

A Biannual Newsletter of IIT Tirupati Samvid

Volume 4 | Issue 2 | July 2021



Hon'ble Vice President of India graces the 6th Institute Day

The sixth Institute Day of IIT Tirupati was celebrated on its Permanent Campus on March 4, 2021. The occasion was graced by the esteemed presence of the Hon'ble Vice President of India, Shri M. Venkaiah Naidu, as the chief guest of the event. The event formally began with the welcome address by Prof. K.N. Satyanarayana, Director, IIT Tirupati, followed by the speech of the Hon'ble Vice President. The students gave excellent cultural performances on the occasion. The Hon'ble Vice President awarded medals to the toppers of the various branches, and distributed prizes to the winners of various events held during the academic year 2019-20. The vote of thanks was proposed by Prof. N. Venkaiah, Dean of Student Affairs, IIT Tirupati.

IIT Tirupati Celebrates 75 years of India's Independence

"Azadi Ka Amrit Mahotsav"

'Azadi Ka Amrit Mahotsav' is an initiative of the Government of India to celebrate and commemorate 75 years of Independence of progressive India and the glorious history of its people, culture and achievements. The Prime Minister, Shri Narendra Modi inaugurated the 'Azadi Ka Amrit Mahotsav' from Sabarmati Ashram, Ahmedabad on March 12, 2021. The celebrations started 75 weeks before our 75th anniversary of Independence and will end on August 15, 2022.

In line with the same, IIT Tirupati began the celebrations of commemoration of 75 Years of India's Independence on March 19, 2021. Dr. Ajay Kumar, Cultural Advisor delivered the welcome speech and released the 75-Week program. The inaugural address was delivered by Prof. K.N. Satyanarayana, Director of the Institute. Prof. A. Raghuramaraju, Department of

Humanities and Social Sciences, delivered a talk on 'The uniqueness of Indian Freedom Movement'. The occasion highlighted the glimpse of the glory of Sanatan Bharat and also the glow of modern India and provided the IIT Tirupati community an insight into the spirit of freedom struggle. The festival also emphasized the need to honour and take the stories of lesser-known freedom fighters to people.

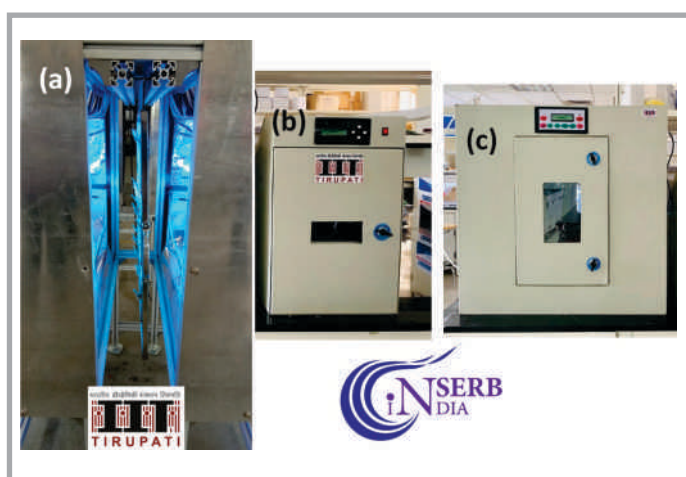


- Commemoration of 75 years of India's Independence (Bharat Ka Amrut Mahotsav)
- 12th March 2021

IIT Tirupati hosts the Inauguration of Andhra Pradesh Higher Education Planning Board

IIT Tirupati hosted the inauguration ceremony of Andhra Pradesh Higher Education Planning Board (APHEPB) along with Andhra Pradesh State Council of Higher Education (APSCHE) on February 27, 2021. The occasion was graced with the presence of Dr. Audimulapu Suresh, Minister of Education, Andhra Pradesh as chief guest, and Shri Satish Chandra, IAS, Special Chief Secretary of Government of Andhra Pradesh, Higher Education Department. The event was presided over by Prof. K. Hemachandra Reddy, Chairman, APSCHE and APHEPB.

IIT Tirupati jointly developed a Portable Optical Cavity Sterilization Unit



IIT Tirupati along with IISER Tirupati developed a Portable Optical Cavity Sterilization Unit (POSCU) to provide efficient and rapid decontamination of personal protective equipment (PPE) and other household items. A working point-of-use sterilization unit has been developed with the support of Science and Engineering Research Board (SERB), a statutory body under the Department of Science and Technology (DST). The team comprising Dr. Reetesh Kumar Gangwar, Dr. Shihabudheen M M, Dr. Arijit Sharma from IIT Tirupati and Dr. Vasudharani Devanathan from IISER Tirupati has developed a portable sterilisation unit using a new technology called the hybrid sterilization system that can decontaminate personal protective equipment (PPE) necessary for combating COVID 19, easily and rapidly, allowing them to be used multiple times. It can be used by health professionals and other COVID warriors for whom PPEs are essential and can prevent generation of hazardous solid waste from PPEs.

IIT Tirupati develops COVID-EMR App for SVIMS Hospital

IIT Tirupati, in consultation with SVIMS Hospital Tirupati, developed a COVID-EMR app to help Doctors note the list of admitted patients and their conditions including O2 level, BP, PR, and comorbidities to keep track of the record. The App was developed by the Institute's B.Tech students Mr. Sourabh Kumar and Mr. Surya Siriki, with the guidance of Dr. Panchatcharam Mariappan.

