

International conference on Novel Materials and Technologies for Energy and Environmental Applications (NMTE²A 2022)



BITS Pilani
Hyderabad Campus

Organised by:
Department of Chemical Engineering
Birla Institute of Technology & Science, Pilani – Hyderabad Campus

CONTRIBUTED ORAL AND POSTER TALK SCHEDULE

Day 1 (Friday, February 18, 2022) Session 1: Catalytic Materials

Session Host: Prof. Dr. G. B. Radhika, Prof. Sounak Roy

Student Volunteer: Suresh K.

Meet Link: <https://meet.google.com/zuf-dyae-cxj> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT035	Sonication Aided Photocatalytic Degradation of Polyethylene	Hans Raj	2:30 pm - 2:40 pm
NMT051	A study on transition metals doped CeO ₂ -ZrO ₂ (CZ) nanocomposites for CO ₂ methanation	Yaddanapudi Varun	2:40 pm - 2:50 pm
NMT076	Enhanced Biosorption Of Cr(VI) From Contaminated Water Using Biodegradable Natural Polymeric Biosorbent	Baji Babu Kolimarla	2:50 pm - 3:00 pm
NMT081	Reforming of Model Biogas using Ni/CeO ₂ /γ-Al ₂ O ₃ Monolith Catalyst	Ramakrishna Chava	3:00 pm – 3:10 pm
NMT090	Sustainable Utilization of Rice Husk Derived Supported Ni Catalysts for Hydrogenation of Furfural and Levulinic acid.	Mohan Varkolu	3:10 pm – 3:20 pm
NMT176	Reactive Extraction of Caproic Acid using Trioctylamine + 2 Octanol system	Shambala Gadekar-Shinde	3:20 pm - 3:30 pm
NMT153	Mechanistic Insights of CO methanation over MgO using DFT	Shagun Mishra	3:30 pm - 3:40 pm

Day 1 (Friday, February 18, 2022) Session 2: Energy Storage Materials

Session Host: Dr. Sanjay Bhardwaj, Prof. N Suresh Kumar Reddy

Student Volunteer: C Jhansi

Meet Link: <https://meet.google.com/emd-krgz-eex> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT030	Critical Analysis Of Metal Doped B40 And B40- Fullerenes For Hydrogen Storage	Thodupunoori Harshavardhan	2:30 pm - 2:40 pm
NMT135	MEMS Based Energy Scavenger with Interdigitated Electrodes	Kamlesh Kahar	2:40 pm - 2:50 pm
NMT046	Tunable Physical Properties of Ba doped BiFeO3 Multiferroic Nanoceramics for Capacitor and Memory Storage Devices	Nellutla Jahangeer	2:50 pm - 3:00 pm
NMT072	The effective preparation of Lithium manganese oxide nanoparticles by wet media milling	Chetan M. Patel	3:00 pm – 3:10 pm
NMT079	Nanoflower Shaped ZnO Photoanode and Natural Dye Sensitizer Based Solar Cell Fabrication	Anitesh Anand	3:10 pm – 3:20 pm
NMT106	Study of Multiphase flow in anodic porous transport layer of PEM electrolysis	Kaustubh Sudhir Desai	3:20 pm - 3:30 pm
NMT128	Salt in Matrix for Thermochemical Energy Storage (TCES) - A Review	Dhammapada Mohapatra	3:30 pm - 3:40 pm

