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ABSTRACT BOOK

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Paper ID: HS003

ASSOCIATION BETWEEN SOCIOECONOMIC STATUS AND PREDIABETES IN MADURAI CITY

Grace Janet Mary Ann[1*], Karthiga[2], Arthur J. Asirvatham[3]

[1] *Research Centre of Home science, Fatima College, Madurai*
[2] *Research Centre of Home science, Fatima College, Madurai*
[3] *Arthur Asirvatham Hospital, Madurai.*
janetaah80@gmail.com

ABSTRACT

Globally Type 2 Diabetes Mellitus - is increasing and the prevalence of Prediabetes in India is also increasing. This may be due to difference in Socio economic Status. But studies on the Socioeconomic Status (SES) and Prediabetes are still in controversy that Prediabetes occurs due to Low SES or High SES and there is no relationship between them. Hence this study was focused on determining the association between Socioeconomic status and Prediabetes in Madurai City. About Sixteen centres like walkers' club, park, pharmacies, companies, apartments, markets from in and around Madurai were selected for screening for Prediabetes. The study was carried after getting the ethical clearance. A total of 1051 Volunteers were participated in the study. Informations like age, gender, marital status, education, occupation, monthly income was collected by direct interview using questionnaires. International Standard Classification of Education (ISCED) was used for classification of education. Pearson correlation method was used to analyse the socioeconomic factors associated with Prediabetes. In the present study, majority of them were - found to be male (63%), female it was only 37 %. Nearly 20 %,23%, 22%, 20% and 12 %were from the age group between 31-40 yrs, 41-50 yrs, 51-60 yrs, 61 and above ,21-30 years respectively, only 3 % were from 18-20 yrs. Among them, 90%were married, 9%were unmarried and only 1 % were widowed/separate. Sixty-eight percentage of them were having low educational status and only 32 % of them were having higher education. And 95% were from urban place while only 5 % were from rural area. In respect to occupation, 67%,11%,10%,8%,4% were general Contractors/Labours, Government Officers, Business, Agriculture, Private Sectors respectively. Fifty percent of the participants have monthly income of less than INR 10,000 and another 50% of them were having monthly income of above INR 10000. In this study, Pearson correlation method was used for analysing the variables with Pre diabetes and revealed r=0. The p -value was not significant ($p < .05$) which demonstrated that age, gender, education, occupation, marital status, monthly income was not associated with Prediabetes. The study revealed that socioeconomic status was not associated with Prediabetes among the participants in Madurai city.

Keywords: Prediabetes, Socioeconomic status, Association

Paper ID: HS004

A SURVEY ON THE KNOWLEDGE OF SUBDURAL HEMATOMA AND ITS MRI APPEARANCE AMONG THE RADIOGRAPHERS

Tamijeselvan
Mother Theresa PG & Research Institute of Health Sciences Puducherry, INDIA
tamije1970@gmail.com

ABSTRACT

This study aims to access the knowledge about the Subdural Hematoma and its MRI appearance among the radiographers. Since the radiographers are the key persons in doing the imaging process, the knowledge about various clinical findings is essential to fix the correct image sequence which will give the optimum diagnostic value of the medical imaging. Three types of subdural hematomas have been identified: Acute subdural hematoma, subacute subdural hematoma, and chronic subdural hematoma. The study used a descriptive study design utilizing a questionnaire to collect data. 226 questionnaires were distributed among the radiographers working in hospitals in Puducherry region. Data was collected through a questionnaire, which was derived from previous studies. One point for the right answer and zero points for the wrong answer and missing answer. The total scores in each topic are equated to 10, and the response was evaluated as follows. Scores above 7 were graded as GOOD, between 7 and 4 is graded as AVERAGE and below 4 is graded as POOR. The percentage under GOOD and AVERAGE are taken together in a knowledgeable category. Based on the empirical evidence observed in this study, it could be concluded that the knowledge of radiographers towards Subdural Hematoma and its MRI appearance is adequate. The level of knowledge of the radiographers working in hospitals of Puducherry can be improved by conducting a continuing educational program.

Table 1: The overall knowledge of radiographers regarding the Subdural Hematoma and its MRI appearance based on demographic variables.

