

Samvid

A Biannual Newsletter of IIT Tirupati



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Medal Winners

Special Medallions 2020

Mr. Naresh Chockalingam – President's Prize, 2020
Ms. Saishradha – Governor's Prize, 2020

Special Medallions 2021

Mr. Gowtham S – President's Prize, 2021
Mr. Surya Ganesh Vadhri - Governor's Prize, 2021



IIT Tirupati holds its Second and Third Joint Convocation

The 2nd and 3rd Joint Convocation of IIT Tirupati was held on its permanent campus at Yerpedu on September 25, 2021. The occasion was graced by the presence of Mr. B. Santhanam, CEO, Saint Gobain, Asia-Pacific and Chairman & MD, Saint Gobain India Ltd as the chief guest, and Shri Amit Khare, IAS, Secretary (Higher Education), Government of India and Chairperson, Board of Governors of IIT Tirupati.

Director Prof. K. N. Satyanarayana welcomed the guests and presented a report of the progress made by the Institute during the past years. The chief guest Mr. B. Santhanam delivered an inspirational convocation address and congratulated the graduands. The Chairman (BoG), Shri Amit Khare, congratulated the graduating students, and expressed his delight on the progress made by the Institute in such short span of time.

A total of 208 B. Tech, 99 M. Tech, 9 M. Sc., and 11 M. S. (by research) degrees were awarded. In addition, the first PhD degree of the Institute was also awarded during the convocation ceremony. A total of 188 graduands received the degrees in person, while the rest of the graduands received

the degrees online. The efforts and achievements of exceptional students were also recognised by awarding them with President's Prize, Governor's Prize, Institute Prize, Amara Raja Prize, ITC. Ltd. Prize, and Aarvee Associates Prize.

MoUs Signed by IIT Tirupati

CQuRE of TCG CREST

An MoU was signed between IIT Tirupati and CQuRE of TCG CREST for Joint Doctoral Programme on Quantum Sciences and Technologies on August 12, 2021, which would facilitate students from one Institute to credit courses offered at the other Institute. In addition, both the Institutes shall encourage academic collaborations. The MoU aims for joint research projects in the areas of quantum computing, quantum communication, quantum technologies etc., in the future.

Dalhousie University, Halifax, Nova Scotia, Canada

IIT Tirupati signed an MoU with Dalhousie University, Halifax, Nova Scotia, Canada on November 24, 2021, to promote academic collaboration between the two institutes in areas of mutual interest. Some key areas included are Precision Agriculture, Water Technologies, and Food System. The scope of the collaboration under this MoU includes faculty and students exchange, mutual recognition and accreditation of courses, joint project development for external funding and development and delivery of courses, among others.

Lectures held at IIT Tirupati

Distinguished Lectures

- Professor Bhikhu Parekh, Emeritus Professor at the University of Hull, UK, delivered a lecture on 'Constitutional Articulation of the Role of the Indian State' on September 8, 2021.
- Shri Gurcharan Das, Author, Public Intellectual, Ex-CEO of Procter & Gamble India and Managing Director, Procter & Gamble Worldwide (Strategic Planning), delivered a lecture on 'Making a Life vs Making a Living' on November 24, 2021.

Computation: A Journey of Fundamental Questions and its Technological Impact," on September 29, 2021.

- Dr. Vikas Kumar, Distinguished Scientist and Former Director, DMRL/DRDO, Hyderabad, delivered a lecture on "Structure Integrity of Defence Platforms: An Integrated Approach from Concept to Deployment," on October 6, 2021.
- Dr. R. Thiagarajan, Assistant Professor, Department of Mechanical Engineering, delivered a lecture on "Next-generation of Field and Service Robots Specific focus on Underwater Robots," on October 13, 2021.
- Prof. V. Ramgopal Rao, Director, IIT Delhi, delivered a lecture on "Connecting Academic R&D with Product Innovation: A Few Case Studies and a Way Forward," November 29, 2021

Invited and Special Lectures/Talks held at IIT Tirupati

- Mr. Achal Khare, Former Managing Director, National High-Speed Rail Corporation Ltd., delivered a lecture on "Mumbai-Ahmedabad High-Speed Rail Project: New Technologies, Opportunities and Innovations," on July 28, 2021.
- Prof. Rajendra K. Bordia, George J. Bishop, III Professor of Materials Science and Engineering Clemson University, Clemson, SC, delivered a lecture on "Enabling Role of Ceramics in Realizing Carbon Neutral Energy," on September 15, 2021.
- Dr. S. Aravinda, Assistant Professor, Department of Physics, IIT Tirupati, delivered a lecture on "From Quantum Foundations to Quantum Information and

Invited Lectures

- Dr. David A. Fleming Munoz, Senior Research Economist, CSIRO, Australia, delivered a lecture on "Economic Vulnerability to Decarbonisation" on July 9, 2021.
- Prof. Ganesh Shivakoti, Visiting Professor at Arizona State University, USA, delivered a lecture on "Long-term Performance of Innovative Development Interventions: Lessons from an Irrigation Experiment in Nepal" on July 23, 2021.

