC 2022)*, Istanbul, Turkey, June 26-30, 2022.

## Electrical Engineering

- S. Kartheek Bandi and **P. Vooka**, "A new measurement technique to determine the Amplitude and Phase shift of a sinusoidal voltage signal using a charge balanced digitizer," *2022 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)*, 1-6, 2022.

## Mechanical Engineering

- M.S. Bhaskaran and **G.K. Rajan**, Rheological investigation of sea surface films. International Conference on Mathematics and Computing (ICMC) organized by Vellore Institute of Technology, TN, India, 6-8 January 2022.
- M.S. Bhaskaran and **G.K. Rajan**, Interfacial waves in a three-fluid system. Conference on Mathematics of Wave Phenomena organized by Kalshruhe Institute of Technology, Germany, 14-18 February 2022.
- M.R.R, K. Chandrasekaran, **T. Ranganathan** and A. Thondiyath, "Computational Fluid Dynamic Study on the Effect of Winglet Addition in Flapping Hydrofoils to Evaluate the Propulsive Performance of Wave Gliders," *OCEANS 2022 - Chennai*, 1-4, 2022.
- S. Dey, R. Puppala, N. Govindan, **T. Ranganathan** and A. Thondiyath, "Towards Mission-Specific Characterization of the Diving Performance of an Underwater Glider," *OCEANS 2022 - Chennai*, 1-6, 2022.
- S. Panigrahi, V. Ashok, V.K. Pediredla, **T. Ranganathan** and A. Thondiyath, "Mathematical modelling and control of a submersible multi-medium UAV," *OCEANS 2022 - Chennai*, 1-9, 2022.
- K. Sarath Babu, and **E. Anil Kumar**. "A Novel Cascade Resorption System for High Temperature Thermochemical Energy Storage and Large Temperature Lift Heat Upgradation", *International Conference on Renewable Energy (ICRE 2022)*, University of Rajasthan, Jaipur, India, February 25-27, 2022.

## Mathematics and Statistics

- S. Srivastava and **P. Mariappan** presented a paper titled "Hyperbolic Lattice Boltzmann Method and Multiple Relaxation Time Discrete Boltzmann Method for Solid-Liquid Phase Change Problem" in ESCO conference held at Czech Republic (Hybrid Mode) during 13-17 June 2022.
- **D.P. Challa** and D. Gangadaraiah presented a paper titled "Extraction of the mass density by embedding contrasted small inclusions" in IPMS conference held at Malta (Hybrid Mode) during 22-28 May 2022.
- **S.A. Prasad** presented a paper titled "Node Insertion in Coalescence Fractal Interpolation Function" in 7<sup>th</sup> Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals between June 04 and 08, 2022.
- **S.A. Prasad** presented a paper titled "Node Insertion in Coalescence Hidden-Variable Fractal Interpolation Surface" in ICFG 2022: 16. International Conference on Fractal Geometry held virtually during June 23-24, 2022.
- Koushik Biswas, Sandeep Kumar, **Shilpak Banerjee**, Ashish Kumar Pandey; "Smooth Maximum Unit: Smooth Activation Function for Deep Networks Using Smoothing Maximum Technique"; Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 794-803, June 2022.

## Humanities and Social Sciences

- **A. Raghuramaraju**, "Telugu Literature in the post-independent Era," Valedictory Address online in two days webinar, University of Hyderabad, 6-7 January 2022.

