PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE
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Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the academic Year 2019-2020.

Sl.NO	Name of the Teacher	Title of the Book/ Conference paper
1.	K.Kalaiselvi	A new topology of multiport five level inverter with reduced number of switches
2.	Dr.A.Parthasarathy	An efficient direct mppt for pv system under extremely fast changing irradiance
3.	M. Earnest Stephen Gnanadoss	An over view on “application of nanotechnology in civil engineering
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5.	D.Thenmozhi	Investigation on concrete using e waste and micro silica
6.	S.Senthil Kumar	Iot based solar panel fault monitoring and control
7.	M.Suganya	Production of milky mushroom spawn and comparing the cultivation of milky mushroom using ricestraw, sugarcane baggase, vermicompost and kitchen compost
8.	M. Suganya	Removal of lead and zinc in contaminated soil by phytoremediation method using sunflower plant at dindugal
9.	M.Suganya	Treatment of municipal wastewater from vellakkal dumping site by electrocoagulation process
10.	N. Aathiseshan	Treatment of leachate from avaniyapuram dumping site using batch reactor

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13th & 14th March 2020

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ICEEEI02: A NEW TOPOLOGY OF MULTIPORT FIVE LEVEL INVERTER WITH REDUCED NUMBER OF SWITCHES

[1]S.Radha Krishnan & [2]K.Kalaiselvi

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[2]Associate Professor & Head, Dept of Electrical and Electronics Engineering, Pandiyan Saraswathi Yadav Engineering College, Sivagangai

Abstract: Presents a five-level multilevel inverter with reduced switching count, discussing its design features which contribute to less switching losses and Total Harmonic Distortion for motor drives .The proposed multilevel inverter in its circuit layout has solved the challenges of using more than one independent DC sources and many power components to achieve 5 -level voltage with less harmonic contents, and thus the conduction and switching losses are reduced.

It is depicted that the design produces the output with THD in a recommended standard range, which ensure reasonable voltage stress to motor bearings. To demonstrate these contributions in real time, experiments on the circuit design based on nonlinear constant load have to beperformed. Also in future researches, this THD can be improved more by the use of another digital modulation control technique.

Keywords: Total Harmonic Distortion (THD), Five-level multilevel inverter.

ICEEEI03: A NOVEL TPC CONVERTER FOR HYBRID RENEWABLE ENERGY SYSTEM

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Abstract: This project presents the design, modeling and control of a three-port (TPC) isolated dc-dc converter based on interleaved-boost-full-bridge with pulse-width-modulation and phase-shift control for hybrid renewable energy systems. In the proposed topology, the switches are driven by phase-shifted PWM signals, where both phase angle and duty cycle are controlled variables. The power flow between the two inputs is controlled through the duty cycle, whereas the output voltage can be regulated effectively through the phase-shift. The primary side MOSFETs can achieve zero-voltage switching (ZVS) operation without additional circuitry. Additionally, due to the ac output inductor, the secondary side diodes can operate under zero current switching (ZCS) conditions. In this work, the operation principles of the converter are analyzed and the critical design considerations are discussed. The dynamic behavior of theproposed ac inductor based TPC is investigated by performing state-space modelling. The experimental results show that the two decoupled control variables achieve effective regulation of the power flow among the three ports.

Keywords: Interleaved-boost-full-bridge, Zero current switching (ZCS).

ICEEEI01: AN EFFICIENT DIRECT MPPT FOR PV SYSTEM UNDER EXTREMELY FAST CHANGING IRRADIANCE

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[2]Professor, Dept of Electrical and Electronics Engineering, Pandiyan Saraswathi Yadav Engineering College, Sivagangai.

Abstract: Photovoltaic cells require of Maximum Power Point Tracking (MPPT) algorithms to ensure the amount of power extracted is maximized. True seeking, direct duty cycle control MPPT algorithms are a simple and straightforward solution that can provide high tracking efficiency. In these algorithms the duty cycle is traditionally modified to reach a new steady state prior performing a new MPPT iteration. Therefore, the MPPT update period must be larger than the converter's settling time to reach a new steady state, which limits the dynamic trackingperformance. This work proposes a novel direct duty cycle control method that does not require the converter to achieve steady state in between MPPT updates. The proposed method benefits from the natural oscillations occurring in the converter to obtain extreme dynamic tracking improvements while maintaining simple implementation with no need of employing temperature or irradiance sensors. The scheme being introduced combines MPPT concepts with large-signal geometric control to achieve a reliable, high-performance solution very suitable for applications with rapidly changing irradiance such as wearable technology and rooftop EV. The proposed onevalidated by simulations and experimental results.

Keywords: Maximum Power Point Tracking (MPPT), Duty cycle, Irradiance sensors.

