

SCHEDULE

Day 1: 21-04-2022

9.30 to 10.30 a.m.: Inauguration

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KEY NOTES

11.00 a.m. to 12.00 noon	<p><i>The role of Digitalisation, Heat pumps and renewable energy in decarbonising industrial process heat in New Zealand</i> Prof. Michael R W Walmsley (University of Waikato, New Zealand)</p>
12.00 noon to 1.00 p.m.	<p><i>Embracing OpenSource and Agile -ness in Chip Development</i> Dr. Neel Gala (CTO/Co-Founder at In Core Semiconductors)</p>

1.00 p. m. to 2.00 p.m.: Lunch Break

CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session I

Sustainable technologies for construction, Built environment & Manufacturing

2.00 p. m. to 3.00 p.m

Chair: Prof. (Dr.) K. S. Beena

Co-Chairs: Prof. (Dr.) Bindu C. S., Dr. Malavika Varma

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PAPER ID	DETAILS OF PAPERS
4	V Gayathri, Suguna Yesodharan, E P Yesodharan and Shijo Joseph. EFFECT OF OXIDANTS AND ANIONS ON SOLAR FENTON PROCESS FOR THE ECONTAMINATION OF WASTEWATER FROM TOXIC RHODAMINE B DYE POLLUTANT
15	Divya Nair, Gayathri P.V and Dr. Girish Gopinath. SOLAR ENERGY AS AN INEXPENSIVE ECO-FRIENDLY ADVANCED OXIDATION PROCESS FOR THE REMOVAL OF ANTIBIOTIC RESISTANCE BACTERIA
37	Leena Pauline and Kurian Joseph. HYDROTHERMAL CARBONIZATION OF OILY SLUDGE FOR ENERGY APPLICATIONS
59	Nithya Gopinath, Aysha Shirin and Madhu Gopal. REMOVAL OF MALACHITE GREEN DYE FROM AQUEOUS SOLUTION USING ORANGE PEEL AS LOW COST ADSORBENT
61	Karthika Vinayakumar, Ansari Palliyarayil, Pavan Seethur Prakash, Nallaperumal Shunmuga Kumar and Sanchita Sil. A FACILE ONE POT SYNTHESIS OF BIOCARBON DERIVED FROM WATER HYACINTH AND DEVELOPMENT OF PELLETS FOR CO2 CAPTURE APPLICATIONS

SCHEDULE

Stream I Keynote

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3.00 p.m. to 4.00 p.m.	<p style="text-align: center;"><i>Risk Assessment of Natural - Technological Accidents in the Framework of Climate Change</i> Prof. Valerio Cozzani (University of Bologna, Italy)</p>
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Stream II Invited Talk

meet.google.com/zdt-tdpu-xtq

3.00 p.m. to 4.00 p.m.	<p style="text-align: center;"><i>Radio Frequency Technology Innovations for a Connected World</i> Dr. K. J. Vinoy (Indian Institute of Science, Bangalore)</p>
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CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session II

***Innovative Technologies for Land & Water Transportation,
Sustainable Technologies for construction, Built environment & Manufacturing***

4.00 p.m. to 5.30 p.m.

Chair: **Prof. (Dr.) A. Mathiazhagan**

Co-Chairs: **Dr. Favas T. K., Mr. Akram P. A.**

meet.google.com/nqs-eqxz-eto

PAPER ID	DETAILS OF PAPERS
2	Gaurav Tehlan and Satheesh Babu P K THE CONCEPT DESIGN OF HYBRID WIND - SOLAR FERRY FOR INLAND WATERWAYS OF KERALA
14	Dr. Rameesha TV, Kunal N NTiwari, Akhil Balagopalan and Prof. P Krishnankutty MANEUVERING OF A SHIP IN WAVES- AN EXPERIMENTAL STUDY
25	Vivek K. Sidhan, Sobha Cyrus, Roy M. Thomas and Benny Mathews Abraham. SUSTAINABLE VALUE ADDITION OF EFFLUENT TREATMENT PLANT SLUDGE IN CONSTRUCTION – A REVIEW
27	Saranya Ullas and Bindu C S. CEMENT/CEMENTITIOUS TREATED LAYERS IN FLEXIBLE PAVEMENTS – A REVIEW
43	Nayana R, N Sunilkumar and Deepa Balakrishnan. BIOMASS ASH AS SUPPLEMENTARY CEMENTITIOUS MATERIAL AND IN GEOPOLYMER CONCRETE: A REVIEW
5	Nivin Vincent and Franklin Robert John SUSTAINABILITY APPROACH AND STRATEGIES TOWARDS GREEN ELECTRICAL DISCHARGE MACHINING OF ADVANCED METALS AND SUPER ALLOYS: A REVIEW
47	Hareesh B and Jacob Elias DEEP CRYOGENIC TREATMENT AS SUSTAINABLE AFFORDABLE METHOD FOR POWDER COMPACTED METAL PARTS
66	Sruthi Vijayakumar, Roy M Thomas and G Madhu REMOVAL OF FLUORIDE FROM GROUNDWATER USING SPENT COFFEE WASTE
22	Biju P. Varghese, Dipak Kumar Sahoo NON-STRUCTURAL USE OF COARSE RECYCLED CONCRETE AGGREGATE: SOLID MASONRY BLOCKS
44	Balamurali Krishna, V. Sivanandan Achari CORROSION INDICES FOR INDUSTRIAL SUITABILITY OF GROUNDWATER FROM A BLACK SAND PLACER DEPOSITORY OF KERALA, INDIA