Donation of Oxygen Concentrators received from IIT Delhi Excellence Foundation Inc.

IIT Tirupati medical center received four oxygen concentrators to strengthen our efforts in fighting COVID19. The donation of these concentrators was facilitated by IIT Delhi Excellence Foundation Inc.. We gratefully acknowledge the generous support of the donors, IIT Delhi and the IIT Delhi Excellence Foundation Inc. for this gesture.



MoUs Signed by IIT Tirupati

Petroleum Conservation Research Association (PCRA)

An MoU was signed between IIT Tirupati and Petroleum Conservation Research Association (PCRA), a registered society under the aegis of Ministry of Petroleum & Natural Gas, Govt. of India to develop an Encapsulated Asphalt-Rubber PAVement (EARPAVE) mixture and establish specifications vital for producing an enduring asphalt mixture suitable as maintenance strategy for pothole patching, new pavement construction, with unconventional surface layers such as gap-graded structural layer and open-graded friction surface course systems. The MoU was signed on May 12, 2021 and the PROJECT assigned has a completion period of 24 months.

National Highways Authority of India (NHAI)

IIT Tirupati entered into an MoU with NHAI in January 2021, to build a long-term strategic partnership. The objective of the agreement is to provide better inputs and research for highway infrastructure. NHAI shall facilitate the faculty,

researchers, and students of IIT Tirupati to familiarise themselves with the latest industry trends and hence be able to bridge the industry-institution gap, while the results from this research and its application exercise could be suitably adopted by NHAI to enhance its efficiency. NHAI shall also offer internships and hence extend stipend to 20 undergraduate and postgraduate students from IIT Tirupati working in select streams.

Andhra Pradesh Police

IIT Tirupati signed an MoU with Andhra Pradesh Police, Mangalagiri on January 4, 2021, to set up a centre for technology development at IIT Tirupati for Public Safety and Security. The agreement aims to promote research in the fields of AI and Big Data for applications such as predictive policing, sharing knowledge and cooperating in the field of Cyber Crime, Cyber Security and Forensics. Another significant aspect of this MoU will be capacity building among police personnel by conducting training sessions on latest technologies.

Invited and Special Lectures/Talks held at IIT Tirupati

- Prof. Subir Kumar Saha, Department of Mechanical Engineering, IIT Delhi, "MuDRA: Connecting Engineering Minds with Society" on April 21, 2021.
- Professor C.V.R. Murty, Civil Engineering IIT Madras, and former Director, IIT Jodhpur, "Road Map of the Life of an Academic" on March 30, 2021.
- Prof. Arvind Sharma, Birks Professor of Comparative Religion, McGill University, Montreal, Canada, "Some Intellectual Consequences of British Rule Over India" on April 16, 2021.
- Bishal Bharadwaj (PhD Candidate, School of Chemical Engineering, The University of Queensland, Australia), "Tackling plastic pollution in South Asia: Lesson from Nepal" on April 20, 2021.
- Dr. Maria Bach, Assistant Professor, Fellow of the Teaching and Learning Center, American University of Paris, France, "Relocating Development Economics: How Indian Economics redefined development from and at the margins, 1870-1905" on April 29, 2021.

- Dr. Rijo M. John, Adjunct Professor, Rajagiri College of Social Sciences, Kochi, Kerala, India, "The story of Covid-19 in India: a pandemic of mismanagement and misinformation" on May 7, 2021.
- Dr. Ram Fishman, Assistant Professor of Public Policy, Tel Aviv University, Israel, "Irrigation and the Spatial Pattern of Structural Transformation in India" on May 14, 2021.
- Dr. Hernan Bejarano, Assistant Professor at the Center for Economic Research and Teaching (CIDE), Mexico, "Experimental economics: history, concepts, taxonomy, and current applications" on June 11, 2021 (Friday) at 7PM
- Dr. Bejoy K Thomas, Associate Professor, Department of Humanities and Social Sciences, IISER, Pune, "From growth to de-growth: the normative challenge in development" on June 18, 2021.
- Dr. Laura Bakkensen, Associate Professor at the University of Arizona's School of Government and Public Policy, "Climate Shocks, Cyclones, and Economic Growth: Bridging the Micro-Macro Gap" on June 30, 2021.
- Dr. Patrick S. Ward, Assistant Professor of Environmental Economics and Policy, Duke Kunshan University, Kunshan, China, "Confidence and information usage: Evidence from soil testing in India" on March 26, 2021.
- Dr. Prasenjit Banerjee, Lecturer in Environmental Economics, The University of Manchester, "Politicians, Promises and Citizen Welfare: Evidence from a Lab-in-the-Field Experiment in India", on February 9, 2021.
- Dr. Shiva Sikdar, Senior Lecturer in Economics, Keele University, UK, "Multimarket Collusion and Trade: Environmental and Welfare Implications" on February 19, 2021.
- Dr. Deepak Malghan, Associate Professor, Indian Institute of Management Bangalore (IIMB), "Citius, Altius, Fortius: A History of How the World Became Efficient", on February 23, 2021.
- Dr. Anjal Prakash, Research Director and Adjunct Associate Professor, Bharti Institute of Public Policy, Indian School of Business, Hyderabad, "Is climate change real for India?" on February 27, 2021.

