



Chaitanya Bharathi Institute of Technology

Research and Development Centre

Research and Entrepreneurship Hub

List of In House Faculty Research Projects

| S. No | Code | Name of the Principal Investigator (PI) / Co Investigator | Department | Name of the Project | Term of the Project |
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| 1. | CBIT/PROJ-IH/I057/ECE/D007/2024 | Dr. K Vasanth and Dr. C V Narasimhulu | ECE | Design of Automated Ground Station for Tracking LEO Orbit based Satellites Operating at VHF / UHF Frequencies | 2024-25 One Year |
| 2. | CBIT/PROJ-IH/I056/Maths/D005/2024 | Dr. Palle Kiran, Mr. M Amarnath | Mathematics | The Study of Bio-Thermal Convection in a Porous Medium Under Gravity Modulation | 2024-25 One Year |
| 3. | CBIT/PROJ-IH/I055/Maths/D004/2024 | Dr. V Sree Ramani, Mr. K Kalyan and Mrs. P Digna | Mathematics | Advanced Dual-Key Communication Model with Dynamic Encryption Strategies | 2024-25 One Year |
| 4. | CBIT/PROJ-IH/I054/Maths/D003/2024 | Dr. K Sharada and Dr. M Subhadra | Mathematics | Heat and Mass Transfer Flow of Non-Newtonian Fluids / Nano Fluid: A Numerical Study | 2024-25 One Year |
| 5. | CBIT/PROJ-IH/I053/Maths/D002/2024 | Dr. Lakshmi Sireesha Ch and Dr. Madhulika Das | Mathematics | Efficient Charging Station Deployment: Unsupervised Machine Learning Approaches for Electric Vehicle Networks | 2024-25 One Year |
| 6. | CBIT/PROJ-IH/I052/Mech/D013/2024 | Dr. Inturi Vamsi and Prof. P Ravinder Reddy | Mechanical | Development of a Machine-Learning Based Integrated Condition Monitoring Scheme for Multi-Component Fault Diagnostics of a Wind Turbine Gearbox | 2024-25 One Year |
| 7. | CBIT/PROJ-IH/I051/Mech/D012/2024 | Dr. G Laxmaiah, Dr. S Solomon Raj and Dr. Ch Indira Priyadarshinin | Mechanical | Design and Fabrication of Praheti Racing Car Chassis | 2024-25 One Year |
| 8. | CBIT/PROJ-IH/I050/Mech/D011/2024 | Dr. Ch. Indira Priyadarsini and Dr P Ravinder Reddy, Ms. P Anjani Devi, Dr. Rahul and Dr. T Sri Devi | Mechanical | Development of Program Assisted Mini E Cart | 2024-25 One Year |
| 9. | CBIT/PROJ-IH/I049/Physics/D005/2024 | Dr. Y Srinivasa Reddy, Dr. S. ShanmukharaoSamatham | Physics | Exploration of Strongly Correlated Magneto-Responsive Functionalities of High Entropy Double Layered Oxides | 2024-25 One Year |
| 10. | CBIT/PROJ-IH/I048/Chemical/D008/2024 | M Mallaiah, Dr. RupamSinha and Dr. K Prasad Babu | Chemical | Production of Biodiesel from the Waste Oils Esterification | 2024-25 One Year |
| 11. | CBIT/PROJ-IH/I047/Chemical/D007/2024 | Dr. Prasanna Rani R, Dr. Naga Prapurna and Prof. M MukundaVani | Chemical | Sustainable Bioplastic Films from Agri-Residues with Egg-shells as Plasticizer for Biodegradable Nursery Bags | 2024-25 One Year |
| 12. | CBIT/PROJ-IH/I046/SMS/D001 | Dr. T S Poornachandrika and Dr. S Solomon Raj | SMS | Digital Literacy and Digital Empowerment of Select Group of Weavers and Artisans with Reference to Pochampally Village, | 2024-25 One Year |

