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BOOK OF ABSTRACTS

NSRA-18

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ACADEMIC RESEARCH AND SOLUTIONS SOCIEDAD LIMITADA

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Book of Abstracts of the International Conference on Natural Sciences and Recent Advances in Engineering Technology

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Welcome to Academic Research and Solutions Sociedad Limitada (ARS)

ARS provides an ideal academic platform for researchers to present the latest research findings and describe emerging technologies, and directions in Social Sciences, Business Management, Engineering and Natural Science issues. The conference seeks to contribute to presenting novel research results in all aspects of Social Sciences and Engineering. The conference aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Engineering, Social and Applied Sciences. It also provides the premier interdisciplinary forum for scientists, engineers, and practitioners to present their latest research results, ideas, developments, and applications in all related areas. The conference will bring together leading academic scientists, researchers and scholars in the domain of interest from around the world. Our oncoming events of the successful conference series focusing on Engineering and Social Sciences. Hence, the scientific program focuses on current advances in the research, production and use with particular focus on their role in maintaining academic level in Engineering, Social & Applied Sciences and elevating the science level. The conference's goals are to provide a scientific forum for all international prestige scholars around the world and enable the interactive exchange of state-of-the-art knowledge. The conference will focus on evidence-based benefits proven in clinical trials and scientific experiments.

Best Regards, Chairman of Conference Prof. Dr. T.I.K.





SALLES HOTEL PERE IV, BARCELONA - SPAIN

PROGRAM SCHEDULE



Conference Schedule

DAY 01 Saturday (March 17, 2018)

Venue: Salles Hotel, Barcelona, Spain

09:00 am - 09:30 am	Welcome Reception & Registration
09:30 am - 09:40 am	Opening Ceremony
09:40 am - 09:50 am	Welcome Remarks - Dr. Perez M. - Conference Coordinator
09:50 am - 09:55 am	Introduction of Participants
09:55 am – 10:00 am	Group Photo Session
10:00 am – 10:30 am	Grand Networking Session and Tea Break

DAY 01 Saturday (March 17, 2018)

Session 1 (10:30 am - 12:00 pm)

Venue: Room 1

Session Chair: Dr. Perez M.

Track A: Business, Economics, Social Sciences and Humanities

Point of Discussion	Presenter
Enterprise Flexibility and Innovative Capacity: Evidence from the German R & D survey	Dr. Thu-Van Nguyen
Enterprise Flexibility and Innovative Capacity: Evidence from the German R & D survey	Dr. Verena Eckl
Social Entrepreneurship in an Islamic context	Dr. Veland Ramadani
Authenticity and Quality Considerations in Food Consumption	Sean Coary
Innovative Startup Marketing	Sergey Shkarovskiy
Innovative Startup Marketing	Sergey Shkarovskiy
Leadership Supports Communication	Hina Rehman

Lunch Break (12:00 - 01:00pm)

Session 2 (01:00 pm - 02:00 pm)

Track B: Engineering & Technology, Computer, Basic & Applied Science

Point of Discussion	Presenter
New Inverse Operator for Solving Wave Equations with Alternative Combination of the Initial and Boundary Conditions	Prof. H. O. Bakodah
Ranking of Recycling Technologies Metal Components of End of Life Vehicles by using Modified ELECTRE	Vulić Miroslav
Bicarbonate-enhanced Photocatalytic Oxidation of Organic Compounds by WO3/H2O2 System under Visible Light Illumination	Hak-Hyeon Kim
Chemical Actinometry and Bio-dosimetry for Determination of UV Fluence in Pilot- Scale Disinfection System	Taewan Kim
Antibacterial activity of chitosan on Staphylococcus aureus	BOUDJEMA NOUARA
Study of the Populating Macroinvertebrates and Conditions Environment of El Ham- mam Wadi*(W.Mascara/Algeria)	Sihem KHETTAR

Closing Ceremony (02:00 - 02:15)



2nd Day (March 18, 2018)

All respective guests are free to conduct their own sightseeing and tour. The second day of the event is reserved for this memorable purpose.