Conferences, Workshops, Symposiums Organized by IIT Faculty

Workshop on Last-mile Challenges

Dr. K. P. Naveen (IIT Tirupati) and Dr. Ashwin Ashok (Georgia State University) organized a workshop on "Last-mile Challenges and Standardization Opportunities in Smart Infrastructure (LastMileS '21)," held in conjunction with the 13th International Conference on Communication Systems & Networks (COMSNETS '21), January 05, 2021.

International Webinar on Advances in Materials Processing and Mechanical Testing (AMPMT)

International Webinar
1st - 2nd Feb 2021

Speakers

Advances in Materials Processing and Mechanical Testing
Department of Mechanical Engineering, IIT Tirupati

Patron Chairman

Organizing Committee

Sponsors

Department of Mechanical Engineering organised an international webinar during February 1-2, 2021 on the topic "Advances in Materials Processing and Mechanical Testing." Renowned speakers from international institutions participated and delivered talks in the webinar.

International Workshop on Climate Change in India

An international conference on "Methodological Challenges in Assessing the Socio-economic Losses and Damages from Climate Change in India" was jointly organised by Indian Institute of Technology Tirupati, Organisation for Economic Co-operation and Development (OECD), and National Institute of Disaster Management (NIDM), on May 25, 2021.

International Conference on Resource Sustainability

IIT Tirupati hosted an International Conference on "Sustainable Pavement Technologies (icRS SPT 2021)", sponsored by the international Resource Sustainability group during May 26-27, 2021. Prof. Krishna Prapoorna, Dept. of Civil and Environmental Engineering, served as the Chairman of the conference.

Faculty and Staff News

New Faculty Entrants

Sl. No.	Name	Department	PhD	Previous Employment
1	Dr. Abhishek Kumar Jha	Electrical Engineering	Indian Institute of Technology Kanpur	Postdoctoral Researcher at Monash University, Australia
2	Dr. Srujana Kagita	Electrical Engineering	Indian Institute of Technology Delhi	Postdoctoral Researcher at King Abdullah University of Science and Technology (KAUST), Saudi Arabia.
3.	Dr. Mitikiri Yujendra	Mechanical Engineering	University of Florida, Gainesville	Assistant Professor, Centre for Advanced Studies, Dr. A.P.J. Abdul Kalam Technical University Lucknow

New Staff Entrants

Sl. No.	Name	Designation	Department
1	Mr K Kishore Kumar	Staff Nurse	Health Centre
2	Mr A K SURESH	Junior Technical Superintendent	Chemical Engineering

Sponsored Research Projects

S. No.	Title	Funding Agency	Investigator and Dept.
1	PM FME CIC	Andhra Pradesh Food Processing Society	Prof. KSMS Raghavarao Department of Chemical Engineering
2	Development of organocatalytic heterogeneous catalysis and applications towards the synthesis of templates mimicking bioactive compounds	Department of Science and Technology	Dr. Kumar Swamy Reddy N. Department of Chemistry
3	Fluctuations in Single-molecule Biophysical Processes: Dynamics and Energetics	Department of Science and Technology	Dr. Somrita Ray Department of Chemistry
4	Accelerated carbonation of municipal solid waste and industrial by-products for CO2 sequestration-scope for climate change mitigation	Department of Science and Technology	Dr. Thriveni Thenepalli Department of Chemistry
5	Geosynthetic Reinforced Soil Walls and Abutments for High Speed Railway System	HSR Innovation Centre Trust	Dr. Murali Krishna A. Department of Civil and Environmental Engineering
6	Development of Encapsulated Asphalt-Rubber PAVement (EARPAVE) Product for Road Applications	Petroleum Conservation Research Association, Government of India	Krishna Prapoorna Department of Civil and Environmental Engineering
7	Control theoretic framework for auto-scaling and load-balancing computing nodes hosting distributed algorithms for robot-vision applications	Science and Engineering Research Board- SERB	Dr. P. S. Sai Krishna Department of Electrical Engineering
8	Understanding and addressing systemic risks behind the socio-economic impacts of Covid-19 in India and Japan: Developing a roadmap for a resilient and sustainable future.	Indian Institute of Social Science Research-ISSR	Dr. Chandra Sekhar Bahinipati Department of Humanities and Social Sciences
9	Computational Homogenization and Optimization of Auxetic Chiral Structures for Impact Applications	Science and Engineering Research Board- SERB	Dr. Venkataraman Pandurangan Department of Mechanical Engineering
10	Smart manufacturing platform for hybrid tandem wire arc additive manufacturing process	Science and Engineering Research Board- SERB	Dr. D. V. Kiran Department of Mechanical Engineering

