Global Congress
on Renewable Energy and Environment

2018
TAEG
The Academic Events Group

7th

Grand Park Lara Hotel Convention Center Lara – Antalya Turkey

Global Congress on Renewable Energy and Environment

18-20 October 2019

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ABSTRACTS BOOKS

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7th Global Congress on Renewable Energy and Environment
(REE-2019)

18-20 October 2019

Grand Park Lara Hotel Convention Center
Lara – Antalya, Turkey

Organization

Istanbul Ayvansaray University
Association for Human, Science, Natura, Education and Technology
The Academic Events Group
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KEYNOTES

Prof. Dr. Ramazan Sarı
Middle East Technical University, Department of Business Administration
Ankara – TURKEY

Keynote Title: "Importance of Economic and Social Issues in Efficient Solar and Wind Energy Policy Development"

Abstracts: Energy has a central role in the contemporary debates on global warming and sustainable development. There is an ongoing discussion on whether we have reached the limits of fossil-based energy forms. It is very obvious that the transition from fossil-based energy forms to more renewable energy forms will positively alter the discussion on energy policies. It is not clear how replacing old energy forms with supposedly more renewable ones will be able to solve energy-related problems, without first addressing fundamental questions related to, for example, unsustainable production and consumption patterns, as well as deeper structural issues, such as social inequality in energy systems. Thus, two fields have grown in energy literature. Energy justice is an emerging research field that advances understandings of how energy systems and energy transitions impact upon societies. The social acceptance of policies are progressively becoming more important for policy and decision makers worldwide aiming to design policies that reach attempted targets smoothly with community support.

Prof. Dr. Özcan Asilkan
Dean of the Faculty of Computer Science and IT
Metropolitan University of Tirana (UMT)
Tirana, Albania

Keynote Title: "New Challenges for a Smarter Tourism in the Light of Big Data"

Abstract: In the last decade, Big data has become the most popular and widely used term to explain data availability and exponential growth in the rapidly changing modern world. It has evolved to bring new opportunities to professionals like scientists, managers, and policymakers to make effective decisions. "Big data" by now is a buzzword that is often used without an understanding of what it actually refers to. According to Gartner's technical definition, big data is: "high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation." Technicalities aside, big data is the most advanced tool that companies can use to know as much as possible your customers and target customers, no matter how large. Knowing the users you are addressing is the best way to communicate with them effectively, keep them loyal, and ensuring that they don't turn to competitors. With digital transformation, nothing is the same as before, and this is especially the case for growing Travel & Tourism sector, which is responsible for generating about 10.4% of the world's GDP and 319 million

jobs (about one in 10, internationally). Digital transformation has triggered an enormous series of consequences that have placed the customer at the center of things. Today, it's no longer the customer following the brand but the opposite. This is true for many sectors, but especially for travel and tourism. The industry of tourism thrives on information. Tourism big data is typical information produced by travelers themselves. Big data can deliver up-to-date and immensely informed inferences regarding behavior and human activity that enhances the tourism industry. Tourists leave various digital traces behind when using mobile technologies on the web. Through every tourist, enormous amounts of data are present about everything that is relevant to different stages of travel — before, between and after a voyage. Due to the vast amounts of data availability in the cloud, analytics has become a need to make sense of the information present in the data. If you are a new customer planning for a trip, you probably acquire more sources from the internet when you are buying tickets, researching attractions or reserving accommodations. Members of the tourism industry are slowly turning to big data to find new ways for improving opportunities, decision-making and overall performance, for example, an interconnection of scattered information can be made possible through big data. Merchants and agencies involved in tourism can find various methods to use a diversity of data resources to interact with potential guests at each stage of a tour and use these big data sources to timely and better understand the increasing visitor statistics. They can also re-market to aim customers who have chosen a particular destination on an agency travel website. Big data tourism using particular methods have benefits over traditional methodologies, which will be discussed during this conference.