Variables		Good (score >7)		Average (score 7-4)		Poor (score <4)	
		No. of Respondent	%	No. of Respondent	%	No. of Respondent	%
Gender	Male	27	20	50	40	49	40
	Female	16	18	37	41	37	41
Age	19-27	30	30	36	50	14	20
	28-36	25	25	52	52	23	23
	37-45	4	10	14	35	22	55
	>45	0	0	4	30	10	70
Qualification	PG	4	80	1	20	0	0
	UG	20	50	16	40	4	10
	Diploma	81	48	46	27	43	25
	Certificate	1	9	4	36	6	55
Experience	Up to 5 yrs	21	50	17	40	4	10
	5-10 yrs	52	40	50	39	27	21
	Above 10 yrs	11	20	19	35	24	45

Keywords: Subdural Hematoma, MRI, Radiographer

Paper ID: HS005

KNOWLEDGE, ATTITUDE AND BEHAVIOUR TOWARDS ANEMIA IN MALE TERTIARY EDUCATION STUDENTS

Abdul Rahman, Liu Jie,T , Subramaniam, K and Loganathan, A*

Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Malaysia
** annal@utar.edu.my*

ABSTRACT

Globally, anemia has been reported to have a significant impact on pre-school aged children, non-pregnant women, pregnant women, and older people. Studies conducted on adult males are limited. This study was aimed to investigate the prevalence of anemia, knowledge, attitude, and behavior preventing anemia among male students pursuing tertiary education. A cross-sectional study was conducted by non-randomly selecting male students pursuing foundation and undergraduate studies at the University Tunku Abdul Rahman (UTAR), Kampar Campus, Perak.A pre-tested self-developed questionnaire was used to collect information on demography, knowledge, attitude, and behavior towards anemia. Students' height, weight, and hemoglobin concentration (g/dL) were measured. A total of 126 male participants enrolled in this study. The prevalence of anemia among male students was 18.3%. Among the male students with anemia,73.9% were found possessed average knowledge of anemia. Nonetheless, only 8.6% sleep early at night, 26% involved in workout at least 30 minutes per week, and 70% spending their leisure time playing games and chatting on Facebook. Furthermore, practices of prevention of anemia by the male students were; 13% performed annual hemoglobin measurement and 23% are involved in changing dietary habits, like consuming food rich with iron. Hence, the male students should not be excluded from gaining the knowledge of anemia and its prevention together with their opposite gender in their early stages of adulthood.

Keywords: Anemia, Knowledge, Attitude

Paper ID: HS007

CORRELATION OF FATIGUE LEVEL WITH PAIN, DEPRESSION AND FUNCTION IN STROKE PATIENTS

Seraj Abdulla El twilb*, Mahadevi

MAHSA University, Malaysia
**eltwilbseraj@gmail.com*

ABSTRACT

Fatigue is a common problem in ischemic stroke survivors. And the Fatigue is a multidimensional construct and relates to individual physical, emotional and mental experiences. Fatigue, synonymously known as tiredness or exhaustion. Depression is a common experience for stroke survivors. It's often caused by biochemical changes in the brain. When the brain is injured, the survivor may not be able to feel positive emotions. It is normal for stroke survivors to feel weakness on one side of the body, which can lead to spasticity and excruciating pain in muscles and joints, particularly in the shoulders. Headaches and sore, swollen hands are also common after effects of a stroke, usually referred to as central post- stroke pain (CPSP). Following a stroke, patients usually develop motor impairments, which are associated with a decrease in function. Considering the scores obtained in the Fugl-Meyer Assessment, most patients showed compromised motor abilities (classified as severe to moderate, 67%). The purpose of this study is to find the correlation of fatigue with depression, pain and function in stroke patients. Design The study will be an observational study of 132 chronic stroke patients involving both males and females without any other neurological disorder, physical deformity, cognitive disorder and conditions of the heart, lung, kidney or liver, or a malignant tumour. Post stroke fatigue will be measured by the Fatigue Severity Scale. NPRS-FPS scale will be used for pain. FUNCTIONAL INDEPENDENCE MEASURE will be used to asses' function. And the depression will be measured by Beck Depression scale. The study will be done on major hospitals of Kuala Lumpur and will be on a limited amount of patients due to limited time of 4 months available for the research conduction.