SCHEDULE

Stream I - Session III

Renewable Energy Systems & Storage

4.00 p.m. – 5.30 p.m.

Chair: **Prof. (Dr.) Asha Elizabeth Daniel**

Co-Chairs: **Dr. P. G. Latha, Dr. K. Vinida**

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PAPER ID	DETAILS OF PAPERS
10	Afia Karim, P.G Latha, Reenu Bose AN EFFICIENT SYNCHRONOUS BUCK CONVERTER CONTROL FOR EV BATTERY CHARGING FROM SOLAR PV ARRAY
12	Sanjna Salim, C A Babu A TUNING GUIDE FOR RESONANT CONTROLLER FOR A GRID CONNECTED INVERTER
21	Keerthana K., Manilal A M. BIOMASS GASIFICATION SYSTEM FOR HYDROGEN PRODUCTION
36	Govind S. Menon, Jacob Elias, S. Murali DEVELOPMENT AND EXPERIMENTATION OF A HYBRID PHOTOVOLTAIC THERMAL (COGENERATION) SYSTEM
57	Romy George, K. Vinida A DC-DC BOOST CONVERTER WITH A WIDE INPUT RANGE AND HIGH VOLTAGE GAIN WITH LOW INPUT CURRENT STRESS FOR FUEL CELL VEHICLES
62	Saju S B, K. Vinida A MODIFIED SEPIC-BASED HIGH STEP-UP DC-DC CONVERTER WITH COUPLED THREE WINDING INDUCTOR FOR RENEWABLE ENERGY APPLICATIONS
63	Arun M S, Anju G Pillai HIGH-EFFICIENCY HYBRID HIGH STEP-UP DC-DC CONVERTER FOR DISTRIBUTED PV GENERATION SYSTEMS

SCHEDULE

Day 2 : 22-04-2022

INVITED TALK

9.30 a.m. to 10.15 a.m.	<p><i>Polymeric medical devices: Some recent developments</i> Dr. Roy Joseph, Scientist G. Department of Medical Devices Engineering, Biomedical Technology Wing, , SreeChitraTirunal Institute for Medical Sciences and Technology, Trivandrum meet.google.com/jps-hkxm-izw</p>
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CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session IV a

Material for Industry 4.0 & Medical Applications

10.45 a.m. to 11.45 a.m.

Chair: **Prof. (Dr.) Sunil K. Narayanankutty**

Co-chair: **Dr. Jayalatha Gopalakrishnan**

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PAPER ID	DETAILS OF PAPERS
41	N. S. Sumitha, Nidhi G. Krishna, G. S. Sailaja ACTIVE ON-DEMAND DOXORUBICIN DELIVERY BY MAGNETICALLY TRIGGERABLE CHITOSAN MEMBRANES FOR CUSTOMIZED CANCER THERAPY
42	Sirajunnisa P., G. S. Sailaja NANOSTRUCTURED BIOCOMPATIBLE ORGANOBENTONITE BASED HYBRID MATERIAL FOR THERAPEUTIC APPLICATIONS
49	Reshma Varghese, Jayalatha Gopalakrishnan POLYURETHANE NANOCOMPOSITES FOR EMI SHIELDING APPLICATIONS: A REVIEW
50	Akhila R., Jayalatha Gopalakrishnan NANOCELLULOSE BASED MATERIALS FOR DYE ADSORPTION- A SHORT REVIEW
51	Divya Krishnan, Jayalatha Gopalakrishnan, Priya Rose MXENES BASED ELECTRODE MATERIALS FOR SUPERCAPACITOR APPLICATIONS: A REVIEW

SCHEDULE

CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session IV b

Material for Industry 4.0 & Medical Applications

11.45 a.m. to 12.45 p.m.