- Prof. Keshab Das, Gujarat Institute of Development Research, Ahmedabad, India, delivered a lecture on "State Capital, and Industrialism: The Indian Context" on September 17, 2021.
- Dr. Alex Thomas, Assistant Professor, School of Arts and Sciences, Azim Premji University, Bangalore, India, delivered a lecture on "Macroeconomics: An Alternative Approach" on September 24, 2021.
- Dr. Sayan Dey, Postdoctoral Fellow, Wits Centre for Diversity Studies, University of Witwatersrand and Kashyapi Ghosh, Ph.D. Scholar, IIT Tirupati, India, had a

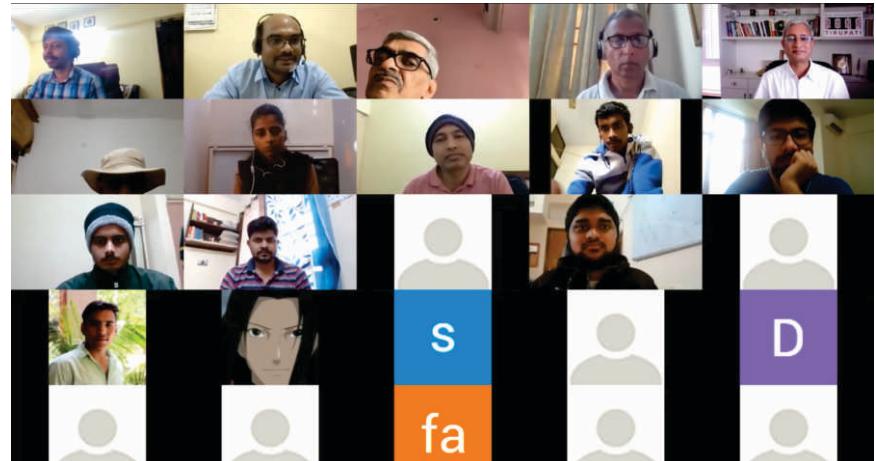
conversational discourse on the subject of "Food Dialogue" on October 23, 2021.

- Dr. Namrata Chindarkar, Associate Professor and Chairperson, JSW School of Public Policy, IIM Ahmedabad, India, delivered a lecture on "Access to Improved Sanitation and Dietary Diversity" on November 26, 2021
- Dr. Sukanya Das, Associate Professor, Department of Policy and Management Studies, TERI School of Advanced Studies, New Delhi, India, delivered a lecture on "Implementation and challenges for applying stated preference techniques specifically in the context of developing countries" on December 2, 2021.

Conferences, Workshops, Symposia Organized by the Institute

Workshop on Representation Theory

A 6-Day online workshop on "Representation Theory of Affine Lie Algebras," funded by DST, was hosted by the Dept. of Mathematics and Statistics, IIT Tirupati, during December 13-18, 2021. About 110 participants registered for the workshop. The resource persons for the workshop included Prof. K. N. Raghavan (IMSc), Dr. Sachin S. Sharma (IIT Kanpur), and Prof. S. Viswanath (IMSc).



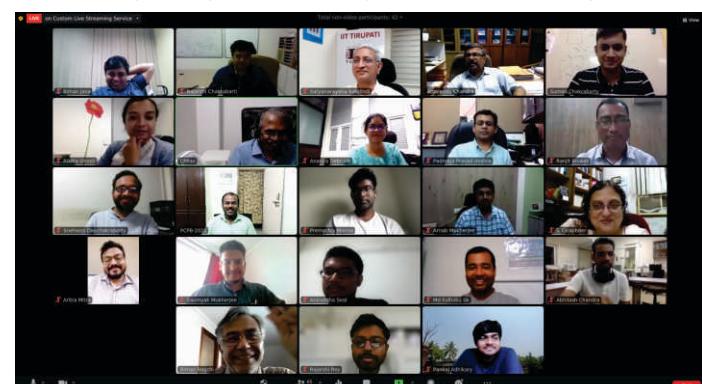
Workshop on Academic and Research Writing

A 5-Day online workshop on "Capacity Building through Academic and Research Writing," funded by ATAL Academy of AICTE, New Delhi was hosted by the Dept. of Humanities and Social Sciences during September 10-14, 2021. Around 90 participants attended the workshop and listened to the informative talks of 15 resource persons from various other IITs and central universities including an expert from abroad. Dr. Prabha Shankar Dwivedi from the Dept. of Humanities and Social Sciences was the coordinator of the workshop.



Symposium on Physical-Chemistry Physical-Biology

A 5-Day online symposium on "Physical-Chemistry Physical-Biology" was organised by Dr. Rajib Biswas, Dept. of Chemistry, IIT Tirupati, along with Dr. Suman Chakrabarty and Prof. Ranjit Biswas from SNBNCBS Kolkata, and Prof. Rajarshi Chakrabarti and Prof. Anindya Dutta from IIT Bombay as coordinators. Prof. Biman Bagchi, IISc Bangalore, mentored the event. A total of 34 invited lectures were delivered by the leaders and young faculty members working in this area. More than 1000 participants were registered for the symposium.



Webinar on Impacts of Climate Variability

A 1-Day webinar on "Impacts of Climate Variability on Sustainable Water Resources Planning and Management" was organized by the Dept. of Civil and Environmental Engineering, IIT Tirupati in collaboration with S.V. University, Tirupati. The webinar was held on July 28, 2021. The talks were attended by more than 200 students and researchers from across the country.