Keywords: Stroke, post stroke fatigue, depression, pain, the Fatigue Severity Scale

Paper ID: HS008

KNOWLEDGE AND APPLICATION OF CONSTRAINT-INDUCED MOVEMENT THERAPY IN STROKE REHABILITATION AMONG PHYSIOTHERAPISTS AND OCCUPATIONAL THERAPISTS

Mahmoud M. Dboba* and Shantha Kumar

Department of Physiotherapy, Faculty of Health Sciences, Mahsa University, Malaysia
**dbobam@gmail.com*

ABSTRACT

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts or ruptures. When that happens, part of the brain cannot get the blood and oxygen it needs, so it and brain cells die. Stroke is one of the main causes of acquired adult disability. Approximately 80% of these survivors have upper extremity motor impairments that gravely affect their ability to perform activities of daily living, as well as social participation. Upper extremity hemiparesis remains the most common and disabling of all stroke-induced impairments. As a result, the development of new treatments targeting the paretic upper extremity movement remains a high priority. In response to this need, several upper extremity rehabilitative regimens have been developed. Perhaps no upper extremity approach has received more attention than constraint-induced movement therapy. Constraint-induced movement therapy (CIMT) is an effective intervention for upper extremity recovery following stroke. Despite strong evidence supporting its use, the Implementation of CIMT in practice is limited. A number of systematic reviews provide robust evidence for CIMT use with people who have experienced a stroke in both the sub-acute and chronic stages. Furthermore, evidence of CIMT's effectiveness in patients who meet the criteria for treatment. CIMT has therefore been recommended as an effective intervention in the scope of clinical guidelines internationally, including the United Kingdom, Australia, and Canada While the debate continues about optimal program intensity, and questions abound regarding its clinical feasibility. Several studies have highlighted the fact that, even though CIMT is recommended for treating upper extremity hemiparesis in national stroke care guidelines, it is not being implemented as a standard practice for stroke care. Given the lack of studies examining the use of CIMT, empirical knowledge is needed about clinicians' perceptions, the actual application, and perceived barriers to implementation. This knowledge would inform research on the clinical feasibility of CIMT and educational initiatives to facilitate its translation into clinical practice. The purpose of the study is to explore current knowledge, experience in delivering and application in the practice of CIMT among occupational therapists and physiotherapists practicing in stroke neurological rehabilitation within (Selangor, Malaysia), and also to explore usage patterns of CIMT in terms of frequency of use, parameters of treatment, and barriers to use. This is quantitative, non-experimental research conducted online.

Keywords: Stroke, Constraint-induced movement therapy (CIMT), Rehabilitation, Survey, Upper Extremity

Paper ID: HS010

PREVALENCE, KNOWLEDGE OF ANEMIA, ATTITUDE, AND BEHAVIOUR PREVENTING ANEMIA AMONG FEMALE STUDENTS PURSUING TERTIARY EDUCATION

Liu Jie, T, Abdul Rahman, A, Subramaniam, K and Loganathan, A*

Faculty of Science, Universiti Tunku Abdul Rahman, Kampar
**annal@utar.edu.my*

ABSTRACT

Anemia is a serious health issue which affects one-third of female at their reproductive age, children, and elderly. Globally, the prevalence of anemia and the associated factors were well studied. However, studies on knowledge, attitude, and behavior preventing anemia are limited. The aim of this study was to investigate the prevalence, knowledge of anemia, attitude, and behavior to control anemia among female students pursuing tertiary education. A cross-sectional study was conducted by non-randomly selecting female students pursuing foundation and undergraduate studies at the University Tunku Abdul Rahman (UTAR), Kampar Campus, Perak. A pre-tested self-developed questionnaire was used to collect information on demography, knowledge, attitude, and behavior towards anemia. Students' height, weight, and hemoglobin concentration (g/dL) were measured.A total of 216 female students were enrolled in the study. The prevalence of anemia among the female students was 47.7%; mild anemia 49.5% and moderate anemia 50.5% respectively. The female students with anemia were; aged between 17-19 years old and prefer staying indoor during their leisure time.Furthermore, 54.6% of the female students with anemia possessed moderate knowledge of anemia and its prevention.Despite learning anemia in the science curriculumduring secondary or tertiary education, the students' practices towards anemia prevention were average. At the reproductive age and committing into tertiary learning, particularly female adults should practice preventing anemia as a health priority. Implementation of anemia prevention intervention in the healthcare sectors and education institutions is warranted.