Biography:
Prof. Özcan Asilkan is an experienced Computer Engineer and Professor of Management Information Systems with a demonstrated experience in manufacturing and tourism industries. His research Interests focus on Management Information Systems, Machine Learning, Data Mining, CRM and Tourism. With more than 20 years of academic and business expertise, he has held many engagements throughout the world, mainly in Turkey, North Cyprus, Germany and Balkan countries. As an IT expert, he worked as System Analyst, Database Administrator and Application Developer, took part in many projects, e.g. the implementation of CRM and ERP Systems in manufacturing companies and hotel resorts. He also served as consultant for the several software companies, located in Antalya Technopark, dedicated to the production of hotel management software. As an Academic, he founded and chaired the departments of Computer Engineering and Management Information Systems in various universities. Among the major courses he has taught over the years are Statistics, Data Mining, Artificial Intelligence, MIS, XML, Algorithms & Programming, Software Testing, etc. He is the co/author of approximately 50 papers published in international journals and conferences. He chaired several international conferences and joined as Keynote speaker to several others. In addition to the native language (Turkish), he also knows English and German. Since September 2019 he has been working as the Dean of the Faculty of Computer Science and IT at Metropolitan University of Tirana (UMT) in Albania.

ABSTRACTS

The concept of environmental sustainability in Iraqi legislation

Nada S. Abdulmajeed, Institute Technology Kirkuk, Northern Technical University, Iraq

Turhan Nurettin Avci, Turkey

Abstract

More recently, the concept of environmental sustainability or sustainable environment has been one of the most important concepts that have attracted the attention of designers and researchers in sustainable architecture. The production of sustainable architecture requires the availability of regulations and laws on environmental sustainability and sustainable architecture to support the work of the designer, Therefore, this study focused on the concept of environmental sustainability in Iraqi legislation. Although many international and local studies and studies have touched on the subject of sustainable architecture, these studies have not examined the Iraqi legislation and the extent to which it deals with the concept of environmental sustainability. Therefore, there was a problem with a knowledge gap of the concept of environmental sustainability in Iraqi legislation. Thus, we have indicated goal of this research as "provide an information base for the concept and then search for it in Iraqi legislation at several levels to determine whether it is addressed in legislation." In order to achieve required approach: a. .Determine a conceptual framework on the topic of environmental sustainability through previous studies and literature. B. Conducting research in Iraqi legislation at various levels to reach the results.

Finally, conclusions were present, which cover the aim of the research.

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ENHACEMENT OF HEAT EXCHANGERS WITH METAL FOAMS

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Bahadir Dogan, Eskisehir Technical University

Abstract

Heat exchangers have very important role for the removal of the heat from the system while it is in operation. Since almost all devices which are commonly used in our daily life's generates heat, the heat removal from all this equipment's are becoming vital for the sake of their operations. In order to improve the transfer of heat to the environment, several geometries, designs, structures, working fluids have been investigated and developed so far. The surface extension is one of the widely preferred approach, among all these reported methods. Even though the present applications meet the recent requirements, the need for more heat transfer by smaller volumes or surfaces becoming important by the increasing interest on the miniaturization of devices. At this point, the substitution of metal foams with the present fins on the heat exchangers is becoming very essential for the further developments. Metal foams are becoming very popular in last decades in the field of heat exchangers by their unique feature, which is the transport of large amount of heat over a small volume. The porous medium which is the basic feature of the structure is the main interest of the researchers in the reported works. The effect of the surface area density, porosity, geometry of the pores on the heat exchangers is studied from various aspects in order to understand the mechanism of the heat transfer in this particular medium better. The investigations are carried out either numerically, experimentally or analytically for the highlighted parameters. Researchers noted crucial findings as regard to their works such as: the flow regime inside the medium, interfacial heat transfer, the effect of strut shape on the performance, the effect of porosity on the heat transfer. Furthermore, the comparison of the 'recent designs' and 'improvement after the substitution with the metal foam' is evaluated by the investigators as well to reveal the contribution of the porosity on the performance. In this communication, the studies about 'metal foams used in the heat exchangers' that could be accessible in open literature, are investigated in detail from the perspective of 'how they are developed, modeled, investigated by the researchers'. This review is considered as a part of an ongoing project about the compact heat exchangers and the replacement of the fins by the metallic foams on it. The detailed presentation of the topic would be very helpful for the ones who are interested in the heat exchangers with metallic foam.