ATAL Faculty Development Programmes

- ATAL FDP on "Building and Sustaining Technology Ventures Building and Sustaining Technology Ventures" was organised during 16-20 August 2021.
- ATAL FDP on "Processing of Novel Materials for Defence and Aerospace Applications" was organised during 6-10 December 2021.

- ATAL FDP on "Advanced Manufacturing of Biomedical Devices for Precision health technologies" was organised during 13-17 Dec 2021.

Workshop on Advanced Manufacturing

A 5-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 September 10-14, 2021. Around 110 participants attended the workshop and listened to the informative talks of 15 resource persons from various other IITs and central universities including an expert from abroad. Dr. Mamila Ravi Sankar from the Dept. of Mechanical Engineering was the coordinator of the workshop.

Faculty and Staff News

New Faculty Entrants

Sl. No.	Name	Department	PhD	Previous Employment
1	Mr. Ganesan V. R. (Prof. of Practice)	Mechanical Engineering		Daimler Trucks Asia
2	Dr. Sanchayan Nath	Humanities and Social Sciences	Indiana University Bloomington, USA	Researcher, Universiteit Utrecht, Netherlands
3	Dr. Thiagarajan R.	Mechanical Engineering	Indian Institute of Technology Madras	Postdoctoral Scholar, University of California, Los Angeles
4	Dr. Bibhuti Mary Kachhap	Humanities and Social Sciences	Indian Institute of Technology Dhanbad	Assistant Professor, Presidency University, Bangalore
5	Dr. Aravinda S.	Physics	Manipal University, Manipal, Karnataka	Postdoctoral Fellow, Indian Institute of Technology Madras
6	Dr. Katha Anki Reddy	Chemical Engineering	Indian Institute of Science Bangalore	Associate Professor, Indian Institute of Technology Guwahati
7	Dr. Behera Prasanna Kumar	Civil and Environmental Engineering	Indian Institute of Technology Kanpur	Adhoc Faculty, NIT Andhra Pradesh
8	Dr. Prasenjit Mondal	Chemistry	Indian Institute of Technology Bombay	Postdoctoral Fellow, Indian Institute of Science Education and Research Kolkata
9	Dr. Nilesh Choudhary	Chemical Engineering	Academy of Scientific and Innovative Research, Pune	Postdoctoral Fellow, King Abdullah University of Science and Technology, Saudi Arabia
10	Dr. Sourav Chakraborty	Chemistry	Jadavpur University, Kolkata	Postdoctoral Research Associate, University of Rochester, New York, USA
11	Dr. Ranjan Krishna Modak	Physics	Indian Institute of Science Bangalore	Assistant Professor, Banaras Hindu University, Varanasi

Sl. No.	Name	Department	PhD	Previous Employment
12	Dr. Shamik Misra	Chemical Engineering	Indian Institute of Technology Bombay	Postdoctoral Research Associate, Princeton University, USA
13	Dr. S. Uday Kumar	Chemical Engineering	Indian Institute of Technology Roorkee	Postdoctoral Scholar, Stanford University, California, USA
14	Dr. A. V. Rahul	Civil and Environmental Engineering	Indian Institute of Technology Madras	Postdoctoral Researcher, Gent University, Belgium
15	Dr. Shailendra Kumar Singh	Humanities and Social Sciences	Jamia Millia Islamia Central University, New Delhi	Assistant Professor, Dhirubhai Ambani Institute of Information and Communication Technology, Gujarat
16	Dr. Venkaiah Chintalapudi	Chemistry	University of Hyderabad	Postdoctoral Research Associate, University of Glasgow, Glasgow

New Staff Entrants

Sl. No.	Full Name	Designation	Department
1	Chakra Varthi Kandregula	Assistant Security Officer	Security
2	V Kushal Reddy	Junior Assistant	General Administration
3	Akkala Supraja	Junior Assistant	Registrar Office
4	Prattipati Vidya Sagar	Junior Assistant	Academics
5	Saligari Akhil Rathna	Junior Assistant	Purchase
6	Chintakrindi Manicharan	Junior Assistant	Stores
7	Upendram Jagadeswara Raju	Junior Assistant	Accounts
8	Chalapaka Kanaka Venkata Mani Brahmam	Junior Assistant	Purchase
9	Babu Raj M.	Technical Officer	Mechanical Engineering
10	Sadgurumoorthy Narni	Assistant Executive Engineering	Engineering Unit
11	G. Venkata Subba Reddy	Horticulture Officer	Engineering Unit
12	Nunsavathu H. Rao Naik	Junior Technical Superintendent	Mechanical Workshop
13	Thaddi Sai Praveen	Junior Technician	Chemistry
14	Velakara Pavan Kumar	Junior Assistant	Establishment
15	Sruthi Kodidini	Medical Officer	Health Centre
16	V. Dinesh Kumar	Junior Asistant	Accounts
17	Umesh Kumar Singh	Assistant Registrar	Recruitment
18	Vadapalli Durga Rama Pavan	Junior Technical Superintendent	Physics Lab
19	Rajan Babu Lankapalli	Deputy Registrar	Finance & Accounts
20	Ramesh R.	Assistant Registrar	Purchase
21	Gorapalli Sravya	Junior Technician	Electrical Engineering
22	R. S. K. Chaitanya Kotagiri	Executive Engineer - Civil	Engineering Unit