Industrial Consultancies

S. No.	Title	Funding Agency	Investigator and Dept.
1.	Process consultancy services for medical oxygen plants	Tata Advanced Systems Limited	Dr Sasidhar Gumma Department of Chemical Engineering
2.	Environmental Quality within vicinity of 3 Km of M/s. Sri Kalahasthi Pipes Ltd., Rachagunneri (V), Sri Kalahasthi (M), Chittoor District, AP	Sri Kalahasthi Pipes Limited	Prof Suresh Jain Department of Civil and Environmental Engineering
3.	Lead emission study during manufacturing of lead acid batteries at four plants ARGC Chittoor AP	Amara Raja Batteries Limited	Prof Suresh Jain Department of Civil and Environmental Engineering
4.	Study on lead emissions during the manufacturing of lead acid batteries at ARBL, Karakambadi, Tirupati	Amara Raja Batteries Limited	Prof Suresh Jain Department of Civil and Environmental Engineering
5.	Design and Development of a super capacitor working model based on graphene-based material	Go leaf	Dr Shihabudheen M Maliyekkal Department of Civil and Environmental Engineering
6.	Laboratory testing of undisturbed soil samples from High-speed rail project-package C4 from vapi to vadodara, Gujrat	L&T Geostructure Private Limited	Dr Janaki Ramaiah Department of Civil and Environmental Engineering
7.	Geotechnical Investigations of the construction of pump house at SSG Canal and for th in-situ soil at SS Tank and for the borrow soil near Karnamgunta MI Tank	Rural water supply and sanitation, Govt of Andhra Pradesh	Dr B Janaki Ramaiah Department of Civil and Environmental Engineering
8.	Perupadi reservoir of phase I, Package 1-Stability analysis	Water Resource Department, PIPLMC Division, AP	Dr Janaki Ramaiah Department of Civil and Environmental Engineering
9.	Stability analysis of right side slopes of spill channel of the polavaram irrigation project, AP	Megha Engineering and Infrastructures Limited	Dr Janaki Ramaiah Department of Civil and Environmental Engineering
10.	Approval of proposed retrofitting strategy in bridge pier at Garuda Varathi Smart corridor project	AFCONS Infrastructure Limited	Dr. Romanbabu Oinam Department of Civil and Environmental Engineering
11.	Proof checking of the proposed stool base and the method of statement for lowering the bridge girder span at Garuda Varathi smart corridor project	AFCONS Infrastructure Limited	Dr. Romanbabu Oinam Department of Civil and Environmental Engineering
12.	Windload certification and vetting of structural design and drawing of pre-engineered buildings for M/S Tidal trading Pvt Ltd at Paradip, Odisha	Interarch Building Products Pvt Ltd	Dr. Romanbabu Oinam Department of Civil and Environmental Engineering
13.	Vetting of Structural design and drawing of multilevel parking with multiplex in tirupati under the implementation of smart city mission	Live Architecture and Designs	Dr. Romanbabu Oinam Department of Civil and Environmental Engineering
14.	Proof checking of structural design and drawing of ground supported staging (GSS) for casting portal frame between piers in Garuda varathi project, Tirupati.	AFCONS Infrastructure Limited	Dr. M Nithyadharan Department of Civil and Environmental Engineering
15.	Testing of rebars (Tensile Test) of 25mm, 32 mm dia	Megha Engineering and Infrastructures Limited	Dr Nithyadharan M Department of Civil and Environmental Engineering
16.	A software platform for explainability driven anomaly detection	Toshiba Software India Pvt Ltd (TSIP)	Dr Kalidas Yeturu Department of Computer Science and Engineering
17.	A synthesis of the challenges and opportunities faced by India in accessing socio economic impacts from climate change	Organisation for Economic Co-operation and Development	Dr Chandra Sekhar Bahinipati Department of Humanities and Social Sciences

Recent Faculty Publications

Journals

Civil & Environmental Engineering

- Chockalingam, S.N., Pandurangan, V. and Nithyadharan, M. "Timoshenko Beam Formulation for In-Plane Behaviour of Tapered Monosymmetric I-Beams: Analytical Solution and Exact Stiffness Matrix", *Thin-walled Structures*, Volume 162, 2021, pp. 107604.
- Nithyadharan, M. and Kalyanaraman, V. "A New Screw Connection Model and FEA of CFS Shear Wall Panels", *Journal of Constructional Steel Research*, Volume 176, 2021, pp. 106430.
- Surya Kant Sahdeo, Anush K. Chandrappa, and Krishna Prapoorna Biligiri, "Effects of Compaction Types and Efforts on Properties of Pervious Concrete", *Transportation in Developing Economies, A Journal of the Transportation Research Group of India (TRG)*, Springer Nature, USA, (2021) 7:19, June 2021, pp. 1-9.
- Radhika B., Sriram Sundar, and Krishna Prapoorna Biligiri, "Analysis of Vibro-Acoustic Path for Quantification of Tire-Pavement Interaction Noise using a Two-wheeler", *Journal of Testing and Evaluation*, ASTM International, USA, 50, May 2021.
- Naga Siva Pavani Peraka, Krishna Prapoorna Biligiri, and Kalidindi N. Satyanarayana, "Development of a Multi-Distress Detection System for Asphalt Pavements: A Transfer-Learning Based Approach", *Journal of the Transportation Research Record*, Transportation Research Board 2021, Sage, USA, pp. 1-16.
- Vinay H. Nanjegowda, Rituraj Patel, Jagadeesh Mahimaluru, and Krishna Prapoorna Biligiri, "Synthesis and Characterization of Zeolite-like Additive: An Eco-Efficient Asphalt Mix Production Strategy", *Construction and Building Materials*, Elsevier, UK, Vol.266 (A), January 2021, pp. 120898.