Paper ID: HS011

A SURVEY ON IMPACT OF NUTRITIONAL STATUS OF CHILDREN UNDER MID-DAY MEAL PROGRAMME IN MADURAI

D. Mouna[1*] and S. Sumayaa[2]

[1]Research Centre of Home Science, Fatima College(A), Madurai.
[2] Thassim Beevi Abdul Kader College for Women, Kilakarai, Tamil Nadu, India.
**mounabala2000@gmail.com*

ABSTRACT

Evaluation of the nutritional status of a community is one of the initial phases of the plan of any public health strategy to battle malnutrition. Nutritional assessment is an in-depth evaluation of both objective and subjective data related to an individual's food and nutrient intake, lifestyle, and medical history. This will enable the determination of the degree of malnutrition and their severity, type and distribution in a particular region. Nutrition has a tremendous impact on children. The development of a child's mind is very important, and proper development is dependent on proper nutrition. To enhance enrolment, retention and attendance, and simultaneously improving nutritional status among children, Mid-Day Meal (MDM)programme was launched as a centrally sponsored scheme in August 1995 by the Government of India. The present study is explorative, so survey research using a self-designed questionnaire cum interview schedule was administered for collecting the perceptions about the MDM scheme from the beneficiaries and functionaries. The objective of the study was to identify the number of regular MDM consumers under the scheme, to assess the nutritional status of children. Total of 800 school-going children aged 6-13 years was randomly selected from seven government schools in Madurai. The study is confined only to the children studying primary and upper primary level. The selected schools were arranged in descending order of the number of children from age 6 to 13 years, who adopted noon meal in the schools. Total of 400 children beneficiary of MDM were randomly selected by adopting a proportionate random sampling method. Then, the same number of non-beneficiary children was randomly selected from the selected schools. Therefore, total sample children were for both beneficiary and non-beneficiary categories. Out of 800 school children, 400 children who participated in the noon meal programme were considered as beneficiaries and other 400 children who did not participate in the noon meal programme were considered as non- beneficiaries. Nutritional status was assessed by Anthropometric measurements, Biochemical estimation, Clinical examination and Dietary survey. In this study, anthropometric measurements were assessed and the scores obtained from the data were analysed and also compared with standards. The assessment leads to a plan of care, or intervention, designed to help the individual either maintain the existing nutritional status or attain a healthier status. On the whole anthropometric measurements were found to be better for beneficiaries than non-beneficiaries.

Keywords: Nutritional status, anthropometry, mid-day meal, noon meal programme

Paper ID: HS012

EVALUATION OF DIETARY INTAKE AND FOOD CONSUMPTION PATTERN OF INTELLECTUALLY DISABLED CHILDREN

Magdalene Virjini[1*] and Jagan Mohan[2]

[1]*Food & Nutrition, Mother Teresa Women's University, Kodaikanal, India*
[2]*Dept. of Food Product Development, IIFPT, Thanjavur, India*
**mags241970@gmail.com*