Sponsored Research Projects

S. No.	Title	Funding Agency	Investigator and Dept.
1	National facility for Accelerated Testing of Pavements and Vehicle Dynamics (NATPaVeD)	Ministry of Road Transport & Highways, Government of India	Dr. Krishna Prapoorna (PI), Civil & Environmental Engineering Dr. Sriram Sundar (Co-PI), Mechanical Engineering
2	Experimental Study on Pervious Concrete: An Eco-Friendly Concrete Pavement	Ministry of Energy and Infrastructure, United Arab Emirates & University of Sharjah	Dr. Krishna Prapoorna (PI), Civil & Environmental Engineering
3	Estimation of Embodied Energy and Carbon Footprint Performance Indicators of Highway Infrastructure	CSR Grant by Aarvee Associates	Dr. Krishna Prapoorna Biligiri Civil and Environmental Engineering
4	Development of Titanium envelop forgings and material characterization for gas turbine compressor rotor and stator blades	GTRE	Dr. Ajay Kumar (PI), Mechanical Engineering
5	Theoretical spectroscopic investigation of the microscopic origin of chaotropicity and kosmotropicity of osmolytes	Science and Engineering Research Board, Department of Science and Technology, India	Dr. Rajib Biswas (PI), Department of Chemistry
6	Encapsulation of therapeutic agent in carbon nanodots	SiNON, USA	Dr. Shihabudheen M. Malilyekkal, Civil & Environmental Engineering
7	Finishing of 3D Printed High Aspect Ratio Complex internal conformal cooling channels using Economic polymer rheological abrasive semisolid medium	Science and Engineering Research Board, Department of Science and Technology, India	Dr. M. Ravi Sankar (PI), Department of Mechanical Engineering
8	Fruit Measurement Software Development Project	Chifu Agritech Private Limited	Dr. Rama Krishna Gorthi (PI), Department of Electrical Engineering
9	Modelling Forest Phenological Parameters from Time Series Remote Sensing Data	Space Applications Centre, ISRO, Ahmedabad, Gujarat	Dr Roshan Srivastav (PI), Civil and Environmental Engineering

Industrial Consultancies

1	Discovering energy-hungry patterns in machine learning driven software systems	Accenture LLP	Dr. Sridhar Chimalakonda Computer Science and Engineering
2	Seepage analysis and slope stability analysis of downstream cofferdam at the deepest scour portion of Polavaram irrigation project, Andhra Pradesh	Megha Engineering and Infrastructures limited	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
3	Online facilitation of Debugging Skills through Game Based Learning	Commonwealth Educational Media Centre for Asia	Dr. Sridhar Chimalakonda Computer Science and Engineering
4	Providing expert opinion on the soil stabilization based on the soil for the site proposed for construction of 25 MLD capacity sewage treatment plant at Thukivakam, Tirupati	Tirupati Smart City Corporation Ltd	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
5	Towards comprehending COBOL programs through knowledge graphs	Exafluence Inc.	Dr. Sridhar Chimalakonda Computer Science and Engineering

S. No.	Title	Funding Agency	Investigator and Dept.
6	Soil classification tests on disturbed samples from four boreholes drilled along the proposed bund alignment of SS Tank at Mangalampadu Cheruvu, Mangalampadu, Sullurupeta, Nello District, AP	Public Health and municipal Engineering Department, Govt of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
7	Stability analysis of ECRF Dam in Gap-1 area as per the carried-out Investigation and Available input at Polavaram irrigation project, Andhra Pradesh	Indo Canadian Consultancy Services Ltd.	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
8	Geotechnical investigations on the excavated soil below the proposed earthen bund of SS tank at Karanamgunta for its stability as a cut-off-trench material	Rural water supply and sanitation, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
9	"Third party" Design stability and structural safety certificate" for proposed India International Convention and expo centre-Phase I	Larsen and Toubro Construction Building and Factories	Dr. M. Nithyadharan Civil and Environmental Engineering
10	Dynamic analysis of earthen embankment of Isarda Dam, Rajasthan	Water Resource Department, Rajasthan	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
11	Stress deformation analysis of plastic concrete diaphragm cutoff wall in the distressed zone from chainage 1600 m to 1700m of earth dam of SPVB reservoir at B Mattam in Kadapa District, Andhra Pradesh.	Megha Engineering and Infrastructure Ltd.	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
12	Improvement of existing effluent treatment facility at Amara raja Batteries Limited	Amararaja Batteries Pvt Ltd	Dr. Shihabudheen M. Maliyekkal Civil and Environmental Engineering
13	Laboratory testing of plastic concrete specimens prepared from the spoil concrete of four panels at downstream cofferdam of Polavaram irrigation project, Andhra Pradesh	Water Resource Department, Govt. of Andhra Pradesh	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
14	Resilient modulus testing on DBM from NH275 sections	Dilip Buildcop Limited	Dr. Krishna Prapoorna Biligiri Civil and Environmental Engineering
15	Stress deformation analysis of the existing concrete diaphragm seepage cut-off wall for Isarda dam under static and seismic loading conditions	Om Metals Infra Ltd.	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
16	Data Science Project Initiatives	Gnanam Institute for Training in Advanced Analytics Private Limited	Dr. M. Nabil Chemical Engineering
17	Vetting of structural design and drawing of technical facility structure, DRDO	Thaparsons K. V. Shipping Agents Pvt Ltd	Dr. Roshan Karan Srivastav Civil and Environmental Engineering
18	Water sample analysis	RWS&S Srikanthasthi	Dr. Shihabudheen M. Maliyekkal Civil and Environmental Engineering
19	Holistic seepage analysis of the upstream and downstream cofferdams of the polavaram irrigation project considering the riverbed levels after scouring	Megha Engineering and Infrastructure Ltd.	Dr. B. Janaki Ramaiah Civil and Environmental Engineering
20	Fruit measurement software development project	Chifu Agritech Private Limited	Dr. Rama Krishna Gorthi Electrical Engineering