Day 1 (Friday, February 18, 2022) Session 3: Environmental Applications

Session Host: Prof. Ashish Kapoor, Prof. Srikanta Dinda

Student Volunteer: Sireesha Sadamanti

Meet Link: <https://meet.google.com/exv-ufpr-sie> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT154	Soil Contamination by Waste Transformer Oil	RichaTiwari	2:30 pm - 2:40 pm
NMT039	Green Synthesis of Fluorescent Carbon Dots from Annona reticulate Leaves as a Sensor for Chromium (III) ion	Bony K John	2:40 pm - 2:50 pm
NMT050	Effect of Physical Dimensions on Hydrogen Production by Alkaline Electrolysis	K Sreethan Reddy	2:50 pm - 3:00 pm
NMT062	Valorization of alkaline hydroxide modified coal fly ash to efficient adsorbents for enhanced carbon capture	Ramadurgam Aniruddha	3:00 pm – 3:10 pm
NMT063	Optimisation studies on Removal of Fluoride by Micellar Enhanced Ultrafiltration	D. shruthi keerthi	3:10 pm – 3:20 pm
NMT066	Water treatment using Microbial Desalination Cell – A process of Bio-Remediation	Shyamala M	3:20 pm - 3:30 pm
NMT091	The Influence of Support Arms on the Performance of Vertical Axis Wind Turbines	GSM van Stratan	3:30 pm - 3:40 pm
NMT103	Estimation of Dynamic Characteristics of a Wind Turbine Blade	Nachiket Avinash Patil	3:40 pm - 3:50 pm

Day 1 (Friday, February 18, 2022) Session 4: Modelling and Simulation

Session Host: Prof. M. Mukunda Vani, Prof. Vikranth Surasani

Student Volunteer: Dasika Prabhat

Meet Link: <https://meet.google.com/dci-gaeo-avd> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT009	Modelling the Viscoelasticity of Floating Membrane in Water Waves	Dr. Santanu Koley	2:30 pm - 2:40 pm
NMT016	Density Functional Theory Investigation of Triazole Substituted Nitro Borazine derivatives as High Energy Density Material	Mridula Guin	2:40 pm - 2:50 pm
NMT023	Study on utilization of Machine Learning techniques for Geological CO2 Sequestration simulations	Pradeep Reddy Puunam	2:50 pm - 3:00 pm
NMT075	Numerical simulations on the Performance of Savonius Turbines under the Influence of Deflectors in a Solar Chimney Power Plant	Pavitri Apparavoo	3:00 pm – 3:10 pm
NMT082	CFD study on the effect of air gap thickness in membrane performance across the flat sheet membrane in air-gap membrane distillation	Ashish V. Srivastava	3:10 pm – 3:20 pm
NMT087	Numerical Analysis of Exhaust Air Energy Extractor using Darrieus Vertical Axis Wind Turbine	Reuben Brandon Huan Chung Lee	3:20 pm - 3:30 pm
NMT117	State Estimation Algorithms for Electric Vehicle 48V Battery Management System	Madhuri Bayya	3:30 pm - 3:40 pm

Day 1 (Friday, February 18, 2022) Oral Session 5: Waste to Energy

Session Host: Dr. Niraj S. Topare, Prof. Ramesh Babu

Student Volunteer: Aniruddha R

Meet Link: <https://meet.google.com/yvu-xboy-qpn> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT007	Biofuel generation from food waste through immobilized enzymes on magnetic nanoparticles	Pranay Amruth Maraju	2:30 pm - 2:40 pm
NMT014	Modified low cost engineered biochar prepared from Neem de-oiled cake for heavy metal sorption	Sadamanti Sireesha	2:40 pm - 2:50 pm
NMT021	Selection Of Chemical Activating Agent For The Synthesis Of Activated Carbon From Coconut Shell For Enhanced Dye Treatment - Its Kinetics And Equilibrium Study	Osru. Lurdhrani Mercileen	2:50 pm - 3:00 pm
NMT026	Activated Carbons by Chemical Method from Saw dust: Synthesis, Characterization and Applications: A Review	<u>Baindla Satish</u>	3:00 pm – 3:10 pm
NMT059	Removal of heavy metals (Cu & Ni) from Wastewater using Rice husk and Orange peel as Adsorbents	Lakshmana Naik R	3:10 pm – 3:20 pm
NMT068	Solar Bioconversion of Food waste for production of Biogas	L Prashanth Naik	3:20 pm - 3:30 pm
NMT187	A Sustainable Solution for Degradation of Biodecomposable Waste - A Hybrid Model	Swaroop laxmi Mudliar	3:30 pm - 3:40 pm