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Evaluation of five various technologies of PV panels for Si production using Sahara sand silica source

Mohamed MOSTEFAI, University Tahar Moulay of Saida

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Abdallah MILOUDI, University Tahar Moulay of Saida

Abstract

The idea of the SSB (Sahara Solar Breeder) project consists of constructing industrial plants in the Sahara desert that would extract silica from the sand and use it to produce photovoltaic panels. The first solar panels are going to be used to construct photovoltaic power plants. On the other hand, the principal object of this project is to construct sufficient plants until the breeding plan can deliver 100 GW of electricity to supply 50% of the world's electrical demand by 2050. This energy will be delivered via a HTSC cable (High Temperature Superconductor) to transport the produced DC current electricity over 500 Km. The Sahara Solar Breeder (SSB) project is a joint Japanese-Algerian universities project . In the context of this project, a Sahara Solar Energy Research Center (SSERC) was created in the University of Saida (Algeria). This center is equipped of: meteorological monitoring system, the outside photovoltaic panels evaluation systems and underground temperature measurement system. These installations have been initiated for the assessment the ability of PV and solar of the Algerian desert as part of Sahara Solar Breeder (SSB) project. However, a description of these equipments of this center is presented. Also some important data such irradiance, temperature, energy, I-V curves evaluation of newly installed photovoltaic panels based on five various technologies and underground temperature measurement are presented and analyzed. Finally, a discussion on the usefulness of these data for the SSB project will be discussed.

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Improvement technique of direct torque control of DFIG based in wind energy conversion system

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Yahia Miloud, GACA Laboratory, Department of Electrical Engineering, University of Dr Moulay Tahar, Saida, 20000. Algeria

Abstract

This paper presents a comparative study between two strategies for the direct torque control (DTC) of the doubly fed induction generator (DFIG) based on wind energy conversion system (WECS). The first method is a conventional direct torque control DTC and it is based on hysteresis controllers where the torque and the flux are regulated by these controllers. The main drawbacks of the conventional direct torque control are the variable switching frequency and the high level of ripples. Consequently, they lead to high current harmonics, an acoustical noise and they degrade the control performance. The ripples are affected proportionally by the width of the hysteresis band. The second one is direct torque control by space vector modulation strategy (DTC-SVM) where the torque and flux are regulated by PI controllers. The main feature of the proposed (DTC-SVM) strategy is the reduction of torque and flux ripples. Simulation results of this proposed system was analyzed using MATLAB environment. The results obtained for the DTC-SVM illustrate a considerable reduction in torque and flux ripples compared to the classical DTC. SVM-DTC technique however showed a high performance torque control and dynamic while keeping good accuracy of control. This precision is based on the right choice of the voltage vector   which is very important in the regulation of the flux vector and therefore the torque.

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A comparative study on conventional and modern maximum power point tracking algorithms applied to photovoltaic systems

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Abstract

This paper presents an intelligent method to improve and optimize the control performance of a photovoltaic system. To this end, an algorithm of maximum power point tracking (MPPT) based on fuzzy logic controller (FLC) was used. A comparative study of the dynamic behaviour between FLC and Perturbed and Observed (P & O) techniques was carried out in order to analyse, simulate and evaluate a photovoltaic (PV) system under different weather conditions. The overall system simulation has been performed using Matlab/Simulink software. Simulation results show that the dynamic performance reported by the fuzzy controller is much better than that obtained by the conventional controller (P & O) in terms of response time and damping characteristic. In addition, obtained results confirm that the fuzzy controller tracks the maximum power point better than the controller (P & O). In fact, fuzzy controller provides faster convergence and lowers static error. Moreover, it is more robust to atmospheric condition variations.

Keywords: PV system, MPPT, Fuzzy logic control, P & O algorithm, step up converter.

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A Climatic Factor Based Assessment of Solar Panels

Hacer MUTLU DANACI, Akdeniz University

Setenay UÇAR, Antalya Bilim University

Hilmi Ekin OKTAY, Van Yuzuncu Yil University

Abstract

Energy consumption continues to grow by the day and the use of non-renewable fossil fuels (oil, naturalgas, coal) are both harming the environment and causing the rapid depletion of this resource. On the otherhand, renewable energy is an environmentally friendly and healthy alternative to depleting naturalresources and therefore there is a need to provide support to and increase the use of solar power. Thereare numerous ongoing studies on the utilisation of photovoltaic panels and determination of optimalclimatic conditions.In this study, measurements were made in five different provinces in order to investigate the climate factorin the use solar power. Assessments were carried out based on comparing data obtained from the measurements made in the moderate humid, moderate dry, hot humid, hot dry and cold regions of theclimate zones and with consideration to environmental advantages in which solar panel type, installedcapacity kW value, system losses and other variables were kept constant. Results suggest that forexample, electricity production is adversely affected in humid climate zones. Hot climate zones demandnatural cooling at higher temperatures to reduce panel overheating and increase production efficiency. Ithas been concluded that optimal efficiency is found in the temperate dry climate zone, provinces with dryclimate and moderate temperatures.

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