- **A. Raghuramaraju**, "Understanding Gandhi by Dharampal: Gandhi's Historical Contribution and Contemporary Relevance," online seminar, Gandhi Research Foundation, Wardha and Indus University, 22-1-2022.
- **A. Raghuramaraju**, "Calibrating Western Philosophy for India," online Research Methodology Workshop, NALSAR University of Law, 4-13 March 2022.
- N. Nakra, and **V. Kashyap**. "Sustainable Human Resource Management: A Multilevel Integrative Review." Presented at 7<sup>th</sup> Biennial Conference of Indian Academy of Management on "Triple Bottom Line: Developing Business Resilience, Ecological Sustainability and Social Well-being in Post- Pandemic World", Indian Institute of Management, Rohtak, 7-9 January 2022.
- N. Nakra, and **V. Kashyap**. "Linking Sustainable HRM and Employee Well-Being: Understanding the Role of Career sustainability: Presented at Annual conference of University Forum of HRD on "Mind the Gap- Bridging Theory and Practice in the Post Covid-19 Era", Sheffield Business School, Sheffield 8-10 June, 2022.
- **C.S. Bahinipati**, P.K. Viswanathan, and A. Singh, "*Institutions, Incentives and Information: Adoption of Farm-level adaptation measures in India*", Presented at 3<sup>rd</sup> Ostrom Retreat titled as "Resilient Community Irrigation Management in Context of Climate Change and multifunctional Rural-Urban Water Use competition in Asia.", at Asian Institute of Technology, Bangkok, Thailand, June 24-27, 2022.
- D. Biswal, and **C.S. Bahinipati**, "*Climate Risk Management through Crop-Insurance in India*", Presented at 3<sup>rd</sup> Ostrom Retreat titled as "Resilient Community Irrigation Management in Context of Climate Change and multifunctional Rural-Urban Water Use competition in Asia.", at Asian Institute of Technology, Bangkok, Thailand, June 24-27, 2022.
- A.K. Singh, and **P.S. Dwivedi**, "Censoring of Women's Cultural Space during the Indian National Movement- A Linguistic Perspective", presented online at the conference titled "Women Encountering Emancipation and Adversity in the 20<sup>th</sup> Century", at University of Chichester, Humanities Department, March 14, 2022.
- P. K. Verma, and **P. S. Dwivedi**. "Revisiting the Eco-Spiritual Wisdoms of the Rāmāyana: An Aesthetical Exploration", Inaugural Conference on "Evolution of Spirituality" organised by Harvard Divinity School, Cambridge, MA, USA, on 27-30 April 2022.
- I. Hagen, S. Allen, **C.S. Bahinipati**, H. Frey, C. Huggel, V. Karabaczek, S. Kienberger, R. Mechler, L. Menk and T. Schinko, (2022), "An international perspective on comprehensive climate risk management: experiences from Peru, India and Austria", will be presented at EGU 2022 Conference, Vienna, Austria, May 23-27.
- **C.S. Bahinipati**, and A.K. Gupta, "Methodological Challenges in Assessing Losses and Damages from Climate Extremes in India" presented at the International Conference on "Tackling Climate Change through Urban Resilience: Role of Institutions and Public Policies in Canada and India", Indian Institute of Technology Tirupati, India, March 24, 2022.
- **C.S. Bahinipati**, "Impact of COVID 19 on Urban Street Vendors in India: Evidence from Bhubaneswar" presented at the national conference on "Many Facets of Covid-19 Pandemic", Council for Social Development, Hyderabad, March 1-2, 2022.
- **C.S. Bahinipati**. "COVID-19, Migration and Social Distancing: Reflections from Behavioural Economics", Presented at International Workshop on 'Public Policies for the Post-Pandemic Era', IIT Tirupati, February 24-25, 2022.
- **C.S. Bahinipati**, "Do formal coping mechanisms mitigate non-economic losses and damages from climate change? Empirical evidence from drought affected households in western India", Presented at National Seminar on 'Global Biodiversity and Sustainable Development', Periyar University, Salem, February 23-24, 2022.
- **C.S. Bahinipati** and **R.A. Sirohi**, "Choosing Energy-efficient Home Appliances in Urban India: Effects of Income and Environmental Externalities", Presented at International Conference on Contemporary Issues in Economics (ICCIE 2022), XIM University, Bhubaneswar, February 4-7, 2022.
- M. Singh and **C.S. Bahinipati**, "The Socio-economic, Women's Education and Autonomy and Neighbourhood Affecting Appliance Ownership in India: Evidence from Indian Human Development Survey", Presented at International Conference on Contemporary Issues in Economics (ICCIE 2022), XIM University, Bhubaneswar, February 4-7, 2022.
- D. Biswal and **C.S. Bahinipati**, "Crop-insurance, Adoption and Heterogeneous Impact: Evidence from India" Presented at International Conference on Contemporary Issues in Economics (ICCIE 2022), XIM University, Bhubaneswar, February 4-7, 2022.
- **R.A. Sirohi** and S.S. Gupta, "Latin American Development Thought in a Comparative Perspective", Presented at Conference of the Latin American Society for the History of Economic Thought (ALAHPE), Universidad de la República, Uruguay (online), April 20-22, 2022.
- N. Sekhar and **R.A. Sirohi**, "The Revolution Will Not Be Colour Blind: The Enduring Relevance of Anti-Apartheid Voices", Presented at Conference of the 72<sup>nd</sup> Political Studies Association Conference, University of York, United Kingdom (online), April 11-13, 2022.