Day 1 (Friday, February 18, 2022) Session 6: Functional Materials

Session Host: Dr. Ramya Araga, Prof. Harihara Venkatraman

Student Volunteer: P. Saikiran

Meet Link: <https://meet.google.com/soe-fxea-ocp> (2:30 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT018	Iron oxide nanoparticles synthesized via green route using seed extract of Amla and its application for dye removal from water	Dr. Anupam Agarwal	2:30 pm - 2:40 pm
NMT027	DFNS Based Lithium Silicate Nanosheets for High-Temperature Pre-Combustion CO ₂ Capture	Rajesh Belgamwar	2:40 pm - 2:50 pm
NMT029	Hydrothermal Synthesis and Characterization of nanocrystalline Zinc Vanadate (Zn ₂ V ₂ O ₈) on Graphene Oxide Scaffolds	Lakshmana Naik Ramavathu	3:00 pm – 3:10 pm
NMT045	Decolorisation of Congo red Synthetic Solution using Fe doped ZnO Nano Particles and Optimization using Response Surface Methodology	Yellankula Bhavani	3:10 pm – 3:20 pm
NMT067	Green Synthesis of Zinc Oxide Nano Particles and its Adsorptive Studies on Removal of Congo Red Dye	Kolluru Sree Manaswini	3:20 pm - 3:30 pm
NMT104	Processing of Nanocellulose Sheet for Capturing the Fine Particulate Matter	Pallavi G	3:30 pm - 3:40 pm

Day 1 (Friday, February 18, 2022) Session 7: Poster Session

Session Host: Dr. Ramendra Kishor Pal, Dr. Nilanjan Dey

Student Volunteer: Madahaviah

Meet Link: <https://meet.google.com/ovn-oohe-bif> (2:20 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT002	Bifurcation Analysis of a Polymerization Reaction in a CSTR	Aayush Milind Bendre	PPT:
NMT003	Thermal Simulation Of Compressor Fins By Varying Geometrical Shapes And Materials Using Ansys	Shanmukha Srivatsav Vakada	2:20 pm - 2:26 pm
NMT004	Kinetic modelling and simulations studies for propionic acid esterification process	Raju Kalakuntala	Q&A: 2:26 pm - 2:30 pm
NMT006	A mini-review on engineered biochars as emerging adsorbents in heavy metal removal	Santosh Sopanrao Khandgave	PPT: 2:30 pm - 2:36 pm
NMT008	Synthesis of Hierarchical Porous, Hydrophobic Aerogel through the Reinforcement of Bamboo-shaped Carbon Nanotubes in the Silica Matrix for Oil Spill Cleaning	D. Tapas Kumar Dora	Q&A: 2:36 pm - 2:40 pm
NMT013	Formulation of Lipase mediated silver derivatized poly(ϵ -caprolactone) films for antimicrobial coatings	Pranathi Tata	
NMT017	Adsorptive Removal of Cu(II) By Fly Ash Based Geopolymer Material	Nitish Kumar Gupta	PPT:
NMT024	Beneficiation of Low-Grade Limestone by Flotation	Sd Mahaboob Khaja Valli	2:40 pm - 2:46 pm
NMT032	Biocatalyst: Concept, Capability, Immobilization and Application	Md. Naveed Uddin	Q&A: 2:46 pm - 2:50 pm
NMT033	The Production And Characterisation Of Jamun (Syzygium Cumini) Fermented Beverage	Tamara Cooper	PPT: 2:50 pm - 2:56 pm
NMT036	Roughness Mass Transfer Function For An Electro-Chemical Column With Inserted Heptagonal Plate As Turbulence Promoter	K Uday Kumar	Q&A: 2:56 pm - 3:00 pm
NMT041	Synthesis of Perbutyric acid with Amberlyst catalyst in a Continuous Microreactor	Mr. K. Peddintaiah	
NMT060	A Review on Nano Composite Polymer Electrolytes for High Performance Batteries	N. Laxmiprasanna	PPT:

NMT064	Optimisation of Wire-EDM Process of Titanium alloy (Grade 5) using Taguchi's Method and Grey Relational Analysis.	Dheeraj Mathew Paulson	3:00 pm - 3:06 pm Q&A:
NMT074	Recent Progress in the Immobilization of Nano Photocatalyst for water treatment	Angel Joseph	3:06 pm - 3:10 pm
NMT084	Lattice Boltzmann Simulations for Convection – Diffusion Drying of Capillary Porous Media	Dasika Prabhat Sourya	PPT: 3:10 pm - 3:16 pm
NMT085	An Overview on Antimicrobial Nanoparticles for Food Preservation	Vishnu Choudhari	Q&A:
NMT086	Application of Multi Linear Regression (MLR) Analysis for Predicting Settlement Reduction Ratio (Sr) of Stone Column Reinforced Soft Ground	Hardik Gajjar	3:16 pm - 3:20 pm
NMT089	A comparative study on the Diauxic growth kinetics of the Pseudomonas species.	Kartikeya Sharma	PPT:
NMT092	Bimetallic Co-Ni, Ni-Mo and Co-Mo doped combustion synthesized TiO ₂ and Al ₂ O ₃ : Synthesis and Characterization	Siddharth Dhruva Parashar	3:20 pm - 3:26 pm Q&A:
NMT109	Recent Advances in Metal, Non-Metal Doped SnO ₂ Catalysts for Efficient Photocatalytic Hydrogen Production	Aashish Moses	3:26 pm - 3:30 pm
NMT110	Drying with Stabilizing and Destabilizing Thermal gradient Front Using LBM	Divyansh Pandey	PPT: 3:30 pm - 3:36 pm
NMT140	Waste to value added products: A review	Sakshi Bawa	Q&A:
NMT145	Use of Metakaolin with Polymer Modified Concrete in Repairing of Structures	Vaidehi A Dakwale	3:36 pm - 3:40 pm
NMT157	Energy Analysis For Low-Cost Houses Using Building Information Modelling	Kesavarapu Gowtham	PPT:
NMT163	Effect of Cu/Ag - K-OMS-2 on Soot Oxidation Activity	Nithya R	3:40 pm - 3:46 pm
NMT165	A review on Application of Nano-catalyst for Waste Cooking Oil Biodiesel Production	Niraj S. Topare	Q&A: 3:46 pm - 3:50 pm
NMT166	Thermogravimetric kinetic analysis Orange peel	<u>Vyshanavi Chilla</u>	PPT:
NMT171	Prediction of Solar Still Using Artificial Neural Network	Immanual R	3:50 pm - 3:58 pm
NMT180	Simulation of pyrolytic conversion of walnut shell waste to value added products	Bhushan Goklani	Q&A:
NMT044	A Critical Review on the Metal Oxide Nanocomposites for Gas Sensor Applications	B. Soundarya	3:58 pm - 4:00 pm

Day 2 (Saturday, February 19, 2022) Session 1: Catalytic Materials

Session Host: Prof. Dr. G. B. Radhika, Dr. Satyapaul Singh

Student Volunteer: Suresh K.

Meet Link: <https://meet.google.com/zuf-dyae-cxj> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT053	Autogenic Synthesis Cum 3D-assembly of Small-catalytic Gold Nanoparticles on Intact Eggshell as Resilient Portable Megacatalyst	Chandra Shekahr Bhatt	2:00 pm - 2:10 pm
NMT057	A Green Approach to Arsenic Removal Using ZnO Nanoparticles Synthesized from Acacia Catechu Leaf Extract	Karthik Chandan A	2:10 pm – 2:20 pm
NMT111	Catalytic Reduction of Organic Pollutants using Novel Ni-Ce-Zr Trimetallic Metal Organic Framework	Anjali Meshram	2:20 pm - 2:30 pm
NMT121	Transition Metal based carbon composite as a catalyst for the Adsorptive Desulfurization of tyre derived fuel oils	Raksha	2:30 pm - 2:40 pm
NMT155	Structural and Optical investigations in undoped and rare-earth doped Zinc oxide Nanoparticles for Photon Up-conversion based Applications	Waseem Ahmad Wani	2:40 pm - 2:50 pm
NMT124	Sustainable Use of Carbon Black (Soot) for the Cleaner Production of Value-added Products: A Review	Tejaswini Daida	2:50 pm - 3:00 pm