S. No.	Title	Funding Agency	Investigator and Dept.
21	Support in carrying of landslide and Geotech related geohazard risk assessment tool development along hydrocarbon pipeline section IP-1G DHUMREWADI TO RT-GOA P/L (89KM)	Geo Climate Risk Solutions Pvt Ltd (GCRS), Visakhapatnam	Prof. A. Murali Krishna Civil and Environmental Engineering
22	Development of process parameters for PSA based medical oxygen plants	Vertus Life Sciences Private Limited	Dr. Sasidhar Gumma Chemical Engineering
23	An approach for generation of source code centric knowledge graphs	Robert Bosch Engineering and Business Solutions Private limited	Dr. Sridhar Chimalakonda Computer Science and Engineering

Recent Faculty Publications

Journals

Civil & Environmental Engineering

- U. Kannan, S.A. Gafoor, S. Srivastava, S. Gupta, [M. Nithyatharan](#), and [S. M. Maliyekkal](#). "A Waste-derived Nanocomposite Sealant for Repairing Micro-cracks in Concrete", *Journal of Building Engineering*, 2022, pp. 103965.
- S. K. Sahdeo, A. K. Chandrappa, and [K. P. 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, vol. 7, no. 19, October 2021, pp. 1-9.
- N. S. P. Peraka, [K. P. Biligiri](#), and S. N. Kalidindi. "Development of a Multi-Distress Detection System for Asphalt Pavements: A Transfer-Learning Based Approach", *Journal of the Transportation Research Record*, Sage, USA, vol 2675, no. 10, October 2021, pp. 538-553.

Electrical Engineering

- J. K. Mandapalli, V. Ravi, Sai Siva Gorthi, S. Gorthi, and [R. K. Sai Gorthi](#), "Single-Shot Circular Fringe Projection for Profiling of Objects Having Surface Discontinuities", *Journal of the Optical Society of America A (JOSA-A)*, vol. 38, No. 9, December 2021, pp. 1-13.
- Swetha V, Asish Kumar Mishra, Deepak Mishra, [R. K. Sai Gorthi](#). "An Eigenvector Approach for Obtaining Scale and Orientation Invariant Classification in Convolutional Neural networks", *Advances in Computational Intelligence*, Springer, December 2021.
- Arvanitaki, N. Pappas, N. Carlsson, [P. Mohapatra](#), and O. Burdakov. "Performance Analysis of Congestion-Aware Secure Broadcast Channels", *EURASIP Journal on Wireless Communications and Networking*, September 2021.
- S. Allipuram, [P. Mohapatra](#), N. Pappas, S. Parmar, and S. Chakrabarti. "Performance Analysis of a MIMO System with Bursty Traffic under Jamming Attack", *IEEE Transactions on Green Communications and Networking*, September 2021.

- Somalatha U, and [P. Mohapatra](#). "Role of Shared Key for Secure Communication over 2-User Gaussian Z-Interference Channel", *IEEE Transactions on Information Forensics and Security*, November 2021.

Mechanical Engineering

- V. K. Sharma, A. Sateesh, [E. Anil Kumar](#). "Performance Investigation of a Two-stage Sorption Hydrogen Compressor", *International Journal of Hydrogen Energy*, vol. 46, May 2021, pp. 17282-17294.
- Rakesh Sharma, [E. Anil Kumar](#), Pradip Dutta, S. Srinivasa Murthy, Yu.I. Aristov, M. M. Tokrev, T. X. Li, and R. Z. Wang. "Ammoniated Salt-based Solid Sorption Thermal Batteries: A Comparative Study", *Applied Thermal Engineering*, vol. 191, June 2021, pp. 116875.
- [G. K. Rajan](#). "Solutions of a Comprehensive Dispersion Relation for Waves at the Elastic Interface of Two Viscous Fluids", *European Journal of Mechanics / B Fluids*, vol. 89, 2021, pp. 241-258.
- K. K. Gajrani, P. S. Suvin, S. V. Kailas, K. P. Rajurkar, and [M. Ravi Sankar](#). "Machining of Hard Materials Using Textured Tool with Minimum Quantity Nano-Green Cutting Fluid", *CIRP Journal of Manufacturing Science and Technology*, vol. 35, 2021, pp. 410-421.
- [Anup Basak](#). "Grain Boundary-Induced Premelting and Solid Melt Phase Transformations: Effect of Interfacial Widths and Energies and Triple Junctions at the Nanoscale", *Physical Chemistry Chemical Physics*, 2021.
- P. Boggavarapu, S. P. Ramesh, [M. M. Avulapati](#), and R. V. Ravikrishna. "Secondary Breakup of Water and Surrogate fuels: Breakup Modes and Resultant Droplet Sizes", *International Journal of Multiphase Flow*, 2021, pp. 103816.
- K. Sarath Babu, and [E. Anil Kumar](#), "Thermodynamic Analysis of Thermochemical Energy Storage System based on AB5 Type Hydride Pairs", *Materials Today: Proceedings*, 2021.
- Ananthapadmanabhan Ramesh, and [Sriram Sundar](#). "Contributions of Various Non-Linearities to The Dynamic Response of an Automotive Drum Brake During Typical