Computer Science & Engineering

- Konda Reddy Mopuri "Effectiveness of Arbitrary Transfer Sets for Data-free Knowledge Distillation", *Proceedings of IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2021, Virtual, January 5-9, 2021, pp. 1430-1438.
- Sridhar Chimalakonda, Dan Hyung Lee. "A Family of Standards for Software and Systems Product Lines" *Computer Standards & Interfaces*, vol. 78, no. Online, 2021, pp. 103537.
- Akhila Sri Manasa Venigalla, Sridhar Chimalakonda. "On the Comprehension of Application Programming Interface Usability in Game Engines" *Journal of Software: Practice and Experience*, vol. 51, no. 8, 2021, pp. 1728-1744.
- Marimuthu C, Chandrasekaran K, Sridhar Chimalakonda. "Energy Diagnosis of Android Applications: A Thematic Taxonomy and Survey", *ACM Computing Surveys*, vol. 53, no. 6, 2021, pp. 691-710.

- Sridhar Chimalakonda, Kesav V. Nori. "A Patterns Based Approach for the Design of Educational Technologies", *Interactive Learning Environments*, 2021, pp. 1875000.
- Marimuthu C, Sridhar Chimalakonda, Chandrasekaran K. "How Do Open Source App Developers Perceive API Changes Related to Android Battery Optimization? An Empirical Study", *Journal of Software: Practice and Experience*, vol. 51, no. 4, 2021, pp. 691-710.

Electrical Engineering

- G. Smpokos, Z. Chen, P Mohapatra, N. Pappas, "Performance Analysis of a Cache-Aided Wireless Heterogeneous Network with Secrecy Constraints," *IEEE Access*, vol. 9, March 2021, pp. 52442--52454.
- K. P. Naveen and R. Sundaresan, "Double-Auction Mechanisms for Resource Trading Markets," *IEEE/ACM Transactions on Networking*, vol. 29, no. 3, June 2021, pp. 1210 – 1223.
- Gillani, I.A., Vyavahare, P., Bagchi, A., "Lower Bounds for In-Network Computation of Arbitrary Functions", *Distributed Computing*, Vol 34, no. 3, 2021, pp.181-193.
- Ramakrishna Sai Gorthi, Pallavi Venugopal Minimol, Deepak Mishra. "Guided MDNet Tracker with Guided Samples", *The Visual Computer*, vol. 69, no. 1, 2021, pp. 1432-2315.
- Prashanth Vooka, Noby George, A Sai Kartheek Bandi, Gopalakrishna S. "A Novel Dual Slope Conversion Technique for Measurement of Ratio and Phase Errors of Current Transformer Using Comparison Method of Testing", *Measurement*, vol. 179, 2021, pp. 1-9.

Mechanical Engineering

- Tinku Kumar, Degala Venkata Kiran, Navneet Arora, "Sheet Metal Joining and Distortion Measurement of Aluminium Alloy and Steel in Cold Wire GTAW process", *Materials Today: Proceedings*, 2021.
- M. M. Avulapati, R Pos, T Megaritis, L Ganippa, "Insights into Near Nozzle Spray Evolution, Ignition and Air/Flame Entrainment in High Pressure Spray Flames", *Fuel*, Vol 293, 2021.
- Vinod Kumar Sharma, A. Sateesh, E. Anil Kumar, "Performance Investigation of a Two-Stage Sorption Hydrogen Compressor", *International Journal of Hydrogen Energy*, 2021 pp. 17282–17294.
- Rakesh Sharma, E. Anil Kumar, Pradip Dutta, S. Srinivasa Murthy, Yu.I. Aristov, M. M. Tokrev, T. X. Li, R. Z. Wang, "Ammoniated Salt Based Solid Sorption Thermal Batteries: A Comparative study", *Applied Thermal Engineering*, vol. 191, 2021, pp. 116875.
- Ajay Kumar, Vishnu Namboodiri, Gaurang Joshi, and Kush P. Mehta. "Fabrication and Applications of Fullerene-Based Metal Nanocomposites: A Review", *Journal of Materials Research*, 2021, pp. 1-15.

- Kaustubh Rane; Michael Beining; Swaroop Behera; Amir Kordijazi; **Ajay Kumar**; Pradeep Rohatgi, "Sand Casting of Surface-Alloyed Butterfly Valve with Improved Hardness and Corrosion Resistance by Incorporating Metal Powders In-Mold Coatings", *International Journal of Metalcasting*, 2021.
- **Girish Rajan**, "Solutions of a Comprehensive Dispersion Relation for Waves at the Elastic Interface of Two Viscous Fluids" *European Journal of Mechanics / B Fluids*, vol. 89C, 2021, pp. 241-258.

Physics

- Majety, M. B. Peters, **V. P. Majety**, and A. Emmanouilidou. "Triple Ionization and Frustrated Triple Ionization in Triatomic Molecules Driven by Intense Laser Fields", *Physical Review A*, vol. 103, no. 4, 2021, pp. 043109.
- **Shaon Sahoo**, Sk Saniur Rahaman, Manoranjan Kumar. "Quantum Phases and Thermodynamics of a Frustrated Spin-1/2 Ladder with Alternate Ising-Heisenberg Rung Interactions", *Journal of Physics: Condensed Matter*, vol. 33, no. 26, 2021, pp. 265801.

Mathematics and Statistics

- **Srijanani Anurag Prasad**, "Super Coalescence Hidden-variable Fractal Interpolation Functions", *Fractals*, Vol. 29, No. 3, March 2021.
- **Mariappan, M. J.** van Amerongen, P. Voglreiter, R. Flanagan, S. F. M. Jenniskens, M. Pollari, M. Kolesnik, M. Moche and J. J. Fütterer, "Software-Based Planning of Ultrasound and CT-Guided Percutaneous Radiofrequency Ablation in Hepatic Tumors", *International Journal of Computer Assisted Radiology and Surgery*, vol. 16, no. 1, 2021, pp. 1051-1057.