Day 2 (Saturday, February 19, 2022) Session 2: Energy Storage Materials

Session Host: Dr. Sanjay Bhardwaj, Prof. Balaji Krishnamurthy

Student Volunteer: C Jhansi

Meet Link: <https://meet.google.com/emd-krgz-eex> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT143	Supercapacitor Performance Analysis Using Liquid Polyamide-Based Flexible Paper Substrate	Himanshi Awasthi	2:00 pm - 2:10 pm
NMT151	Materials for Hydrogen Storage at Room Temperature - An Overview	Sitaram Meduri	2:10 pm – 2:20 pm
NMT152	Closed vessel tests on Pyrotechnic compositions	K. Sunil Kumar	2:20 pm - 2:30 pm
NMT156	Development of Paper Based Carbon Nanofibers/MnO ₂ Composite for Application in Microbial Fuel Cells	Jaypiriya U S	2:30 pm - 2:40 pm
NMT173	Miniaturized Paper Based Electrochemical Platform with rGO Electrodes for Uric Acid Detection	Ritesh Kumar Singh	2:40 pm - 2:50 pm
NMT037	Recent Advances in Bio-Based Thermal Energy Storage Material: A Future Perspective	Kiran Sai	2:50 pm - 3:00 pm

Day 2 (Saturday, February 19, 2022) Session 3: Environmental Applications

Session Host: Prof. Ashish Kapoor, Prof. Jaideep Chatterjee

Student Volunteer: Sireesha Sadamanti

Meet Link: <https://meet.google.com/exv-ufpr-sie> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT127	The AquaRegenerator – a standalone water generating device	Abishek Girish	2:00 pm - 2:10 pm
NMT069	Investigation of critical micelles concentration of saccharide-surfactant-polymer complex	Megha Singh	2:10 pm – 2:20 pm
NMT144	Entrepreneurial Finance in Clean Energy Technologies	Nivedita Sinha	2:20 pm - 2:30 pm
NMT113	Isolation Of Pectin From Peels Of Citrus Limetta In Different Organic And Inorganic Acid	Daida Tejaswini Reddy	2:30 pm - 2:40 pm
NMT174	Predicting The Biodegradation of the Azo Dye Tertracid Red E Using Residual Plots	Mukkeravamshi Krishna	2:40 pm - 2:50 pm
NMT168	Machine learning assisted screening framework for insecticidal peptides	Pranav Nambiar	2:50 pm - 3:00 pm
NMT172	Machine learning-based framework for predicting toxicity of ionic liquids	S Danush	3:00 pm - 3:10 pm
NMT150	A short review on recent advancements of dry reforming of methane (DRM) over pyrochlore materials	Jagadeesh. P	3:10 pm - 3:20 pm
NMT038	Recovery of Morpholine from Aqueous Streams by Reactive Extraction	Murali M	3:20 pm - 3:30 pm

Day 2 (Saturday, February 19, 2022) Session 4: Modelling and Simulation

Session Host: Prof. M. Mukunda Vani, Dr. Arnab Dutta

Student Volunteer: Dasika Prabhat

Meet Link: <https://meet.google.com/dci-gaeo-avd> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT148	Density Functional Theory Insights on Photocatalytic Ability of CuO/TiO ₂ and CuO/ZnO	Biplab Singha	2:00 pm - 2:10 pm
NMT170	Machine Learning models representing catalytic activity for direct catalytic CO ₂ hydrogenation to methanol.	Pallavi Vanjari	2:10 pm – 2:20 pm
NMT177	ML Based Catalyst Modelling for Photo-catalytic Reduction of CO ₂ to Methanol	Lakshmi Devi Voleti	2:20 pm - 2:30 pm
NMT179	CFD Simulation of hot spot in PEM fuel cell with diverging and converging flow channels	Ramakant Gadhewal	2:30 pm - 2:40 pm
NMT119	Multi-Element Airfoil Configuration for HAWT: A Novel Slot Design for Improved Aerodynamic Performance	Het Bhavsar	2:40 pm - 2:50 pm
NMT136	Modelling of Anaerobic Digester for the conversion of Organic Waste into Hydrogen & Methane	Sunil kumar Sahoo	2:50 pm - 3:00 pm