- Braking: A Theoretical Study", *International Journal of Non-Linear Mechanics*, 2021, pp. 103808.
- Tinku Kumar, **D. Venkata Kiran**, Navneet Arora, and Srihari Chitral. "Manipulating Heat Density to Enhance the Performance of Aluminium Alloy-Steel Joints Using Arc Oscillations in The GTAW Process", *Materials Letters*, vol. 302, 2022.
 - K. Sarath Babu, and **E. Anil Kumar**. "Thermodynamic Characterization of Mg-50 wt% LaNi5 Composite Hydride for Thermochemical Energy Storage Application", *Energy Storage*, vol. 3, no. 6, December 2021, pp. e272.
 - Nikhil Kumar Etteneni, and **M. M. Avulapati**, "An Experimental Investigation on Liquid Sheet Breakup due to Perforations in Impinging Jet Atomization, Atomization and Sprays", DOI 10.1615/AtomizSpr.2021037826.
 - Tinku Kumar, **D. Venkata Kiran**, Navneet Arora, and P. Sudhir Kumar, "Study of Steel-Aluminium Joining Under the Influence of Current Waveforms Using Advanced CMT Process Variants", *Materials and Manufacturing Processes*, 2022.
 - M. Anirudh Sampath, A.V. Sai Pavan, **G. Subrahmanyam**, C. Srihari, **N. Venkaiah**, and **D. Venkata Kiran**. "In-Situ Detection of Welding Defects – A Review", *Welding in the World*, 2022.
 - A. Krishna, L. S. Aravinda, A. Murugan, N. S. Kumar, **M. R. Sankar**, K. N. Reddy, N Balashanmugam. "A Study on wafer Scalable Industrially Applicable CNT based Nanocomposite of Al-CNT, Cu-CNT, Ti-CNT, and Ni-CNT as Thermal Interface Materials Synthesised by Thin Film Techniques", *Surface and Coating Technologies*, 2021, pp. 127926.
 - K. D. Reddy, A. Joy, and **R. Biswas**. "Effects of Hydrophobic Solute on Water Normal Modes", *Chemical Physics*, vol. 550, October 2021, pp. 111303.
 - R. Ahmed, and **A. K. Manna**. "Origins of Large Stokes Shifts in a Pyrene-Styrene based Push-Pull Organic Molecular Dyad in Polar Solvents and Large Electron Mobility in the Crystalline-State: A Theoretical Perspective", *J. Phys. Chem. C*, 2021.
 - K. Boya, K. Nam, A. K. Manna, J. Kang, C. Lyi, A. Jain, S. M. Yusuf, P. Khuntia, B. Sana, V. Kumar, A. V. Mahajan, D. R. Patil, Kee Hoon Kim, S. K. Panda, and **B. Koteswararao**. "Magnetic Properties of the S=5/2 Anisotropic Triangular Chain Compound i3FeMo2O12", *Phys. Rev. B* 104, 2021, pp. 184402-184408.
 - "Doublets", *Journal of Physics B: Atomic, Molecular and Optical Physics*, vol. 54, May 2021, pp. 08500.
 - Ankur Mandal, **P. C. Deshmukh**, and Kamal P Singh. "Controlling High Harmonic Generation Using Inhomogeneous Two-Color Driving Laser Pulse", *Laser Physics*, vol. 31, no. 7, 2021, pp. 075302.
 - K. Boya, K. Nam, A. K. Manna, J. Kang, C. Lyi, A. Jain, S. M. Yusuf, P. Khuntia, B. Sana, V. Kumar, A. V. Mahajan, Deepak R. Patil, Kee Hoon Kim, S. K. Panda, and **B. Koteswararao**. "Magnetic Properties of The S=5/2 Anisotropic Triangular Chain Compound Bi3FeMo2O12", *Phys. Rev. B*, vol. 104, 2021, pp. 184402.
 - U. K. Voma, S. Bhattacharya, E. Kermarrec, J. Alam, Y. M. Jana, B. Sana, P. Khuntia, S. K. Panda, and **B. Koteswararao**. "Electronic Structure and Magnetic Properties of The Effective Spin Jeff=1/2 Two-Dimensional Triangular Lattice K3Yb(VO4)2", *Phys. Rev. B*, vol. 104, 2021, pp. 144411.
 - E. Kermarrec, R. Kumar, G. Bernard, R. Hénaff, P. Mendels, F. Bert, P. L. Paulose, B. K. Hazra, and **B. Koteswararao**, "Classical Spin Liquid State in the S=5/2 Heisenberg Kagome Antiferromagnet Li9Fe3(P2O7)3(PO4)2", *Phys. Rev. Lett.*, vol. 127, October 2021, pp. 157202.
 - T. Chakrabarty, I. Heinmaa, **B. Koteswararao**, and R. Stern. "Contradiction of One-Dimensional Magnetism in Incupo5 From MAS-NMR Experiments", *AIP Conference Proceedings*, vol. 2369, September 2021, pp. 020050.

