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| Lingua di pubblicazione | Inglese  |
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| Nota di contenuto       | Cover -- Half Title -- Title Page -- Copyright Page -- Table of contents -- Preface -- Introduction -- List of reviewers (TRACK WISE) -- Organizing committee -- International advisory committee -- Acknowledgments -- Chemical engineering track -- Comparison of three solvents for extractive distillation of ethanol and water system -- Photocatalytic degradation of Congo red dye using Visible Light Active (VLA) carbon doped titanium dioxide nanocomposite and its kinetics -- Treatment of congo red dye wastewater using spinel catalysts -- Analysis of swelling and de-swelling kinetics and water absorbency in ionic medium for (Acrylamide-co-Acrylic Acid) hydrogel -- Synthesis of silver nanoparticles by using soluble starch and its application in detection of Hg <sup>2+</sup> ions from wastewater -- Co <sub>3</sub> O <sub>4</sub> /-Al <sub>2</sub> O <sub>3</sub> as aheterogeneous catalyst for ozonation of dye wastewater -- Asustainable bioprocess for lipase production using seawater and the byproduct obtained from coconut oil industries -- Civil engineering track -- Free vibration analysis of laminated composite spherical shells: |

An analytical solution -- Scientometric study and visualization of constructed wetlands (1998-2017) -- Sensitivity of lateral load patterns on the performance assessment of semi-rigid frames -- Impact of angle of incidence in rectangular liquid storage tanks -- Assessing the indoor environmental quality of municipal schools in Ahmedabad -- Modelling of daytime incoming longwave radiation under cloudy sky over a semi-arid agro-climatic zone of India -- Use of BIM and augmented reality in facility management phase -- Developing household level drinking water disinfection unit using copper -- Accessibility of BRTS station in Ahmedabad city using GIS: A case study -- Shear strength parameters of soil and banana fiber mix. Impact of temperature and duration of calcination of metakaolin on the compressive strength of metakaolin incorporated concrete -- Numerical analysis of shape-memory-alloy-wire based smart natural rubber bearing -- Techniques used for structural health monitoring and its application: A review -- Characterization of air based pneumatic damper for seismic response control -- Generation of wind time history data for nonlinear wind analysis of buildings -- Implication of effective length factor on multi-storied reinforced concrete building design -- Computer science and engineering track -- Enhancement of policer algorithm on fast-path using VPP -- Efficient occluded face detection and classification using artificial intelligence -- Image Super-Resolution through quick learning from self-examples -- Multimodal mini U-net for brain tumor segmentation -- Electrical engineering track -- Testing of modern distance protection scheme on 12-pulse FCTCR compensated transmission line -- Solving of economical load dispatch using efficient group leader optimization technique -- Artificial neural network based space vector PWM controller applied to three-level NPC shunt active power filter -- Generalized sector detection scheme for space vector modulation based modular multi-level inverter -- Effect of synthetic inertia controller on frequency response in a multi-machine power system with high penetration of renewable energy sources -- Analyzing the effect of circuit parasitic on performance of DC-DC buck converter using circuit averaging technique -- Hybrid technique for DC-link capacitor voltage balancing in entire operating range of five-level NPC inverter using redundancy of switching states and two quadrant DC-DC converter -- Electronics and communication engineering track.

Performance evaluation of MIMO under time-varying and spatially correlated channels with feedback delay -- TAP (Time, Area, and Power) trade off at lower geometries in data center ASIC: A deep dive into executional view and results -- Design, development and testing of SmaTra: A smart traffic light control system -- Implementation and defect analysis of QCA based reversible combinational circuit -- Design of dual band stacked microstrip antenna for IRNSS receiver application -- Estimation of defocus blur radius using convolutional neural network -- Instrumentation and control engineering track -- Powertrain modelling and range analysis for all terrain electric vehicles -- Input fault detection using ensemble kalman filter for nonlinear descriptor systems -- Smart irrigation system through mobile app -- Mechanical engineering track -- Study on microstructural and mechanical properties of dissimilar metals joining using FSW -- Design of automatic vertical storage system -- Single layer graphene as nanofiller to enhance mechanical properties of matrix material -- Synthesis, characterization and applications of magnetorheological fluid -- FE simulation of metal spinning process using LS-DYNA software -- Strain based and stress based fracture forming line for single point incremental forming -- Experimental investigation of

nucleate boiling over a smooth and micro-grooved cylindrical surface -- Design of trolley attaching mechanism for unit load automated guided vehicle system -- Process capability analysis of worm gearbox manufacturing -- Design and development of quality system for gear case casting -- Numerical study of resin flow in VARTM composite manufacturing process -- Enhancement in mechanical strength of knob of molded case circuit breaker -- Design and development of double stage cyclone dust collector for incinerator.

Dynamic modelling of a projectile launcher with controlled double inverted pendulum -- Experimental study on effect of tool diameter on thickness, height and geometric accuracy of flange in hole flanging using single point incremental forming -- Numerical simulation to study fluid flow and heat transfer characteristics of conical spiral tube -- Electromagnetic field simulation of microwave heating in microwave oven -- Performance evaluation of downdraft gasifier for 'refuse derived fuel' -- Author Index.

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## Sommario/riassunto

This volume contains a selection of papers presented at the 7th Nirma University International Conference on Engineering NUiCONE 2019'. This conference followed the successful organization of four national conferences and six international conferences in previous years. The main theme of the conference was Technologies for Sustainable Development, which is in line with the SUSTAINABLE DEVELOPMENT GOAL established by the United Nations. The conference was organized with many inter-disciplinary technical themes encompassing a broad range of disciplines and enabling researchers, academicians and practitioners to choose between ideas and themes. Besides, NUiCONE-2019 has also presented an exciting new set of events to engage practicing engineers, technologists and technopreneurs from industry through special knowledge sharing sessions involving applied technical papers based on case-study applications, white-papers, panel discussions, innovations and technology products. This proceedings will definitely provide a platform to proliferate new findings among researchers. Advances in Transportation Engineering Emerging Trends in Water Resources and Environmental Engineering Construction Technology and Management Concrete and Structural Engineering Futuristic Power System Control of Power Electronics Converters, Drives and E-mobility Advanced Electrical Machines and Smart Apparatus Chemical Process Development and Design Technologies and Green Environment Sustainable Manufacturing Processes Design and Analysis of Machine and Mechanism Energy Conservation and Management Advances in Networking Technologies Machine Intelligence / Computational Intelligence Autonomic Computing Control and Automation Electronic Communications Electronics Circuits and System Design Signal Processing

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