ABSTRACT

Intellectual Disability is characterized by subaverage intellectual functioning, existing concurrently with limitations in conceptual, social, and practical adaptive skills. Intellectual Disability affects 3% of the total pediatric population. Disabled children are known to be at high risk for developing malnutrition, which may partly explain the growth retardation often encountered in such children. The most common problems associated with malnutrition in disabled children are inadequate nutrient intake either due to feeding problems or poor feeding knowledge among care providers.The aim of this study is to determine the dietary intake and food consumption patterns of intellectually disabled children. The study was carried out at various special schools in Madurai city, Tamil Nadu, India. Hundred and eighty-three intellectually disabled children attending special schools were enrolled for the study. An interview schedule was framed and the pertinent information regarding the socio-economic status of the families, food consumption pattern and nutrient intake were collected from the parents and caretakers of the children. The quantitative aspects of consumption were studied by the 24-hour recall method. The results of the study revealed that out of 183 intellectually disabled children 47 percent belonged to the age group of 9-10 years and 53 percent in the age group 11- 12 years. The percentage of boys (55%) was more than girls (45%). The prevalence of mild disability was found to be more in the population studied. More than 50 percent of the children were undernourished. The prevalence of undernutrition was found to be more in the age group 11-12 years and considering the gender undernutrition was prevalent in boys compared to girls. Consumption of all the nutrients by both the genders was found to be less except for the consumption of fat in boys. The results also further highlighted that the overall consumption of all the food groups was found to be less compared to the RDA except for cereals in 10-12 year boys and the age group 9-12 years except sugar and fat all the other food groups were consumed in deficit amount compared to the suggested RDA in girls. Thus it could be concluded that the prevalence of malnutrition is high among intellectually disabled children and early detection through nutritional assessment and nutritional intervention can improve the quality of life in children with intellectual disability.

Keywords: Intellectual disability, Malnutrition, Nutritional Assessment

Paper ID: HS013

STUDY ON THE ACADEMIC PERFORMANCE OF ANAEMIC ADOLESCENT GIRLS

Helen[1*] and Jagan Mohan[2]

[1]Research Centre of Home Science
[2]Department of Food Product Development, IIFPT, Thanjavur
**chelenfsn@gmail.com*

ABSTRACT

Adolescent girls are vulnerable to anaemia. During this stage, adolescents achieve 15%-20% of their adult height, up to 60% of their skeletal mass, and half their adult body weight. In the case of adolescent girls, regular blood loss that occurs with menstruation increases iron losses and thus iron requirements. Insufficient iron stores may lead to numerous functional consequences such as impaired maximal work capacity; decreased immunological competence; behavioural abnormalities and reduced academic performance. The present study was conducted to assess the academic performance of college-going adolescent girls in relation to anaemia. About 514anaemicadolescent girls were selected. An interview schedule was used as a tool to obtain information regarding the demographic profile, dietary habits and academic performance. Haemoglobin level was estimated. Student's t-test and Chi-square test were employed. All the participants were within the age group of 17 to 19 years. From the findings, it is evident that about 6.6%, 55.7%, 35.1% and 3.1% of anaemic adolescent girls were high performers (above 80%), moderate performers (60-80%), low performers (40-60%) and very low performers (less than 40%) respectively. The findings also revealed that there is a significant difference between the anaemic status and academic performance of the adolescent girls. Therefore, it is concluded that the majority of the selected anaemic adolescent girls belonged to the moderate and low-performance category and only a minimum percent of anaemic adolescent girls were high performers. Early identification and treatment of anaemia are necessary for improving the academic performance among adolescent girls.

Keywords: Adolescent girls, Anaemia, Academic Performance

Paper ID: HS014

APPLICATION OF ZINC OXIDE NANOPARTICLES TO TREAT INFECTIONS CAUSED BY GRAM NEGATIVE BACTERIUM *PSEUDOMONAS AERUGINOSA*

Kirbashini Dhanasegaran and Sinouvassane Djearamane*

Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia

**sinouvassane@utar.edu.my*

ABSTRACT

Recently, zinc oxide nanoparticles (ZnONPs) are utilized in treating bacterial infections caused by *Pseudomonas aeruginosa*, which is a Gram negative bacterium causing a nosocomial and wide range of skin and wound infections. The present study was aimed to investigate the surface interaction of ZnONPs on *P. aeruginosa*. The study investigated the antibacterial properties of ZnONPs through the morphological changes caused by ZnONPs on *P. aeruginosa* at 24 h. Fourier transforms infrared (FTIR) analysis exhibited the involvement of biomolecules such as polysaccharides, molecular hydrogen bonds, and polypeptides from the bacterial cell wall in the surface binding of ZnONPs on the bacterial cells. The binding of ZnONPs on the functional groups of the bacterial cell wall has led to the deterioration of cell membranes, which was intelligibly illustrated the antibacterial effects of ZnONPs on *P. aeruginosa* by scanning electron microscopy (SEM). The SEM micrographs showed cell clumping, disrupted cell wall integrity, cell bending, roughening of the cell surface, and cell distortion as a result of ZnONPs interaction on *P. aeruginosa.* Therefore, the present study results indicate the potential application of ZnO NPs in treating skin infections caused by *P. aeruginosa* as wound patches.