Chair: **Prof. (Dr.) S. Jayalekshmi**

Co-chair: **Dr. Dhannia T.**

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PAPER ID	DETAILS OF PAPERS
23	Raichel Mary Lopez, Rajalakshmi A S, Archana Raveendran, V Sivanandan Achari JOHN ISOTHERM ANALYSIS OF MICROPOROUS AND MESOPOROUS MATERIALS
34	Sindhu Josepha,b, A.S. Rajalakshmia, Raichel Mary Lopeza S. Jayasreea, O.M. Shibina, V. Sivanandan Acharia * MESOPOROUS NANOCRYSTALLINE TIO ₂ BY GREEN SYNTHESIS FOR THE CATALYTIC DEGRADATION OF PHENOL
52	Anu Tharu P., Jaya M. Soney, Benoy M. D., Dhannia T. EFFECT OF TEMPERATURE ON THE STRUCTURAL AND OPTICAL PROPERTIES OF PURE ANATASE TiO ₂ NANOPARTICLES FOR ENHANCEMENT OF UV SHIELDING PERFORMANCE
53	Malu Sasidharan, Dhannia T. PH DEPENDENT STRUCTURAL AND OPTICAL STUDIES O GREEN SYNTHESISED MN ₃ O ₄ NANOPARTICLES
54	Resmi V. R., Jaya M Soney, Dhannia T. EFFECT OF TEMPERATURES ON THE STRUCTURAL AND OPTICAL PROPERTIES OF ZINC OXIDE NANOPARTICLES FOR UV FILTER APPLICATIONS

12.45 p.m. to 2.00 p. m.: **Lunch Break**

SCHEDULE

CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session V

Safety Management & Fire Protection in Industries

2.00 p.m. to 3.30 p.m.

Chair: **Prof. (Dr.) G. Madhu**

Co-chairs: **Prof. (Dr.) V. R. Renjith, Ms. Jiji Varghese**

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PAPER ID	DETAILS OF PAPERS
6	Anilett Benny, V R Renjith DEVELOPING A BOW TIE MODEL FOR BLOWOUT SCENARIO IN OIL WELL OPERATIONAL PROCESS
11	Rakesh Kumar , Dr Bikram Singh Dr.V R Renjith APPLICATION OF FUZZY LOGIC BASED RISK ASSESSMENT MODEL TO COMPUTE RISK REDUCTIO FACTOR OF SAFETY INSTRUMENTED FUNCTIONS IN A NUCLEAR REACTOR
19	Shafzana P S , Dr.Dipak Kumar Sahoo SAFETY MANAGEMENT SYSTEM IN MODULAR INTEGRATED CONSTRUCTION PROJECTS
24	Suresh.G, VR Renjith, AB Bhasi PRIORITISATION OF FACTORS INFLUENCING WORKERS' RISK TOLERANCES IN PROCESS INDUSTRIES BY INTERVAL-VALUED INTUITIONISTIC FUZZY ANALYTIC
46	Greeshma Benoiet, RaufEEK M.H., Prof.Dr. V R Renjith COMPARITIVE RISK EVALUATION OF RLNG CROSS-COUNTRY PIPELINE NETWORK USING FUZZY COPRAS AND COPRAS MCDM APPROCH HIERARCHY PROCESS
55	Ejjas Ahammeda, Soman A.R., Abdul Samad P.A., Alvin, Alexa CONSEQUENCE ASSESSMENT AND MITIGATION OF ACCIDENTAL CHLORINE RELEASE FROM A STORAGE FACILITY
56	Sivi Varghese, V.R Renjith PREDICTION OF THERMAL HAZARDS AND ESTIMATION OF FIRE SAFETY DISTANCE OF PROCESS INDUSTRY POOL FIRES

SCHEDULE

CONTRIBUTED PAPER PRESENTATIONS

Stream I - Session VI

Computational Techniques for Engineering

2.00 p.m. to 3.30 p.m.

Chair: **Prof. (Dr.) Jayadas N. H.**

Co-chairs: **Prof. (Dr.) Biju N., Dr. Harikrishnan S.**

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PAPER ID	DETAILS OF PAPERS
16	Stephy James, V.R. Renjith AN INVESTIGATION ON THE USEFULNESS OF SOFT COMPUTING TECHNIQUES IN RISK ANALYSIS
18	Sandra Ann Jacob, Soloman P.A. DYNAMIC SIMULATION OF DEMETHANIZER COLUMN
20	Dhanya Menon., P.A. Soloman KINETIC-BASED SIMULATION OF HYDROGEN PRODUCTION VIA STEAM REFORMING OF BIOGAS
58	PraveenVijayan, G K Thampi, A Palacios NUMERICAL ANALYSIS OF BUOYANCY DOMINATED HORIZONTAL JET FLAME LENGTH AT NORMAL AND SUB ATMOSPHERIC PRESSURE CONDITIONS
64	Chitra N, A. Mathiazhagan, Rajesh. P. Nair MECHANICAL BEHAVIOR OF NANOPHASED SANDWICH COMPOSITES USING FEM- A REVIEW
67	Heera Susan John, Rohith N.R , Joshy P.J. and Tide P.S. AN INVESTIGATION OF AIR-CORE VORTEX FORMATION IN HEMISPHERICAL TANKS
40	Anagha Raveendran, V R Renjith, G Madhu DYNAMIC ANALYSIS OF DOMINO EFFECT FREQUENCIES THROUGH DYNAMIC BAYESIAN NETWORK-A CASE STUDY