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| 13. | CBIT/PROJ-IH/I045/ECE/D006/2024 | Dr. S Radha, Dr. D Nagadevi | ECE | FD Handwashing Machine for Disease Preventive and Hygiene Practices During Pandemic | 2024-25 One Year |
| 14. | CBIT/PROJ-IH/I044/ECE/D005/2024 | Dr. B Khaleelu Rehman and Dr. P Anuradha | ECE | FPGA based Low Cost High Performance Health Monitoring System | 2024-25 One Year |
| 15. | CBIT/PROJ-IH/I043/AIDS/D001/2024 | Dr. D L Sreenivasa Reddy, Dr. G Mallikharjuna Rao | AI&DS | Intelligent Irrigation System | 2024-25 One Year |
| 16. | CBIT/PROJ-IH/I042/Civil/D004/2024 | Dr. Angshuman Das, Dr. Raj Kumar Varma and Dr. K Jagannadha Rao | Civil | Sustainable Ground Improvement by using Chemically Treated Shredded Tire and HDPE in sand | 2024-25 One Year |
| 17. | CBIT/PROJ-IH/I041/Civil/D003/2024 | Dr. Dudam Bharath Kumar, Dr. Koniki Srikanth and Dr. M Mukunda Vani | Civil | Parametric Study of Design of Sustainable Air Filter with MOF Coated Cotton Fiber for the Removal of Particulate Matter | 2024-25 One Year |
| 18. | CBIT/PROJ-IH/I040/Maths/D001/2024 | Dr. M Santoshi Kumari, Dr. P Samson Anosh Babu | Mathematics | A Hybrid Quantum Convolutional Neural Network for Skin Lesion Classification | 2024-25 One Year |
| 19. | CBIT/PROJ-IH/I039/Chemical/D006/2024 | Dr. Raj Kumar Verma, Dr. M Mallaiah | Chemical | Fabrication of Continuous Microreactor for the Electrochemical Reduction of CO ₂ into Formic Acid | 2024-25 One Year |
| 20. | CBIT/PROJ-IH/I038/Chemical/D005/2024 | Dr. M Mukunda Vani, Dr. D Bharath Kumar and Dr. R Prasanna Rani | Chemical | Green Synthesized Nanoparticle Coated Membranes for Microbial Fuel Cell Applications | 2024-25 One Year |
| 21. | CBIT/PROJ-IH/I037/Chemical/D004/2024 | Dr. P Madhuri, Dr. B V S Praveen, Dr. Raj Kumar Verma | Chemical | Pulp, Handsheet and Black Liquor Characterization of Hardwood Species (Beach Sheoak) after Kraft Cooking and Bleaching Process | 2024-25 One Year |
| 22. | CBIT/PROJ-IH/I036/Chemical/D003/2024 | Dr. P V Naga Prapurna, Dr. Prasanna Rani R and Dr. M Mukunda Vani | Chemical | Harnessing Natural Value-added Products from Floral Waste: Sustainable Approach Towards Zero-Waste | 2024-25 One Year |
| 23. | CBIT/PROJ-IH/I035/Chemical/D002/2024 | Dr. Prasanna Rani R, Prof. M Mukunda Vani and Dr. P V Naga Prapurna | Chemical | Valorization of Fruit Peels Waste as a Potential Source to Produce Cu Nanoparticles for in-situ Trapping of Nutrients for Modern Agricultural Practices | 2024-25 One Year |
| 24. | CBIT/PROJ-IH/I034/Physics/D005/2024 | Dr. B M. Pratima, Dr. M Bhanu Chandra, Dr. S Shanmukharao Samatham, Dr. Santhosh Kumar A, Dr.Chandra Sekhar | Physics | Surface Modification Of Timber With Au NP-Embedded TiO ₂ -SiO ₂ -Zno Thin Films | 2024-25 One Year |
| 25. | CBIT/PROJ-IH/I033/Physics/D004/2024 | Dr. B Sreenivasa Reddy, Prof. B Linga Reddy and Dr. Vinay Kumar Reddy | Physics | Studies on the Natural Background Gamma Radiation Levels in the Environs of Amrabad Uranium Mineralized area, Telangana State | 2024-25 One Year |
| 26. | CBIT/PROJ-IH/I032/Physics/D003/2024 | Dr. Santhosh Kumar A, Dr. Y Srinivasa Reddy, Dr. M Chadra Sekhar, Dr. M Pratima and Dr. M Subhadra | Physics | Development of ZnO Nanoarrays-Based Photodetectors for Enhanced Optoelectronic Performance | 2024-25 One Year |
| 27. | CBIT/PROJ-IH/I031/Physics/D002/2024 | Dr. S Shanmukharao Samatham, Dr. S Shravan Kumar Reddy, Dr. G Nataraju and Dr. | Physics | Examining the Pressure-Induced Quantum Phase Transition and Quantum Criticality in Doped Chiral Magnet MnSi | 2024-25 One Year |