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[3]Assistant Professor, Dept of Electronics and Communication Engineering, Sree Sowdambika College of Engineering, Tamilnadu, India

Abstract: The monitor the crop field using sensors. The identify temperature & moisture level of the soil.The send the data of sensor to node mcu & send to the adafruit IO to display the data & to ON/OFF the motor and stored in database after that data processing and decision making is done based on threshold value & automatic irrigation is done. The retrieve the data from the sensor for every 5 sec for monitoring the field.

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Keywords: Monitor,Threshold value

ICECE106: APPLICATIONS OF COMPLEX ANALYSIS IN ELECTRONICS ENGNEERING

[1]Shunmugha Sundaram.S,[2]Earnest Stephen Gnanadoss.M

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[2]Assistant Professor, Dept of Physics, Pandian Saraswathi Yadav Engieering College, Sivagangai, Tamilnadu, India.

Abstract: Complex analysis is a mathematical tool as extensive applications in mathematics, physics and engineering. Complex numbers are used to analyzing and understanding alternating signals much easier. In electrical engineering, the Fourier transform is used to analyze varying voltages and currents. The treatment of resistors, capacitors, and inductors can then be unified by introducing imaginary, frequency-dependent resistances for the latter two and combining all three in a single complex number called the impedance. The complex analysis use is also extended into digital signal processing and digital image processing, which utilize digital versions of Fourier analysis (and wavelet analysis) to transmit, compress, restore, and otherwise process digital audio signals, still images, and video signals. In this mathematical concept we try to is used in 3-D designing of electrical network both AC & DC circuits.

Keywords: Complex analysis, 3-D AC & DC Circuits.

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ICCE115: AN OVER VIEW ON "APPLICATION OF NANOTECHNOLOGY IN CIVIL ENGINEERING"

[1]B. Prakash, [2]M. Earnest Stephen Gnanadoss & [3] M.A.Jothi Rajan

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[3] Professor & Project Advisor, TNSCST, DOTE Campus Chennai-22

Abstract: Nanotechnology is one of the most active research areas that encompass a number of disciplines, including civil engineering and construction materials. Nano-silica addition to cement based materials can also control the degradation ofthe fundamental C-S-H (calcium-silicatehydrate) reaction of concrete caused by calcium leaching in water as well as block water penetration and therefore lead to improvementsin durability. By betterment of using nano-cement has the potential to create a new paradigm in thisarea of application because the resulting material can beused as a tough, durable, high temperature coating.Fire-protective glass is another application of nanotechnology. This is achieved by using a clear intumescent layer sandwiched between glass panels (aninterlayer) formed of fumed silica (SiO 2) nanoparticles which turns into a rigid and opaque fire shield when heated. Most of glass in construction is, of course, on the exterior surface of buildings and the control of light and heat entering through building glazing is a major sustainability issue.The addition of nano-Al $_2$O $_3$ of high purity improves the characteristic of concretes, in terms of higher split tensile and flexural strength. Micro and Nanoporiues aerogel materials are appropriate for being core materials are appropriate for being core materials of vacuum insulation panels. Another application of aerigels is silica based products for transpired insulation.

Key words: Nano-Silica, Nano-cement, nano-Al $_2$O $_3$, Nanoporiues aerogell

ICCE125: UTILIZATION OF WASTE SEA SHELLS AS A PARTIAL REPLACEMENT FOR COARSE AGGREGATE AND FINE AGGREGATE IN CONCRETE

[1]S.Soundharya & [2]A.S.Sarani

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Abstract: This project is study about the experimental and utilization on the effects of replacing coarse aggregate and fine aggregate in concrete with waste seashells on the strength, density of concrete. Two control mix of ratios 1:1.5: 3 were batched by volume and by weight. Waste seashells were used to replace the coarse aggregate and fine aggregate by volume and by weight respectively. This percentage replacement varied from 0% to 100% at intervals of 20%.The compressive strength and densities of cured concrete cubes of sizes,150mm x 150mm x 150mm were evaluated at 3days,7days,28days. Increase in the replacement of coarse aggregate and fine aggregate are lowered compressive strength and density. This study identified possible cost reduction in replacing coarse aggregate and fine aggregate with waste seashells and recommended codification of the use of waste seashells as aggregates in concrete.