SCHEDULE**Day 2 : 22-04-2022****CONTRIBUTED PAPER PRESENTATIONS****Stream II - Session I*****Computing for Industry 4.0*****9.30 a.m. to 11.00 a.m.**Chair: **Dr. Sonal Yadav** (Assistant Professor, NIT, Raipur)Co-chair: **Prof. (Dr.) Vinod P.**meet.google.com/zdt-tdpu-xtq

PAPER ID	DETAILS OF PAPERS
13	Anoop Thomas, Jobin K Antony , Ananthu Aji , Anna Koshy Bhavana Krishna, Caroline Jaibee A NOVAL METHOD TO DETECT POTHOLE USING YOLO FOR AUTONOMOUS VEHICLES
17	Neethu K, Rose George Kunthara, Rekha K James NETWORK ON CHIP BASED DEEP NEURAL NETWORK ACCELERATORS
45	Ashwin Anil , Muhammed Ayimen Abdul Latheef , Daleesha M Viswanathan REGULAR EXPRESSION-BASED PATTERN EXTRACTION FOR ONLINE ATTENDANCE DATA
48	Sonia Abraham, Rekha K. James TIME DOMAIN DATA AUGMENTATION TRANSFORM WITH WINDOW WARPING IN ACTIVITY RECOGNITION
60	Veena R, Nithya Gopinath, G Madhu AIR QUALITY MODELLING OF KOCHI CITY, INDIA USING ARTIFICIAL NEURAL NETWORK AND ADAPTIVE NEURO-FUZZY INFERENCE SYSTEM
65	Saurabh Sahadev, G Madhu, Roy M Thomas MODELLING OF AN ACTIVATED SLUDGE PROCESS USING MULTI-LAYER PERCEPTRON NEURAL NETWORKS

11.00 a.m. to 11.15 a.m: **Tea Break****INVITED TALK**

11.15 a.m. to 12.15 p.m.	<i>Multimedia Quality Assessment</i> Dr. Vinit Jakhetiya Indian Institute of Technology, Jammu meet.google.com/zdt-tdpu-xtq
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12.15 p.m. to 1.00 p.m: **:Lunch Break**

SCHEDULE

CONTRIBUTED PAPER PRESENTATIONS

Stream II - Session II

VLSI and Embedded System

1.00 p.m. to 2.30 p.m.

Chair: **Dr. Simi Zarine Sleeba** (Assistant Professor, Department of ECE, RSET)

Co-chairs: **Prof. (Dr.) Rekha K. James, Dr. Indu I.**

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PAPER ID	DETAILS OF PAPERS
3	Sumi Baby, George Bonny Vincent , Anju Pradeep WORK FUNCTION DEPENDENCE OF SILICON CHARGE IN ZENER DIODE PARTIALLY DEPLETED SILICON ON INSULATOR
9	Bhavani Krishna J.S, Hridya Harikumar, Shikha U.S, Rekha James, Anju Pradeep ENHANCED PERFORMANCE OF TFET THROUGH DUAL MATERIAL GATE COUPLING
26	Athul Raj M R, George Bonny Vincent, Ashwin P Pramod, Akshay Sarman, Rose George Kunthara and Rekha K James ANALYSIS OF ROUTING ALGORITHMS IN BUFFERLESS 3D MESH NoC
28	Alvin Santhosh, Benoy Shah, Celes Cleatus, Amal, Akshai Dileep, Deepa Sankar SMART WHEEL CHAIR
29	Anil Johnny, Dr. K. N. Madhusoodanan WHOLE SLIDE IMAGES TO MINIATURE PROBABILITY MAPS USING EDGE COMPUTING AND RESOURCE LIMITED EMBEDDED DEVICES

KEY NOTE

3.00 p.m. to 4.00 p.m	<p style="text-align: center;"><i>Threat Intelligence: open issues and emerging research lines</i></p> <p style="text-align: center;">Dr. Corrado Aaron Visaggio University of Sannio, Italy meet.google.com/zdt-tdpu-xtq</p>
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4.00 p.m. to 4.15 p.m: **Tea Break**

4.15 p.m: **Valedictory Session**
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