Humanities and Social Sciences

- P. K. Verma, and **P. S. Dwivedi**. "Revisiting Sringar with Dhananjaya's Conceptions: A Manifestation of Ayoga, Viprayoga, and Sambhoga through Kalidasa's Malvikagnimitra", *Quarterly Journal of Mythic Society*, vol. 112, no. 2-3, April -September 2021, pp. 22-39.
- Nishkala Sekhar, and **Rahul A. Sirohi**. "The Revolution Will not be Colour Blind: The Enduring Relevance of Anti-Apartheid Voices", *International Critical Thought*, vol 11, no. 4, pp. 568-584.
- V. Kumar Yadav, Shomik Dasgupta, and **Bharath Kumar**. "The Institution of the Caste System and its Practices: An Ethical Critique by B.R. Ambedkar", *IASSI Quarterly Contributions to Indian Social Science*, vol. 40, no. 3, July-September 2021.

Books/Book Chapters

- P. S. Dwivedi** (Editor). *Aesthetics and the Philosophy of Art: Comparative Perspectives*. New Delhi: Routledge India, 2021.
- A. K. Singh, and **P. S. Dwivedi**. "The Question of Language in the Mothering of a Territory: Understanding Conflicts in Embodiment of Territories in a Multilingual Space", in Debajyoti Biswas and John Charles Ryan (Eds.) *Nationalism in India: Texts and Contexts*, London: Routledge, pp. 95-111, September 2021.

Chemistry

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- G. R. Mahajan, **B. Radhika**, and **K. P. Biligiri**. "Influence of Dynamic Analysis on Estimation of Rutting Performance Using the Fixed Vehicle Approach", *18th International Road Federation (IRF) World Meeting Exhibition*, Dubai, UAE, November 7-10, 2021.
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Computer Science & Engineering

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Chemistry

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Mathematics

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Humanities and Social Sciences

- **A. Raghuramaraju**. "Indian Philosophy Today: Reclaiming, Critiquing, Describing and Evaluating", in a Webinar on *Indian Philosophy Today: An Reappraisal*, organised by the Department of Philosophy, Delhi University, July 30, 2021.
- **A. Raghuramaraju**. "How the Presence of Modernity-Colonialism Forced Enslaved Indians to Scout for Resources

for Freedom in the Past: Bal Gangadhar Tilak and Bhagavad Gita", in Workshop on *Freedom 'from' Others or Freedom 'with' Others: Alienation, Independence and Liberation in Contemporary Indian Philosophy*, Eberhard Karls Universitat, Tubingen, December 11-13, 2021.

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- **A. Raghuramaraju**. "Way Forward", in the Concluding session of the *5th International Annual Conference on Deleuze and Guattari Studies*, November 11, 2021.
- P. K. Verma, and **P. S. Dwivedi**. "Revisiting the Ecosophy of the Rāmāyaṇa: An Aesthetical Exploration." *International Conference of Ecocriticism and Environmental Studies*, London Centre of Interdisciplinary Research (LCIR), London, UK, October 16-17, 2021.
- **P. S. Dwivedi**. "Brahma Bābā- A Ghost or A Deity? An Inquiry into the North Indian Folk Beliefs with Special Reference to Harshu Brahma", at the *18th Annual Conference of the European Association for the Study of Religions (EASR)*, on "Resilient Religion" at the University of Pisa, Italy (Online, August 30 – September 3, 2021), August 31, 2021.
- **C. S. Bahinipati, R. A. Sirohi**, and S.S. Rao. "Technological Innovations, Behavioural Interventions and Household Energy Conservation: Policy Insights and Lessons", presented at the *Environmental Research Conference 2021*, November 15-19, 2021.
- Biswal, D., and **C. S. Bahinipati**, (2021). "Adoption and impact of crop insurance in India: evidence from India Human Development Survey", presented at the *17th Globelics International Conference*, Heredia, Costa Rica, November 3-5, 2021.
- **C. S. Bahinipati, R. A. Sirohi**, and S.S. Rao. "Technological Innovation, Behavioural Interventions and Conserving Household Level Energy: A Review", *17th Globelics International Conference*, Heredia, Costa Rica, November 3-5, 2021.
- **C. S. Bahinipati**, "Do Socioeconomic Factors Enhance Household's Resilience to Climate Extremes? Empirical Evidence from Cyclonic Storms and Floods in India", *Sustainability & Beyond Colloquium series*, Amrita Vishwa Vidyapeetham's UNESCO Chair on Experiential Learning for Sustainable Innovation and Development and Amrita School for Sustainable Development in light of UN International Day for Disaster Risk Reduction, Kochi, India, 2021.
- **C. S. Bahinipati**. "Do Indian Farmers Undertake Farm-Level Adaptation Measures? Determinants, Barriers, and the Way Forward", *6th International Climate Change Adaptation Conference (Adaptation Futures 2020)*, New Delhi, India, October 5-8, 2021.