Keywords: Cost Reduction, Replacing Coarse Aggregate, Waste Seashells

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ICCE158: EXPERIMENTAL STUDY ON CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY ADDING GROUND GRANULATED BLAST FURNACE SLAG AND RICH HUSK ASH

N.Premkumar

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Abstract: A mixture of binding materials , fine agrregates, coarse aggregates, cement and water in suitable proportions is called concrete. When these ingredients are mixed in suitable proportions, they form easily workable mix known as plastic ,wet or green concrete. When this plastic concrete becomes hard like stone, this is termed as harden concrete. It is estimated that between 6.0 to 7.2 million metric tons ground granulated blast furnace slag ,8.5to 9.0 million tons of rice husk ash is obtained each year in india.The primary applications for GGBFS in the United States are used as a granular base or as an cement replacement material in construction applications.The cost of concrete can be reduced by the usage of this waste product as a partial replacement of cement.The main objective of this investigation is to study experimentially the effect of partial replacement of cement by ground granulated blast furnace slag and rice hush ash on the various strength properties of concrete by using the mix design of M_{30} grade upto phase-I level the compressive strength ,split tensile strength and flexture strength of GGBFS of M_{30} grade at 7days, 14 days,28daysare determined.

Keywords: Ground Granulated Blast Furnace Slag, Rice Husk Ash, Split Tensile Strength, Flexure Strength.

ICCE163: INVESTIGATION ON CONCRETE USING E WASTE AND MICRO SILICA

[1]T.Praveen Kumar, [2]T.Archana & [3]D.Thenmozhi

[1]UG Scholar, Govt College of Engineering, Thanjavur.
[2]UG Student, Govt College Of Engineering, Bodinayakanor.
[3]Assistant Professor, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract: In this experimental work the behavior of E-plastic waste in concrete as partial replacement of coarse aggregate and micro silica in concrete as partial replacement of cement was investigated and strength and workability characteristics were studied. The E-plastic waste was used to replace coarse aggregate and the percentage of replacement was carried out in this work as 0%,5%,10%,15% and 20% by total weight of aggregate and also the micro silica was used to replace cement and percentage of replacement was carried out in this work was 0%,5% and 10%by total weight of cement. The use of this waste plastic increases the stiffness of the concrete which reduces the ductility of the concrete. Also for reduces the use of natural resources and disposal of wastes, prevention of environmental pollution and saves energy.

Keywords: Compressive Strength, Flexural strength, E-Plastic Waste, Micro Silica, Workability.

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ICEEEI04: IoT BASED SOLAR PANEL FAULT MONITORING AND CONTROL

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Abstract: This project presents a hardware design of smart grid home gateway that integrates smart home network to be compatible for smart grid integration with solar system for fault location identification. Solar power plants need to be monitored for optimum power output. This helps retrieve efficient power output from power plants while monitoring for faulty solar panels, connections, and dust accumulated on panels lowering output and other such issues affecting solar performance. The Internet of Things (IoT) is the network of physical objects or "things" embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data.The project is based on microcontroller board designs, manufactured by several vendors, using various microcontrollers.

Keywords: Internet of Things (IoT), Smart grid.

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ICCEI19: PRODUCTION OF MILKY MUSHROOM SPAWN AND COMPARING THE CULTIVATION OF MILKY MUSHROOM USING RICESTRAW, SUGARCANE BAGGASE, VERMICOMPOST AND KITCHEN COMPOST

[1]P.Siva & [2]M.Suganya

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Abstract: Indian agriculture will continue to be main strength of Indian economy. We have achieved food security by producing over 200 million tonnes of food grains. Microbiology plays major role in developing species. The important Reduce, Reuse, Recycle-these 3R's are provided by the compost. The use of chemical fertilizer contributes largely to deterioration of environment. In this project the milky mushroom spawn is cultivate during microbiology technique and compare the cultivation of milky mushroom which has been grown using rice straw, sugarcane baggase, vermicompost and kitchen waste compost. Only natural materials are used for growth of mushroom. In conclusion the growth of mushroom in different substrate materials is compared and efficient way is depicted.

Keywords: Milky Mushroom, Microbiology, Vermicompost, Kitchen Waste Compost.

ICCEI20: RECYCLING AND REUSE OF BUILDING WASTE IN CONSTRUCTION

T.Karpagam

PG Scholar, Dept of Civil Engineering, Pandian Saraswathi Yadav Engieering College, Sivagangai, Tamilnadu, India.

Abstract: The building industry has not only become a major consumer of materials. it has also become a source of pollution. The article focuses on reuse building materials as a way for environment protection and sustainable development. There are many methods used to reduce waste and increase profits through salvage, reuse and recycling of construction waste. Reduce, Reuse, Recycle are part of waste heirarchy guidance tool which ranks waste management options for best environment and energy consumption. It aims to extract from products the maximum practical benefits and generate minimal waste. The priorities in the hierarchy are based on sustainability. This article demonstrates that alternatives to modern building materials are available.

Keywords: Waste Management, Demonstrate, Modern Building Materials.