Keywords: Zinc Oxide Nanoparticles, *Pseudomonas aeruginosa*, Scanning Electron Microscopy, morphological alterations

Paper ID: HS015

SURFACE INTERACTION OF ZINC OXIDE NANOPARTICLES ON GRAM POSITIVE BACTERIUM *BACILLUS SUBTILIS*

Anusheyalini Sundaraji and Sinouvassane Djearamane*

Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia
**sinouvassane@utar.edu.my*

ABSTRACT

Nanotechnology has ascended as a promising and far ranging prospect in biomedical applications. Zinc oxide nanoparticles (ZnONPs), as one of the metal nanoparticles, are generally used to treat various bacterial infections due to their antimicrobial properties. The present study was aimed to study the surface interaction of ZnO NPs on the wound infection causing Gram-positive bacterium *Bacillus subtilis.* The characterization of ZnONPs was carried out using the scanning electron microscope (SEM) with energy dispersive X-ray (EDX). The SEM analysis was performed to investigate the morphological changes in the bacteria after the treatment of ZnONPs. Fourier transforms infrared (FTIR) analysis was performed to identify the functional groups involved in the surface binding of ZnONPs on the bacterial cell wall. FTIR spectrum exhibited the involvement of biomolecules such as polysaccharides, hydrocarbon, and glycogen from the bacterial cell wall in the surface binding of ZnONPs on the bacterial cells. The SEM EDX results showed a significant accumulation of ZnONPs on bacterial cells and the SEM image on *B.subtilis* after treating with ZnONPs treatment illustrated the cell membrane rupture, and cell distortion. The treatment of ZnO NPs has shown an effective antimicrobial effect on *B.subtilis*.

Keywords: Zinc Oxide Nanoparticles, *Bacillus subtilis*, FTIR, SEM

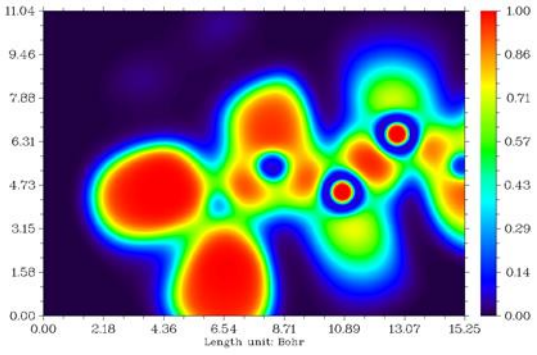
Paper ID: HS016

AN INVESTIGATION ON INTERACTION OF HYDROXYCHLOROQUINE WITH SARS-COV-2- A STRUCTURAL, ELECTRONIC, TOPOLOGICAL AND REACTIVITY PROPERTIES VIEW.

R.Niranjana Devi*
Fatima College, Madurai-18, Tamilnadu, India.
*niranjana.is14@gmail.com

ABSTRACT

Hydroxychlroquine possesses a long history of clinical use in the treatment of lupus erythematosus, rheumatoid arthritis and malaria, which is also effectual in inhibiting SARS-CoV-2 infection in vitro. In this work, the energy minimized structure of the potent drug Hydroxychloroquine was discussed along with its bond properties. The spectroscopic studies of the molecule were carried out in order to shed light into the bonding details. The electron density distribution of the molecule Hydroxychloroquine was accomplished using the theoretical calculations which were performed at the B3LYP/6-31G** level of theory to obtain the bonding details, concentration/depletion of charges and the topological properties of the molecule in an elaborated manner which further helps to derive the one electron properties. The information retrieved from the global reactivity descriptors and Lipinski rule were helpful to understand the molecule's nature of reactivity and site selectivity. The calculated charges through AIM and Mulliken population analysis rendered better information of the charge distribution in the molecule. The lone pairs of the O and N atoms were visualized through the electron localization function (Fig1). The electrostatic potential (Fig.2) and docking analysis assisted to pinpoint the sites of electrophilic and nucleophilic attack likely to happen during the interaction of the amino acid residues present in the drug candidate Hydroxychloroquine with SARS-Cov-2. On the whole, this work yields an intricate detail of the structural, topological, electrostatic, reactivity properties and drug receptor interaction of the drug Hydroxychloroquine with the target protein SARS-Cov-2 in a detailed manner which further assists in the outline of novel drugs with improved potential and lower side effects.