TRACK: ENGINEERING TECHNOLOGY AND APPLIED SCIENCES



New Inverse Operator for Solving Wave Equations with Alternative Combination of the Initial and Boundary Conditions

Prof. H. O. Bakodah¹, N. A. Al-Zaid^{2*}

Abstract In this paper, a modified decomposition method with improved formula for the inverse operator is introduced and used to obtain approximate solutions for linear and nonlinear wave equations with Dirichlet, Neumann and mixed boundary conditions. Approximate analytical solutions obtained using the present approach involve combinations of the initial and boundary conditions which demonstrates efficiency and high accuracy over the standard Adomian decomposition method. All the results obtained using our method have been checked and compared with the exact solution. We presented some comparison graphs using Maple software.

Keywords: Initial-boundary value problem; linear and nonlinear wave equations; Lesnic's approach; Dirichlet boundary conditions; Mixed boundary conditions; Neumann boundary conditions; nonlinear partial differential equations; Adomian decomposition method.



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Ranking of Recycling Technologies Metal Components of End of Life Vehicles by using Modified ELECTRE

Vulić Miroslav^{1*}, Pavlović Milan², Aleksić Aleksandar³, Tomović Aleksandar⁴, Tadić Danijela⁵

Abstract The evaluation and selection of recycling technologies presents one of the most important operational management problems. In this paper, a new fuzzy model to evaluate recycling technologies with respect to numerous criteria, simultaneously, taking into account the type of each criteria and its relative importance. The relative importance of criteria and their values are modelled by interval triangular fuzzy numbers type-2. Determining the criteria weights is stated as a fuzzy group decision making problem. The ranking of considered recycling technologies is obtained by applying modified ELECTRE. A case study with real-life data which come from reverse supply chain existing in the Republic Serbia is presented to illustrate the proposed method. The presented solution enables the ranking of recycling technologies and provides base for successful improvement of reverse supply chain management.

Keywords: Recycling Technologies, Interval Triangular Fuzzy Number Type-2, Modified ELEC-TREE .



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Bicarbonate-enhanced Photocatalytic Oxidation of Organic Compounds by WO3/H2O2 System under Visible Light Illumination

Hak-Hyeon Kim¹, Jaemin Choi², Hongshin Lee³, Jiwon Seo⁴, Min Sik Kim⁵, Taewan Kim⁶, Ki-Myeong Lee⁷, Hyeongjin Jeong⁸, Changha Lee^{9*}

Abstract Tungsten(VI) oxide (WO3) has been studied as a photocatalyst for oxidative degradation of organic contaminants. However, WO3 alone is not effective in oxidizing contaminants due to the fast recombination of electron and hole pairs. The addition of hydrogen peroxide (H2O2) can inhibit the electron-hole recombination by trapping electrons from the photo-excited conduction band, resultingly improving the production of hydroxyl radical (•OH) in the valence band. Through this mechanism, the oxidative degradation of organic contaminants by illuminated WO3 can be accelerated by H2O2. In this study, it was found that the addition of bicarbonate ion (HCO3 \square) further enhances the degradation of organic contaminants by illuminated WO3/H2O2 system. Interestingly, HCO3 \square , generally known as a •OH scavenger, increased the production of •OH by illuminated WO3/H2O2, which was evidenced by experiments using •OH probe compounds and electron paramagnetic resonance (EPR) spectroscopy. All photocatalytic experiments were carried out under visible light illumination (\square > 400 nm).

Keywords: Tungsten Oxide, Photocatalyst, Bicarbonate, Visible Light, Oxidative Degradation.



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Chemical Actinometry and Bio-dosimetry for Determination of UV Fluence in Pilot-Scale Disinfection System

Taewan Kim¹, Jiwon Seo², Hak-Hyeon Kim³, Junghun Lee⁴, Donghyun Lee⁵, Min Sik Kim⁶, Ki-myeong Lee⁷, Hyungjin Jung⁸, Changha Lee^{9*}

Abstract Ultraviolet (UV) disinfection has been widely used and studied as an effective technology to inactivate pathogens in water. Unlike chemical disinfection using chlorines and ozone, UV disinfection does not produce harmful disinfection byproducts. Since the IT values (product of UV intensity and time required for log inactivation of microorganisms) are known for many microorganisms, the microbial inactivation efficacy of UV disinfection systems can be quantitatively estimated by determining UV fluence. Computational fluid dynamics (CFD) modeling is routinely used to predict the UV fluence. However, the simulation by CFD modeling can have less reliability compared to the methods by experimental measurements. Biodosimetry using test microorganisms can be an option to experimentally measure the UV fluence, but it also has limitations regarding cost, accuracy, and large-scale application. Chemical actinometry can be an alternative to assess the UV fluence in disinfection systems. In this study, uridine was selected as a chemical actinometer. UV fluence was quantified and compared in a lab scale disinfection system using both biodosimetry and chemical actinometry using uridine. Uridine was also applied to measure the UV fluence of a full-scale disinfection system for an outdoor floor fountain.