Humanities and Social Sciences

- **Prabha Shankar Dwivedi**. "Exploring Ethics and Aesthetics of Eco-Caring in Uttararāmacarita", *Journal of Dharma*, vol. 46, no. 2, June 2021, pp. 129-144.
- **Prabha Shankar Dwivedi**. "Karahā Pujan: A Folk-Worship of Krsna in Eastern Uttar Pradesh", *Religions of South Asia*, vol. 13, no. 2, 2019 (published in February 2021), pp. 160-187.
- P. K. Viswanathan and **C.S. Bahinipati**. "Growth and Human Development in the Regional Economy of Gujarat, India: An Analysis of Missed Linkages", *Journal of Social and Economic Development*, vol. 23, no. 1, June 2021, pp. S25-S47.
- **C.S. Bahinipati**, V. Kumar and P.K. Viswanathan. "An Evidence Based Systematic Review on Farmers' Adaptation Strategies in India" *Food Security*, vol. 13, no. 2, April 2021, pp. 399-418.

Media Article

- "COVID-19 Mobility Data Analysis: Observations on Using De-Identified and Aggregated Data for Social Impact Analysis in

India", Case Studies in PC Quest Bureau, in collaboration with Facebook® (Kalidas Yeturu, Charu Chadha, Krishna Prapoorna Biligiri, and Rohit Singh, PC Quest Bureau, March 19, 2021).

Books/Book Chapters

- **C.S. Bahinipati**, V. Kumar, P.K. Viswanathan, and K. Kavya. "Estimation of district-wise livelihood vulnerability index for the four coastal states in India". In Pal, I. et al. (Eds.). 'Disaster Resilience and Sustainability' Elsevier, pp. 459-487, June 2021.
- **Krishna Prapoorna Biligiri**, "Civil Engineering Applications: Quiet Pavements: A Novel Approach of Utilizing Rubberized Asphalt Mixtures", *Tire Waste and Recycling*, Elsevier, Edited by Trevor M. Letcher, Valerie L. Shulman, and Serji Amirkhanian, Academic Press, Paperback ISBN: 9780128206850, pp. 420-431, April 1, 2021.

Conferences/Proceedings

Civil & Environmental Engineering

- Peraka Naga Siva Pavani, **Satyanarayana N. Kalidindi**, and **Krishna Prapoorna Biligiri**, "Framework for Multi-Parametric Approach for Pavement Delineation: a Novel Technique for Prioritization of Pavements for Maintenance", *International Conference on Resource Sustainability – Sustainable Pavement Technologies* (icRS SPT 2021), Tirupati, India, May 26-27, 2021.
- Avishreshth Singh, Poornachandra Vaddy, Prasanna Venkatesh Sampath, and **Krishna Prapoorna Biligiri**, "Performance Monitoring of Pervious Concrete Pavement Systems", *International Conference on Resource Sustainability – Sustainable Pavement Technologies* (icRS SPT 2021), Tirupati, India, May 26-27, 2021.
- Akhil Charak, Venkataraman Pandurangan, Avishreshth Singh, and **Krishna Prapoorna Biligiri**, "Structural and hydrological evaluation of pervious concrete incorporating recycled glass and carbon composites", *International Conference on Resource Sustainability – Sustainable Pavement Technologies* (icRS SPT 2021), Tirupati, India May 26-27, 2021.
- Naga Siva Pavani Peraka, **Krishna Prapoorna Biligiri**, and **Kalidindi N. Satyanarayana**, "Development of a Multi-Distress Detection System for Asphalt Pavements: A Transfer-Learning Based Approach", *100th Annual Meeting of the Transportation Research Board of the National Academies*, Washington, DC, USA, January 2021.
- **P. V. Sampath**, "Quantifying the Impact of Climate Change on Food-Energy-Water Nexus Interactions", *EGU General Assembly Conference Abstracts* (Virtual), April 19-30, 2021, pp. EGU21-3853

Computer Science & Engineering

- **Sridhar Chimalakonda**, "A Dataset of Open-Source Game Engines", 8th IEEE/ACM International Conference on Mining Software Repositories, MSR 2021", Madrid, Spain (Virtual), 17-19 May 2021.
- **G. Ramakrishna**, "On Short Fastest Paths in Temporal Graphs", *International conference and Workshop on Algorithms and Computation (WALCOM)* " Online, February 28-March 2, 2021, pp. 40-51.
- **Sridhar Chimalakonda**, "Understanding Emotions of Developer Community Towards Software Documentation", *IEEE/ACM 43rd International Conference on Software Engineering: Software Engineering in Society (ICSE-SEIS)*, Madrid, Spain (Virtual), May 23-29, 2021.
- **Sridhar Chimalakonda**, "APIScanner - Towards Automated Detection of Deprecated APIs in Python Libraries", *IEEE/ACM 43rd International Conference on Software Engineering*, Madrid, Spain (Virtual), May 23-29, 2021.