- **C. S. Bahinipati.** "Climate Change, and Farmers' Adaptive Behaviour and Wellbeing: Evidence from the Studies in India", *NIICE International Studies Convention: Reimaging the World: Reflections on the Future of World Order*, Nepal, August 27, 2021.
- Dinamani Biswal, and **C. S. Bahinipati.** "Adoption and Impact of Crop Insurance in India: Evidence from India Human Development Survey", *11th Biennial Conference of the Indian Society for Ecological Economics (INSEE)*, Indraprastha Institute of Information Technology, Delhi, India, December 15-17, 2021.
- **Rahul A. Sirohi**, and Sonya Surabhi Gupta. "Race and Caste in the Writings of Mariátegui and Ambedkar: A Comparative and Relational Perspective", *SASE's 33rd Annual Conference: After Covid? Critical Conjunctures and Contingent Pathways of Contemporary Capitalism*, Virtual Conference, July 2-5, 2021.
- **C. S. Bahinipati**, "Impact of COVID 19 on Migration and Street Vendors in India: Reflections from Behavioural Economics Literature", *5th Annual national Conference of SOEA on 'COVID 19: Impact of Health, Rural Economy and Migration*, Khallikote University Berhampur, Odisha, India, September 5, 2021.
- Capacitive Deionization (CDI) System", granted on November 24, 2021, Design No.: 349450-001.
- **Dr. Chandra Sekhar Bahinipati: Research Fellow**, Earth System Governance Network, Utrecht University, Netherlands.
- **Dr. Chandra Sekhar Bahinipati: Member**, Steering Group, Earth System Governance Taskforce on Knowledge Cumulation, Earth System Governance Network, Utrecht University, Netherlands
- **Dr. Chandra Sekhar Bahinipati: Associate Editor**, *International Journal of Climate Change Strategies and Management*, Emerald.
- **Dr. Krishna Prapoorna: Member** (R&D Institutions), Working Group on Transport, Kerala State Planning Board (2021-27).
- **Dr. Krishna Prapoorna: Managing Editor**, *Resources, Conservation & Recycling*, Elsevier, UK, Special Issue (2021-22).
- **Dr. Krishna Prapoorna: Lead Guest Editor**, *Journal of Testing and Evaluation*, American Society for Testing and Materials (ASTM) International, USA, Special Issue (2021-22)
- **Ms. Raka Ahmed**, a PhD student in Chemistry bagged the **Best Poster Award** for her poster titled "Theoretical Insights on Tunable Optoelectronics and Charge Mobilities in Cyano-Perylenediimides: Interplays between -CN Numbers and Positions" in *The 17th Theoretical Chemistry Symposium-2021*, organized by IISER Kolkata, IACS Kolkata, University of Kalyani and S. B. Bose National Centre For Basic Sciences Kolkata India, 2021.
- **Mr. P. Bhargava Chandan**, a PhD Student in Mechanical Engineering got selected for prestigious "Department of Science and Technology (DST) Inspire Research Scholar" for the year 2021.

Awards/Achievements

- **Prof. A. Raghuramaraju: Member**, Editorial Board, *Journal of Human Values*, Sage Publications.
- G. Pullangott, U. Kannan, S. Gayathri, **D. V. Kiran**, and **S. M. Maliyekkal**: "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*.
- Abhin Aziz, S. Sengupta, and **S. M. Maliyekkal**: Awarded the Indian design patent titled "Integrated Design for automated

2021, during the fifth virtual treat organised by SPICMACAY Heritage club, IIT Tirupati. Shri D. A. Srinivas played the Mridangam, and Shri S. Sunil Kumar played the Kanjira.

Events and Activities

75th Independence Day

IIT Tirupati celebrated the 75th Independence Day on August 15, 2021, on its permanent campus. The celebrations began with the hoisting of the national flag by Director Prof K. N. Satyanarayana, followed by the national anthem. The Director addressed the gathering of the faculty, staff and students. Students organised diverse cultural events relating to national unity and love for the country. An official YouTube account for cultural programmes, "IITT CULTURALS", was launched on the day. The celebrations were streaming online.

SPICMACAY

Vidushi Punya Srinivas gave a Veena recital on August 21,

Academic Orientation Programme

The Institute conducted its 7th Orientation Programme (Online) on November 26, 2021, to induct the 2021-2025 batch of B. Tech students. Also, Orientation Programmes were conducted on August 13, 2021 to induct the 2021-2023 batch of M.Tech and M.Sc students and MS/PhD scholars admitted during July-Dec 2021 semester. The students and their parents were briefed about the academic programmes and the facilities available at IIT Tirupati. It was followed by an interactive session for the parents with the Director and the Deans of the Institute.

Students Corner

Freshers' Fest

An online fest was organized in collaboration with Tribevibe, Sunburn Company under Bookmyshow on August 21-22, 2021. Artists such as Yellow Claw, Anuv Jain, Taba Chake, Vivek Singh and others performed in this event.

Sarathi - An Initiative of Guidance and Counselling Unit (GCU)

To help students cope with their mental health issues, a number of counselling sessions were run by GCU. The sessions were conducted in-person as well as online in consultation with Prof Samiuallah and Ms. Bhooma Krishnan,

along with the counsellors from YourDost Pvt Ltd. A Sarathi room was set up in the permanent campus for an in-person counselling session. Sarathi also conducted webinars on the subjects of empowering oneself and suicide prevention to help students better understand their psychological health. Alongside, there was a Barefoot Counselling session conducted on December 1, 2021 for the faculty of IIT Tirupati. GCU also launched its official website: <https://iittp.ac.in/gcu>



Student Club Activities



Digital Wizard organised by Technical Club



Dance Club at IIT Tirupati



Artista Club's Activity in line with the Azadi ka Amrit Mahotsava

Editors

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