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| | | Muralikrishna Patwari | | | |
| 28. | CBIT/PROJ-IH/I030/Mech/D010/2024 | Dr. Ashutosh Sahu, Dr. Ch. Venkata Sushma and Dr. Kiran Kumar Amireddy | Mechanical | Ti-based Bulk Metallic Glass Composite for Biomedical Applications | 2024-25 One Year |
| 29. | CBIT/PROJ-IH/I029/Mech/D009/2024 | K N V Sreedevi, Dr. Venkata Sushma Chinta | Mechanical | Heat Flow Analysis in Corrugated Plate Heat Exchanger using Nanofluids | 2024-25 One Year |
| 30. | CBIT/PROJ-IH/I028/Mech/D008/2024 | Dr. Nagini Yarramsetty, Dr. Venkata Sushma Chinta, Dr. S Narasimha Kumar and Dr. Kiran Kumar Amireddy | Mechanical | Design and Fabrication of Hybrid Solar Biomass Briquetting Machine | 2024-25 One Year |
| 31. | CBIT/PROJ-IH/I027/Mech/D007/2024 | Dr. Pullela Rama Lakshmi and Dr. S Santhi (MGIT), Dr. G Suresh Babu and Dr. P Ravinder Reddy | Mechanical | Accelerating Finite Element using Vedic Sutras: A Solution for Improved Mesh Convergence in Commercially Available Software | 2024-25 One Year |
| 32. | CBIT/PROJ-IH/I026/Mech/D006/2024 | Smt. Jyothirmayi Narne, Dr. B V S Rao | Mechanical | Development and Characterization of a Polymer based Composite Filament for 3D Printing Applications | 2024-25 One Year |
| 33. | CBIT/PROJ-IH/I025/Biotech/D002/2024 | Dr. Rajasri Yadavalli, Dr. K Dharmalingam | Biotech | Algae based Bioplastics for Sustainable Packaging | 2024-25 One Year |
| 34. | CBIT/PROJ-IH/I024/Civil/D002/2024 | Dr. Jnana Ranjan Khuntia, Dr. Kamalini Devi and Sri. Ramanarayan Sankriti | Civil | Experimental Investigation of Scouring Around a Bridge Pier | 2024-25 One Year |
| 35. | CBIT/PROJ-IH/I023/Chemical/D001/2024 | Dr. B V S Praveen, Dr. M Mallaiiah and Dr. Rupam Sinha | Chemical | Synthesis of Carbon Dots from Watermelon Peel for the Sensing of Cr (VI) in Water Samples and Photo-Detection Application | 2024-25 One Year |
| 36. | CBIT/PROJ-IH/I022/Mech./D005/2024 | Dr. Md Aleem Pasha, Mrs. V Sandhya and Mr. A Chandrakanth | Mechanical | Development and Characterization of Light Weight Self-Lubricated Metal Matrix Composites | 2024-25 One Year |
| 37. | CBIT/PROJ-IH/I021/Mech./D004/2024 | Sri. T N Aditya, Dr. P Ravinder Reddy | Mechanical | Fabrication and Characterization of Polymer Ceramic Composite Scaffolds for Bone Regeneration using 3D Printing | 2024-25 One Year |
| 38. | CBIT/PROJ-IH/I020/EEE/D001/2024 | Dr. T Sudhakar Babu, Dr. T Murali Krishna | EEE | Analysis on Recycle and Reuse of Aged Solar PV and Power Enhancement using Thermal Image Processing | 2024-25 One Year |
| 39. | CBIT/PROJ-IH/I019/ECE/D004/2024 | Dr. S Siva Priyanka, Dr. G Mallikharjuna Rao | ECE | Development of Smart Agro System for Indian Farmer using IoT and AI | 2024-25 One Year |
| 40. | CBIT/PROJ-IH/I018/ECE/D003/2024 | Dr. G Mallikharjuna Rao, Dr. T Aravinda Babu | ECE | Design and Implementation of IoT Enabled Smart Building Solutions for Enhanced Energy Efficiency | 2024-25 One Year |
| 41. | CBIT/PROJ-IH/I017/ECE/D002/2024 | Sri. T Sridher, Sri. K Lakshmanna and Mrs. D Sony | ECE | Machine Learning-Based Path Loss Prediction in Indoor and Outdoor Environments of Hyderabad | 2024-25 One Year |
| 42. | CBIT/PROJ-IH/I016/Chemistry./D004/2024 | Dr. N Mahender Reddy Dr. G V Ramesh, Dr. D Saritha and Dr. T V Surendra | Chemistry | Metal-doped Graphene-Based Nanocomposites as Photocatalysts for Wastewater Treatment | 2024-25 One Year |
| 43. | CBIT/PROJ-IH/I015/Chemistry./D003/2024 | Dr. T V Surendra, Dr. G V Ramesh, Dr. D Saritha and Dr. N Mahender Reddy | Chemistry | Heterogeneous Photocatalyst of Rare Earth based Material with Conjugated Polymer for the Water Remediation Process | 2024-25 One Year |