Electrical Engineering

- A. Arvanitaki, N. Pappas, N. Carlsson, **P. Mohapatra**, "Secrecy in Congestion-Aware Broadcast Channels", *12th Wireless Days Conference (WD)*, June 2021.
- **K. P. Naveen** and A. Chaitanya, "Coexistence of LTE-Unlicensed and WiFi: A Reinforcement Learning Framework", *13th International Conference on Communication Systems and Networks (COMSNETS '21)*, January 5-9, 2021, pp. 308 – 316.
- **Vyavahare P.**, "Byzantine Fault-Tolerant Consensus Over Random Graph Processes", *ICDCN '21: Adjunct Proceedings of the 2021 International Conference on Distributed Computing and Networking*, January 2021, pp. 122-126.
- Gunturu M., **Vyavahare P.**, "Opinion Dynamics in Discrete-Time Networks with Trust-Mistrust Interactions", *2021 International Conference on COMMunication Systems & NETWORKS (COMSNETS)*, 2021, pp. 456-464.
- **Ramakrishna Sai Gorthi**. "Labeled From Unlabeled: Exploiting Unlabeled Data for Few-Shot Deep HDR Deghosting" *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, CVPR, Seattle, USA, June 19-25, 2021, pp. 4875-4885.

Mechanical Engineering

- **Girish Kumar Rajan**. "On a New Model for the Dissipation of Interfacial waves", *ICRAFT 2021, 2nd International Conference on Recent Advances in Fluid and Thermal Science*, BITS-Pilani, Dubai, March 19-21, 2021.

Chemistry

- **Rajib Biswas** "Statistical Mechanics in Chemistry and Biology" *SMCB-2021*, Online, January 23-25, 2021.

Humanities and Social Sciences

- D. Biswal, **C.S. Bahinipati**, "Why Farmers in India are not Adopting Crop-Insurance? Insights from Behavioural Economics Literature", *2nd International Symposium on Disaster Resilience and Sustainable Development*, Asian Institute of Technology, Bangkok, June 24-25, 2021.
- **C.S. Bahinipati**, U. Patnaik, "Building Resilience Against Floods in India: Human Development, Income, Inequality and Forest Cover", *2nd International Symposium on Disaster Resilience and Sustainable Development*, Asian Institute of Technology, Bangkok, June 24-25, 2021.
- **C.S. Bahinipati**, U. Patnaik, and A. Senapati, "Enhancing Resilience to Extreme Events in India: Do Socio-Economic Factors Matter?", *International conference on "Ecosystem Restoration for Resilience and Sustainability: Living with Nature"*, Indian Institute of Technology Indore, June 5-7, 2021.
- **C.S. Bahinipati**, "Response to Cyclone and COVID-19: Reflections on Learning Effects and Behavioural Biases", presented at 'Double Disaster: COVID & Cyclone – Impact and the Way Forward', National Institute of Disaster Management and IMPRI Impact and Policy Research Institute, June 2, 2021.
- **C.S. Bahinipati**, "Estimating Economic and Non-Economic Losses and Damages from Climate Change in India: Methodological Issues", *International Workshop on 'Methodological Challenges in Assessing Socio-Economic Losses and Damages from Climate Change in India'*, Indian Institute of Technology Tirupati (IITT), National Institute of Disaster Management (NIDM), and Organisation for Economic Co-operation and Development (OECD), May 25, 2021.
- **C.S. Bahinipati**, A. Singh, and U. Patnaik, "Soil Based Interventions for Economic Returns in India: A Systematic Review", *International Multi-Disciplinary Online Conference on Sustainable Soil Resources 2021 [SSR 2021]*, KIIT, Bhubaneswar, India, April 22-25, 2021.
- **C.S. Bahinipati**, and U. Patnaik, "What Motivates Farmers to Undertake Farm-Level Adaptation Options in India? A Systematic Review of Literature", *Water Security and Climate Change Conference*, Hanoi, Vietnam, March 1-4, 2021.
- **C.S. Bahinipati**, **R.A. Sirohi** and Sagarika S. Rao, "What Affects Urban Households' Energy Consumption Patterns? Technological Innovation and Behavioural Interventions", *Urban ARC 2021*, Indian Institute for Human Settlements (IHS), Bengaluru, January 14-16, 2021.
- **Rahul A. Sirohi** and Gupta, S.S, "Race and Caste in the Writings of Mariátegui and Ambedkar: A Comparative and Relational Perspective", *Society for Advancement of Socio-Economics (SASE), 33rd Annual Conference*, Virtual, July 3-5, 2021.

Awards and Achievements

Krishna Prapoorna

- Chairman, international conference on Resource Sustainability – Sustainable Pavement Technologies (icRS SPT 2021), virtual conference, hosted by IIT Tirupati, 26-27 May 2021
- Managing Editor, Resources, Conservation & Recycling, Elsevier, UK, Special Issue (June 2021-Present)
- Managing Editor, Resources, Conservation & Recycling Advances, Elsevier, UK, Special Issue (June 2021-Present)
- Lead Guest Editor, Journal of Testing and Evaluation, American Society for Testing and Materials (ASTM) International, USA, Special Issue (June 2021-Present)

- ESF College of Expert Reviewers, European Science Foundation, France (April 2021-Present)
- Associate Editor, Resources, Conservation and Recycling, Elsevier, UK (January 2021-Present)