Keywords: Chemical Actinometry, Bio-dosimetry, UV Fluence.



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Antibacterial Activity of Chitosan on Staphylococcus Aureus

Nouara Boudjema^{1*}, Soumia Tali², Yasmina Selmi³

Abstract Given the extent of this antimicrobial resistance of the germs responsible for diabetic foot infection, the use of chitosan as an alternative treatment for isolated bacteria has shown its effectiveness. This biopolymer showed a good antibacterial effect against most of the strains tested with the well diffusion method to that of the disk diffusion of which Staphylococcus aureus expressed the best sensitivity by the well diffusion method with a DZI of 64mm against 18mm by the disk diffusion method.

Keywords: Chitosan, Antibacterial, Staphylococcus Aureus, Diffusion Method.

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Study of the Populating Macroinvertebrates and Conditions Environment of El Hammam Wadi*(W.Mascara/Algeria)

Sihem KHETTAR^{1*}, Nawel HAOUCHINE², Ourida KHERBOUCHE et Boualem ASSELAH³

Abstract This study deals with the quality of water in the El Hammam wadi and in its 03 effluents. The physical-chemical implication and the faunistic composition (macroinvertebrate) were also dealt with. Eleven stations situated between 130 and 500 metres of altitude were studied (six sampling campaigns were done). The physical – chemical analysis shows that water samples are medium to weak oxygenated. They are alkaline waters highly mineralised. Medium concentrations of chemicals are to the cations of 453 mg/l of calcium and 551 mg/l of magnesium. Anions average is 322 mg/l of carbonates, 293.64 mg/l of chlorures, 382 mg/l of sulfates and 7 mg/l of nitrates. This work helped us to count 24976 items which are members of 07 classes of benthic invertebrate 89.97% of which are insects. Among them are Ephemeroptera, Diptera, Heteroptera Trichoptera, Coleoptera, and Odonata. I.B.G.N. application shows globally a medium to poor hydro biologic quality with I.B.G.N's from 5 to 9.

*:wadi: name given for Maghrebine river.

Keywords: El Hammam Wadi, Benthic Macro Invertebrate, Physical Chemistry, Biologic Index, Quality.

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TRACK: BUSINESS, ECONOMICS, SOCIAL SCIENCES & HUMANITIES



Social Entrepreneurship in an Islamic Context

Dr. Veland Ramadani*

Abstract The concept of social entrepreneurship still has not been fully understood because of the various interpretations that come-out from different perspectives and people. However, previous studies on social entrepreneurship, mostly perceived it from the Western perspective, which was not established from a religious point of view, which is a consequence of the lack of religious relations. In fact, the perspective of religion is rarely found in the literature on social entrepreneurship in previous studies. The term of Islamic social entrepreneurship is still new in social entrepreneurship and social enterprise theory and research. Entrepreneurship from an Islamic perspective closely considers on principles of thoughts that are affirmed in the following two ways. Firstly, Islam encourages entrepreneurial development and entrepreneurship as an integral part of its religion. Secondly, in the perspective of ownership resources and treasure, Muslims are khalifah and agents of trust of Allah who are responsible to generate prosperity and considering that doing business, the most important thing is to be as useful as possible for the society (cooperation for existence) and to live ethically in correspondence with the philosophy of belief in Allah the Almighty.

Keywords: Tourism, Health Social Entrepreneurship, Islamic Entrepreneurship, Dual Contrary Motive.

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Enterprise Flexibility and Innovative Capacity: Evidence from the German R&D Survey

Dr. Thu-Van Nguyen^{1*}, Dr. Verena Eckl²

Abstract Increasing competition and rapid technological and structural changes mark today's digital area. Firms have to be more and more innovative in order to survive on the market. But what are the driving factors behind a firm's innovation capacity? To what extent does its flexibility in terms of openness to new working structures, conditions, and new research fields play a role, especially for the ICT sector? This paper aims at empirically analyzing the effect of flexibility on innovative capacity by using a unique German dataset on R&D expenditures. First results of linear regression models indicate that there is indeed a positive effect of having "open structures" on firms' innovation performance, especially within the ICT sector.