## Physics

- C. Rasadi Munasinghe, **P.C. Deshmukh**, and S.T. Manson 'Photoionization Branching Ratios of Spin-Orbit Doublets in Rn Far Above Thresholds' at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP) Orlando, Florida, USA, May 30 – June 3, 2022.
- Aarthi Ganesan, Sourav Banerjee, Ankur Mandal, **P.C. Deshmukh**, S.T. Manson, 'Photoionization time delay of Hg 6s subshell at higher energies: RMCTD calculations', at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), Orlando, Florida, USA, May 30 – June 3, 2022,
- Rezvan Hussaini, **P.C. Deshmukh**, and S.T. Manson, 'Angular Dependence of the Transition from Dipole to Quadrupole

Photoionization Time Delay in Atoms' at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP) Orlando, Florida, USA, May 30 – June 3, 2022.

- Soumyashree Baral, Jobin Jose, **P.C. Deshmukh**, and S.T. Manson, '6p Cooper minima in the photoionization in high-Z atoms', at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), Orlando, Florida, USA, May 30 – June 3, 2022.
- Pratiksha Parajuli, **P.C. Deshmukh**, and S.T. Manson, 'Nondipole Time Delay in the Photoionization of Atomic Systems', at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP) May 30 – June 3, 2022, Orlando, Florida, USA:
- Nishita M. Hosea, Jobin Jose, Hari Varma, **P.C. Deshmukh**, S.T. Manson, 'Photoionization dynamics of Na 3s in the Cooper minimum region', at the 53<sup>rd</sup> Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP) May 30 – June 3, 2022, Orlando, Florida, USA
- S. R. Valluri, Jisrawi Najeh, **P.C. Deshmukh**, Prabhat Reddy, and Sibibalan, 'Solar Cells\_and the Lambert W Function', presented at the Canadian Association of Physics (CAP) Congress, McMaster University, Hamilton, Canada, June 5-10, 2022.
- Jisrawi Najeh, Valluri, S. R., **P.C. Deshmukh**, Shreyas Suresh, J. Jeysitharam 'Metamaterials and the Lambert W function', presented at the Canadian Association of Physics (CAP) Congress, McMaster University, Hamilton, Canada, June 5-10, 2022.

## Awards/Achievements

- **S.A. Prasad** received the best presentation award by ICFG-2022 at XVI International Conference on Fractal Geometry during June 23-24, 2022.
- **C.S. Bahinipati**, Elected as Member, Executive Committee, Indian Society for Ecological Economics (INSEE).
- **S.M. Maliyekkal**, The article titled "A comprehensive review on antimicrobial face masks: an emerging weapon in fighting pandemics" has been included in the *RSC Advances* 10th Anniversary collection focusing on *Chemistry in the battle against infections*.
- **S.M. Maliyekkal**, The project titled "Bio-derived sealant (*Eco-Nanoseal*) for the repair of micro-cracks in concrete" has been selected for the IIT R&D fair. This is one of the six projects selected from 23 IITs under the theme "Cities & Infrastructure (including smart mobility)."
- **S.M. Maliyekkal**, The project titled "Capacitive Deionization (CDI) for clean drinking water" has been selected for the IIT R&D fair. This is one of the five projects selected from 23 IITs under the theme "Environment and Sustainability (including air, water, rivers)."
- **S.M. Maliyekkal**, Awarded Indian patent titled "A method for the preparation of Immobilized graphene-based composite from asphalt," Patent Grant No.: 393415; dated March 29, 2022.
- **R. Thiyagarajan**, Awarded patent jointly with T. Ranganathan and A. Thondiyath, on "Controllable variable buoyancy system based on actuated flexible members or structures and their uses for precise positioning and manipulation underwater", Patent Grant No.: 399832, dated June 23, 2022.

## Events and Activities

### 73<sup>rd</sup> Republic Day Celebrations at IIT Tirupati

IIT Tirupati celebrated 73<sup>rd</sup> Republic Day on January 26, 2022. The programme started with the unfurling of the tricolour on the temporary campus by the Registrar, followed by unfurling of the tricolour by the Director, K. N. Satyanarayana, on the permanent campus at Yerpedu. The Director gave a speech on the occasion highlighting the significance of the day and asking students to unite in the pledge for the success and development of the country. The event was carried out with essential staff following all covid precaution and live telecasts and recordings were made available for all other staff and students.