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ICCEI01: TREATMENT OF MUNICIPAL WASTEWATER FROM VELLAKKAL DUMPING SITE BY ELECTROCOAGULATION PROCESS

[1]A.Angayarajan & [2]M.Suganya

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[2]Assistant Professor, Dept of Civil Engineering, Pandian Saraswathi Yadav Engieering College, Sivagangai, Tamilnadu, India.

Abstract: Electro coagulation is a process that involves dissolution of a metal anode with simultaneous formation of hydroxyl ions and hydrogen gas at the cathode. This study investigated the influence of operating parameters (current density, detention time, pH, electrolyte concentration, electrode type, electrode distance) on COD removal using electro coagulation process (EC) with aluminum and iron electrodes in continuous flow model. Till today researchers are mainly focused on use of electro coagulation system in batch processes. Looking to a large quantity of wastewater, continuous flow regime may offer better solution. The operational parameters including current density, detention time and pH will be optimized forstudy and it is expected for the improved efficiency of COD removal.

Keywords: Electrocoagulation, Continuous flow, Density

ICCEI02: TREATMENT OF LEACHATE FROM AVANIYAPURAM DUMPING SITE USING BATCH REACTOR

[1]M. Devi Arun Sangeetha & [2]N. Aathiseshan

[1]PG Scholar, Dept of Civil Engineering, Pandian Saraswathi Yadav Engieering College, Sivagangai, Tamilnadu, India.
[2]Assistant Professor, Dept of Civil Engineering, Pandian Saraswathi Yadav Engieering College, Sivagangai, Tamilnadu, India.

Abstract: Leachate is highly complex and polluted waste water that is produced by the introduction of percolation water through the body of landfill treatment. Leachate treatment is essential as it could threaten the surrounding ecosystem when discharges as it is and when it mixes with groundwater. Landfill leachate is collected from Avaniyapuram Solid Waste Disposal Site. The specific composition of leachates determines its relative treatability. The treatment processes used for landfill leachates often involve a combination of appropriate techniques. They are designed as modular, multi-stage units, capable of coping with the changing leachate characteristics over the years. Several processes, drawn from wastewater and drinking water technology, have been applied for the treatment of landfill leachates, such as anaerobic and/or aerobic biological degradation, chemical oxidation, coagulation-precipitation, activated carbon adsorption, photo-oxidation and membrane processes. Various leachate treatment technologies like coagulation/flocculation, adsorption by activated carbon and precipitation are reviewed and their treatment efficiency were analysed.

Keywords: Leachate, Groundwater, Anaerobic, Aerobic Biological Degradation.

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ICCEI07: REMOVAL OF LEAD AND ZINC IN CONTAMINATED SOIL BY PHYTOREMEDIATION METHOD USING SUNFLOWER PLANT AT DINDUGAL

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Abstract: Heavy metal pollution in agricultural soil is one of the most important environmental problem for the different scientists, recently years. Heavy metal contamination in the agricultural soil is not only pollution but it also has dangerous effect on wild life and human life. The solution of this pollution problem by using classical traditional physical and chemical methods is too expensive.But phytoremediation method is using for removal of heavy metal from agricultural soils, recently. This method is cheaper than classical traditional physical and chemical methods. Most of the conventional remedial technologies are expensive and inhibit the soil fertility; this subsequently causes negative impacts on the ecosystem. Phytoremediation is a cost effective, environment friendly, aesthetically pleasing approach most suitable for developing countries. Despite this potential, phytoremediation is yet to become a commercially available technology in India. Phytoremediation uses plants to clean-up contaminated soil and groundwater, taking advantage of plants natural abilities to take up, accumulate, and/or degrade instituents of their soil and water environments. This paper aims to compile some information about heavy metals of arsenic, lead and mercury (As, Pb, and Hg) sources, effects and their treatment. It also reviews deeply about phytoremediation technology, including the heavy metal uptake mechanisms and several research studies associated about the topics.

Keywords: Heavy metal, Agricultural Soil, Groundwater, Phytoremediation.

ICCEI08: WASTEWATER TREATMENT BY EFFLUENT TREATMENT PLANTS

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Abstract: The development of innovative technologies for treatment of wastewaters from various industries is a matter of alarming concern for us. Although many research papers have been reported on wastewater pollution control studies, but a very few research work is carried out for treatment of wastewater of steel industries, especially in reference to development of design of industrial effluent Treatment Plants (ETP) system. The whole technologies for treating industrial wastewater can be divided into four categories: - Chemical, Physical, Biological and mathematical approaches. The purpose of Environmental Impact Assessment (EIA) is to identify and evaluate the potential impacts (beneficial and adverse) of development and projects on the environmental system.
Keywords: Effluent Treatment Plants, Environmental Impact Assessment.