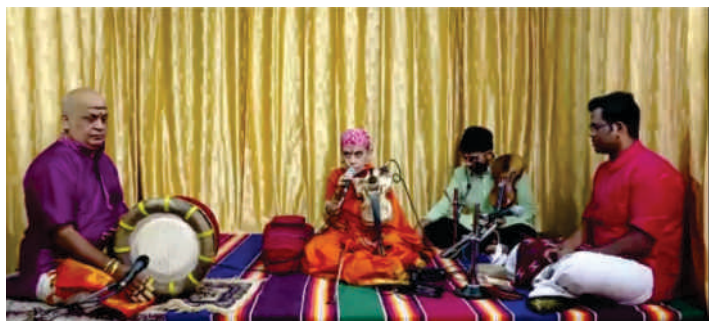
Chandra Sekhar Bahinipati

- **Associate Editor**, SN Business and Economics Journal, Springer
- **Associate Editor**, International Journal of Climate Change Strategies and Management, Emerald
- **Research Fellow**, Earth System Governance Network, Utrecht University, Netherlands

Events and Activities

SPIC MACAY Programmes

SPIC MACAY Heritage Club organized a violin recital on January 23, 2021 by Padmashri A. Kanyakumari. She was accompanied by Vidwan Triplicane K.Sekar on Thavil, Vidwan S.Sunil Kumar on Kanjira and Sayee Rakshith on violin. It was a scintillating program. Despite the constraints of the online platform, the students and faculty along with their family members enjoyed a mellifluous performance.



SPIC MACAY Heritage Club also organised a Carnatic Music recital by Dr. S. Sowmya on April 17, 2021. She was accompanied by Embar Sri S Kannan on the Violin, Neyveli Sri R Narayanan on the Mridangam, Chandrasekara Sharma on the Ghatam and Kumari Subashri on the Tanpura. The artistes not just gave a mesmerizing melodic performance but also explained clearly the intricacies and philosophies behind such a beautiful form of art and culture. It was a wonderful evening of fun and learning.



MEDHA

MEDHA, forum for women in IIT Tirupati, organized an evening of recreational activities for women faculty and staff on March 12, 2021, following which on March 13, 2021, MEDHA celebrated International Women's Day. The



celebration started with Ms. Divya's speech about the uniqueness of the MEDHA logo. **Dr. Seema Vinayak**, Director of Solid State Physics Laboratory, gave an inspiring talk on "Women Empowerment- Significance and Impact". The celebration also included a video presentation by the girl students of the Institute on the theme "How Great You Feel About Being a Woman and Importance of Women's Day". It was followed by a very beautiful song by Ms. Chaitali.

MEDHA hosts a talk by Missile Woman of India Dr Tessy Thomas

MEDHA and India@75 Celebration together organized an interesting talk by Missile Woman of India, Dr Tessy Thomas, Distinguished Scientist & Director General - Aeronautical Systems (AS), on June 23, 2021. The Title of the talk was



Women Empowerment. The talk motivated IIT Tirupati's female students to stand up for themselves and continuously strive to reach their goals.

Matribhasha Diwas Celebrated

IIT Tirupati organised a talk on the occasion of Mother Language Day on February 23, 2021. The invited speaker was Prof. Sudhir Kumar, Professor of English, DES-Multidisciplinary Research Centre, Panjab University. Professor Kumar delivered a talk on the subject: "Significance of 'Matri-Bhasha (Mother Tongue)' for Decolonization of Indian Mind: Some Critical Reflections". The talk inspired students to value their own languages and not let them be victims to the English education systems.

Students Corner

Inter IIT Tech Meet

Inter IIT Tech meet was hosted this year by IIT Guwahati in online mode from 26th to 28th March 2021. Students of IIT Tirupati participated very enthusiastically and a contingent of 35 students from IIT Tirupati took part in this Tech Meet. IIT Tirupati secured 17th position in this year's online version of the Inter IIT Tech Meet. IIT Tirupati also managed to win a bronze medal in the AgroBot design challenge making it 2 consecutive years of winning a Bronze medal in Agri-Robotics based events by IIT Tirupati.

Digital Wizards, the coding club of IIT Tirupati, organised various interesting workshops focusing on encouraging open source software development and GSOC. Some of the highlights include 'Intro to Git' workshop by one of the Institute's alumni, Mr. Priyansh. In addition, the club organised a session on a new attempt at a Math and Logic based problem, which attracted a large audience.

To promote the entrepreneurial spirit among students the **E-Cell** IIT Tirupati team organised various webinars with renowned startup founders like Mr. Gaurav Shrishrimal, CEO of Kaagaz Scanner, Mr. Taran Singh, Founder and CEO of MELVANO and Mr. Diwakar Chakravorty, Founder of Beyond Venture Partners, shared their inspiring journey and interacted with our students.

TIRUTSAVA 2021

Tirutsava is the annual festival of IIT Tirupati which is organised and managed by students of the Institute. The festival attracts a lot of attention not just from the campus, but also from the city folks. However, due to Covid-19, this year's Tirutsava was held in online mode considering the safety of the students and others. The online edition of Tirutsava saw a wide variety of technical events ranging from robotics, hackathons to cyber security based competitions, organised by IIT Tirupati's student technical clubs, in partnership with Industry professionals like Coding Ninjas. The fest also hosted a number of technical workshops in AI-ML, Ethical Hacking and IoT fields. Despite constraints of the online environment, the program was a huge success as the students thoroughly enjoyed through each of the programs and the competitions they witnessed or participated in.



Editor

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