Keywords: Flexibility, ICT Sector, Innovative Capacity, Open Structures.



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The Power of Authenticity for New and Existing Products

Sean Coary *

Abstract Although product claims of authenticity, many of them false, engulf consumers, they still seek authenticity in personal possessions (Grayson and Shulman, 2000), brands (Holt, 2002), consumer goods (Goldman and Papson, 1996), and retail settings (Wallendorf, Lindsey-Mullikin, and Pimentel, 1998); moreover, consumers demand authenticity from brand marketers (Beverland, 2005; Gilmore and Pine, 2007). This goal is heightened as consumers must sift through the claims of authenticity associated with numerous products; in today's marketing setting, a central theme is this tension between the authentic and inauthentic (Brown, 2001). Due to these claims, consumers must constantly evaluate marketing messages in their quest for a truly authentic product, service, or experience. Restaurants and ethnic foods are another area where consumers seek authenticity in experiential products (Lu and Fine, 1995). Though consumers desire authentic food products, one cannot neglect consumers' desire for quality. Across three studies, authenticity demonstrated its ability to overcome a quality deficiency. These results suggest that authenticity must also be considered. Consumers appear to be evenly split on their preference for either a highly authentic food item or a high-quality food item. If their brand is perceived to be authentic, it's critical for them to communicate these authentic characteristics, especially if they are lower in quality. Here the goal is to discount authenticity as there may be an objective reason for why quality is crucial and not subjective to taste.

Keywords: Authenticity, Quality, Entrepreneurship, Tourism, Food, Consumption.

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Leadership Supports Communication

Hina Rehman *

Abstract Public sector reforms were initiated and sponsored by IMF (International Monetary Fund), World Bank and United Nations Development Program (UNDP) in Pakistan during 1990s. The main purpose of the reforms was to improve the condition of the public sector organizations by making them more responsive to the need of society welfare. These Pubic sector reforms were introduced by consultants, bureaucrats and leader of the organization in their respective departments and units. So it can be assumed that leadership plays an important role in success and implementation of these reforms. Leaders of the organization initiated, associated and communicated employees the potential benefits of the reforms. 70 to 90 percent of the leader (manager) time spent in communicating with their respective employees as mentioned by most of the studies. This study aims to investigate the role of leadership support on perceived benefit of internal communication of these reforms. For this study, survey method was adopted to gather data from 135 Middle level employees (17 and above grades) of eleven (11) Public Sector organizations by convenience sampling technique. Findings of the study showed that leadership support is a significant predictor of perceived benefit of internal communication. So it is concluded that leadership support increases the internal communication perceived benefit and facilitate, share and commit their employees toward organization progress in more precise manner.

Keywords: Leadership Support, Internal Communication, Public Sector Reforms.

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Innovative Startup Marketing

Sergey Shkarovskiy^{1*}, Tokarev Boris²

Abstract Every day startups constantly worldwide in tens and in hundreds. Everyone looks for the proper place, offering something new in the form of an unknown product, absolutely new processes, or changes in structures of the organizations. The statistics shows that only an insignificant part of new products remains in the market. The reasons of it are different, but our interest represents those products, which are connected with marketing activities and influence of the markets. Modern practice pays very close attention to development of innovative products. The markets, in which such products appear, involve in the orbits more and more participants. The special attention to innovative products is caused by the fact, that they are accompanied by the strategic uncertainty of results: beginning with problems of technical feasibility of new product technology up to the search of financing resources. It shows the fundamental difference between carrying out of the marketing analysis of innovative products sale prospects and traditional marketing researches. Known to consumers products, including undergone modification (upgrade), are much less subject to risks of rejection by the market. For such products there are opportunities to receive statistics of sales, it is possible to study dynamics of market indicators, to investigate the attitude of consumers towards it, and to find out who and how uses this product. But abovementioned opportunities are absent for innovative products. We will pay attention to one characteristic of innovative products. They often, especially essentially new, alter a way of customer life.

Keywords: Innovative, Startup Making.

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