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| 44. | CBIT/PROJ-IH/I014/Chemistry./D002/2024 | Dr. D Saritha, Dr. Gubbala V Ramesh, Dr. N Mahender Reddy and Dr. T V Surendra | Chemistry | Fabrication of Na ₃ MM ₁ XO ₆ Electrodes for Na-Ion Battery Applications | 2024-25 One Year |
| 45. | CBIT/PROJ-IH/I013/Chemistry./D001/2024 | Dr. Gubbala V Ramesh Dr. D Saritha, Dr. T V Surendra and Dr. N Mahender Reddy | Chemistry | Engineering Nano-Catalysts: Copper-Based Alloys and Core-Shell Structures in CO ₂ Electroreduction | 2024-25 One Year |
| 46. | CBIT/PROJ-IH/I012/Mech./D003/2024 | Dr. Kiran Kumar Amireddy and Dr. Venkata Sushma Chinta | Mechanical | Natural Fibre Reinforced Composite Balustrades for Sustainable Building | 2024-25 One Year |
| 47. | CBIT/PROJ-IH/I011/Mech./D002/2017 | Dr.P. Ravinder Reddy | Mechanical | Design and development of components of artificial heart | 2017-2021 4 Years |
| 48. | CBIT/PROJ-IH/I010/Biotech/D002/2017 | Prof AVN Swamy | Bio-Technology | UASB Bioreactor-Skid mount | 2017 (4 months) |
| 49. | CBIT/PROJ-IH/I009/Civil/D001/2017 | Sri P.Srinivas Reddy | Civil | Mechanical Properties and Durability aspects of bacterial concrete | 2017-2019 2 Years |
| 50. | CBIT/PROJ-IH/I008/CSE/D003/2015 | Dr. C.R.K. Reddy and D. Jayaram | CSE | Text Extraction from hoardings (Text Recognition in Natural Images) | 2015-17 2 Years |
| 51. | CBIT/PROJ-IH/I007/CSE/D002/2015 | Dr. M. Swamy Das and Dr. C.R.K. Reddy | CSE | Digitalization of CBIT library old books and Journals | 2015-17 2 Years |
| 52. | CBIT/PROJ-IH/I006/CSE/D001/2015 | E. Padmalatha and Dr. C.R.K. Reddy | CSE | Classification through Mining Agents | 2015-17 2 Years |
| 53. | CBIT/PROJ-IH/I005/MBA./D001/2015 | Mrs. B Lavanya | SMS | Measuring the Role of Training and Development Activities in Enhancing Organizational Citizenship Behavior | 2015-17 2 Years |
| 54. | CBIT/PROJ-IH/I004/Mech./D001/2015 | Dr. P. Rama Lakshmi Mrs. P. Anjani Devi | Mechanical | Estimation of Interlaminar Shear Strength and Damage Factor in Glass/Epoxy Composite | 2015-2016 One Year |
| 55. | CBIT/PROJ-IH/I003/Physics/D001/2015 | Dr. B. Sreenivasa Reddy and Dr. K. Vinay Kumar Reddy | Physics | Studies on the radioactivity levels present in the building materials used in Greater Hyderabad. | 2015-16 9 months |
| 56. | CBIT/PROJ-IH/I002/ECE/D001/2013 | Dr. N. V. Koteswara Rao | ECE | Reconfigurable Microstrip Antennas for Cognitive radio and Mobile communications | 2013-14 1 Year |
| 57. | CBIT/PROJ-IH/I001/Biotech/D001/2013 | Dr. C.Obula Reddy | Bio-Technology | Design of Photo tubular Reactor for the Production of Biodiesel from Microalgae | 2013 (4Months) |