### Rights Awareness Programme for Construction Workers-Azadi Week:

IIT Tirupati, in association with IISER Tirupati and the Central Construction Workers Advisory Council, organized an



awareness programme for the construction workers on March 11, 2022 on the permanent campus. It was organised as a part of the iconic week - Azadi ka Amrit Mahotsav (March 7-13, 2022). During the event, Mr. Srinivasa Naidu, Chairperson of the Central Construction Workers Advisory

Council, explained about the E-Shram portal and the workers' rights. Following this, the Director of IIT Tirupati briefed about

different welfare schemes and facilities provided to the construction workers at IIT Tirupati.



## SPIC MACAY

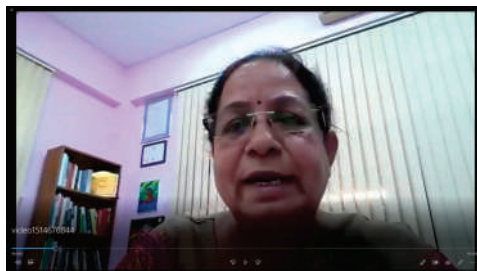
- SPIC MACAY Heritage club organized a Virtual Flute Concert by Pandit Ronu Majumdar accompanied by Shri Ajeet Pathak on Tabla on February 11, 2022, as the sixth virtual treat.
- A Cheryl Painting Workshop, under the guidance of Shri Dhanlakota Saikiran, was organised on April 30 - May 1, 2022 at the Institute.

- The club conducted an in-person concert on May 28, 2022. The students and faculty, along with their family members, enjoyed an enchanting Carnatic Music recital by Sri Sikkil Gurucharan accompanied by Padma Vibhushan Awardee, Sangita Kalanidhi, Kalaimamani Dr. Umayalapuram K. Sivaraman on Mridangam, Sri V. Sanjeev on Violin and Sri B. Shree Sundarkumar on Kanjira.



## MEDHA Women's Day Celebration

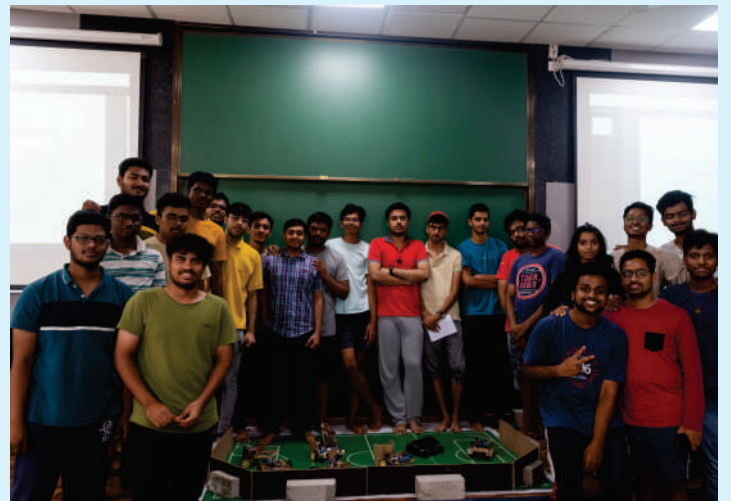
To commemorate International Women's Day (March 8), MEDHA had a fun and learning event planned on March 11, 2022. Prof. Archana Shukla, Director of IIM Lucknow, delivered a lecture on "Unlocking your Potential".



## Tirutsava-2022

Tirutsava is the annual festival of IIT Tirupati which is organised and managed by students of the Institute. This year, it was conducted on 15<sup>th</sup>-17<sup>th</sup> April. Tirutsava-2022 was conducted in three phases— The Inception, The Avenue and The Conclusion. This year, the famous singer Sreerama Chandra performed for the pro-show on the second day. This breathtaking performance was followed by performances by DJ Ashtrix and DJ Esha on the last day of the event. In addition to these pro-shows, event teams conducted various events like Funky Feet (Dance competitions), Espresso (Solo singing competition), KBC, various ideathons, Cricket-o-ania,

Treasure Hunt, Capture the Flag, Enigma and squid games, to mention a few. The fest saw a footfall of around 10,000 people ranging from college students to working professionals.



Editors

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