Day 2 (Saturday, February 19, 2022) Session 5: Waste to Energy

Session Host: Dr. Niraj S. Topare, Dr. Pankaj Kumar

Student Volunteer: Aniruddha R

Meet Link: <https://meet.google.com/vyu-xboy-qpn> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT159	Enhancing Sustainability of Natural Gas Value Chain via Waste Cold Recovery	Malayanur Srilekha	2:00 pm - 2:10 pm
NMT093	Extraction of eco-friendly biocomposites from Eulaliopsis Binata: Mechanical, Thermal and Anti-Bacterial studies.	Prabhu Teja	2:10 pm – 2:20 pm
NMT122	Delignification of Aloe Vera Leaf Rind using Choline-Chloride Based Deep Eutectic Solvent	Gunasekaran Rajeswari	2:20 pm - 2:30 pm
NMT125	Bioethanol Production Using Simultaneous Saccharification and Fermentation Process Using Sugar Mill Waste	Dr. S.V. Ambekar	2:30 pm - 2:40 pm
NMT126	Conversion of Plastic Waste to Fuel	Mehtab Singh Chouhan	2:40 pm - 2:50 pm
NMT146	Optimization of different polymer composites films for the removal of Chromium	Ch Sowmya	2:50 pm - 3:00 pm
NMT158	Impact of Thermal Pretreatment on Anaerobic Co-Digestion of Sewage Sludge and Landfill Leachate	Rishita Bonu	3:00 pm - 3:10 pm
NMT164	Composite Ash from Coal and Rice Husk Co-firing Plants: A Model Source to Produce Molecular Sieve 4A	Ayushi Mohan Kali	3:10 pm - 3:20 pm
NMT169	Techno-economic analyses for production of value-added hydrocarbons from lignin-derived bio-oil	Anant Kedia	3:20 pm - 3:30 pm

Day 2 (Saturday, February 19, 2022) Session 6: Functional Materials

Session Host: Dr. Ramya Araga, Dr. D. Purnima

Student Volunteer: P. Saikiran

Meet Link: <https://meet.google.com/soe-fxea-ocp> (2:00 pm - 4:00 pm)

Abstract ID	Title	Presenting Author	Time Slot
NMT115	Thermal Conductivity Enhancement of Magnetic Nanofluids for Energy Applications	Puppala Manoj Kumar	2:00 pm - 2:10 pm
NMT130	Characterization of Pineapple Leaf Fibers and Graphene Oxide Reinforced Rice Starch Bio Composite	<u>Bhadane Prathmesh</u>	2:10 pm – 2:20 pm
NMT175	Synthesis, Structural and Thermal investigation on $\text{LiMn}_{1.5}\text{Cu}_{0.5}\text{O}_4$ as cathode material for Li-ion Batteries	M. Aruna Bharathi	2:20 pm - 2:30 pm
NMT178	Design and evaluation of Nano-structured formulations of Rosuvastatin	Sadhana noothi	2:30 pm - 2:40 pm
NMT181	Dielectric Property and Electrical Conductivity of ZnS_PVK Nanocomposites	Durgesh Nandini Nagwanshi	2:40 pm - 2:50 pm
NMT105	Fabrication of Stable Underwater Superoleophobic Mesh with Graphene Oxide and Plasma Treatment	Mayuri Dhole	2:50 pm - 3:00 pm
NMT142	3D-Printed Closed Bipolar Electrochemiluminescence Device for Cholesterol Detection	Manish Bhaiyya	3:00 pm - 3:10 pm
NMT040	Sintering Characteristics of Plate-like Bismuth Titanate Ceramics with Preferred C - axis Orientation for Memory Storage Devices	Priyanka Mitra	3:10 pm - 3:20 pm