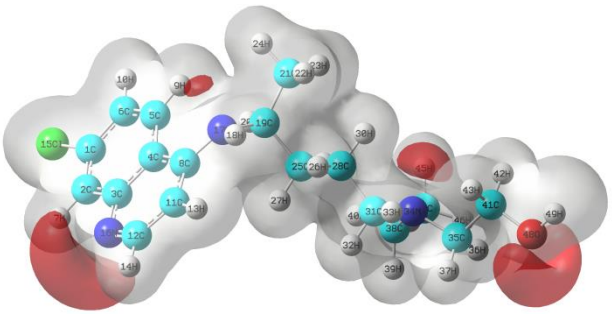


Fig.1- Electron localization function map **Fig.2**-Electrostatic potential map of the drug Hydroxychloroquine.

Keywords- Charge density, reactivity, electrophilicity index, electrostatic potential, docking analysis.

Paper ID: HS017

ANTIBACTERIAL PROPERTY OF ZINC OXIDE NANOPARTICLES ON STAPHYLOCOCCUS EPIDERMIDIS

Melvina Ann Robert and Sinouvassane Djearamane*

Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia
**sinouvassane@utar.edu.my*

ABSTRACT
Nanotechnology is a technology that interests many researchers in modern material science. Varieties of novel applications are contributed by nanotechnologies such as fabric compounds, food processing, agricultural production, and some medicinal techniques as well. Among the several metallic nanoparticles, zinc oxide nanoparticles (ZnONPs) are considered as a practicable solution to treat infectious diseases. Zinc oxide nanoparticles can be used in different applications such as anticancer, bioimaging, antidiabetic, wound healing, anti-inflammatory, antibacterial, antifungal, and drug carrier agents. However, the focus of this study was to evaluate the antibacterial property of ZnONPs on the skin and wound infection causing Gram-positive bacterium *Staphylococcus epidermidis* by investigating the growth inhibitory effect, surface interactions and morphological alterations of *S. epidermidis* caused by ZnONPs. Zinc oxide nanoparticle was characterized using a scanning electron microscope with an energy dispersive X-ray (SEM-EDX). The turbidity method was used to determine the growth inhibition of *S. epidermidis* after 24 hours of ZnO NPs treatment with six different concentrations such as 5, 10, 20, 40, 80, and 160 µg/mL. Fourier transforms infrared (FTIR) analysis was used to identify the functional groups involved in the binding of ZnO NPs on the bacterial cell wall. A dose-dependent growth inhibitory effect of ZnO NPs was recorded and significant ($p< 0.05$) growth inhibition for all the tested concentrations of ZnO NPs except 5 µg/mL was identified. Several biomolecules such as polypeptides, polysaccharides, amides were recognized to be involved in the surface binding and the cellular accumulation of ZnO NPs on the bacteria surface. Further, this study evidently demonstrated the destruction of the bacterial cell membrane as the rationale for the bacterial cell death caused by ZnO NPs.

Keywords: Zinc Oxide nanoparticles,*Staphylococcus epidermidis*, growth inhibition, SEM, FTIR

Paper ID: HS018

EFFECT OF ZINC OXIDE NANOPARTICLES ON SACCHAROMYCES CEREVISIAE

Tan Eng Pei and Sinouvassane Djearamane*

Department of Biomedical Science, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, Perak, Malaysia
**sinouvassane@utar.edu.my*

ABSTRACT

Nanotechnology has emerged as a promising technique for various biomedical applications lately. Zinc oxide nanoparticles (ZnO NPs), as one of the metal nanoparticles, are widely used to treat a range of dermatological infections due to their antibacterial and dermatologic-associate properties. The current study aimed to determine the antifungal properties of ZnO NPs against *Saccharomyces cerevisiae* on the skin. The antifungal potential was evaluated through the surface interaction of ZnO NPs on the yeast cell wall. The surface interactions of nanoparticles and morphological alterations on yeast cells were examined by SEM. The SEM images of *S. cerevisiae*treated with ZnONPs displayed regional invagination and pitting, cracks and deformity, cell wrinkle, and cell rupture.The results had clearly shown that the destructive impact of ZnO NPs on *S. cerevisiae*. Hence, the present study illustrated the antifungal effects of ZnO NPs on *S. cerevisiae*.

Keywords: Zinc Oxide nanoparticles, *Saccharomyces cerevisi*ae, SEM

Paper ID: HS001AF

NUTRACEUTICALS AND FUNCTIONAL FOODS, A STRATEGY TO EMPOWER WOMEN'S HEALTH

Neevitha Arunprabhu

RASS Academy College of Nursing, Sivagangai, Tamilnadu, India
nividasurendran@gmail.com

ABSTRACT

Healthy living for women includes a diet with plenty of fruits and vegetables, regular exercise, and some lifestyle changes. This is especially important for women suffering from hormonal changes at different stages of life. Instant Nutrition, Chemoprevention through dietary phytochemicals, therapeutic and nutraceutical potential of bioactive compounds assist in the role of prevention and treatment of diseases. Functional foods contribute to Sustainable health where their secondary metabolites prevent life-threatening chronic diseases like Cardio Vascular Diseases, Diabetes, obesity, hypertension, arthritis, cancer, and include health benefits such as performance enhancement, stress relief, anti-inflammatory, immune modulation and increase in memory.Biodiversity conservation empowers people to become active agents of sustainable and equitable development. Women as agents and recipients of development are identified as most important consumer groups for functional foods because they have more specific health and nutrition needs than men, such as during pregnancy, post-partum period, menstruation, and menopause. Gym instructors and nutritionists are the most important source of information for functional foods. Some functional foods including basic nutrients have a beneficial influence on the physiological changes that occur during exercise. Conscious eating and intentional supplementation through food sources with the cumulative effect of several components like soy proteins and isoflavones, omega 3 fatty acids from fish oils including EPA and DHA also plant sterols enriched foods fortify women's health. Emerging processing techniques for functional foods and Nutraceuticals to improve the quality is inevitable with the concern on the World Food Day celebration for finding solutions to hunger, malnutrition, and poverty in the world. Recent studies on understanding the food bioactive compounds and their extraction from fruit residues will go along with the 2030 agenda for Sustainable Development whose stand-alone goal is women empowerment.

Keywords: Chemoprevention, Nutraceuticals, Functional foods, Sustainable health, Biodiversity.

Paper ID: HS001F

THE EFFECT OF AEROBIC EXERCISES ON PAIN, QUALITY OF LIFE IN PRIMARY HEADACHE - A LITERATURE REVIEW

Kiruthika Selvakumar

Department of Physiotherapy, Universiti Tunku Abdul Rahman, Bandar Sungai Long, Kajang, Selangor, Malaysia
kiruthika@utar.edu.my

ABSTRACT

Background: Headache disorders are among the most common disorders of nervous system. According to World Health Organisation reports that almost half of all adult's worldwide experience headache in any given year. Based on research, headache classified into: primary and secondary headaches. Depending on global prevalence the most common primary headaches are migraine, tension-type and cluster headaches. If left untreated it can result in increased pain, decreased quality of life. The objective of this literature review is to analyse the effect of aerobic exercise on pain and quality of life among subjects with primary headaches like migraine, tension type and cluster headache and to discuss the current updates in literature. **Methods**: In this review, relevant data available in PubMed, Cochrane and Medline databases were retrieved for the period of 2010 to February 2020 using the search terms aerobic exercise and tension-type headaches, aerobic exercise and migraine, aerobic exercise and cluster headaches, pain and quality of life. The search strategy identified five articles that considered the effect of aerobic exercise on primary headaches like migraine, tension type and cluster. **Results:** Results have positive effects for aerobic exercise on tension-type headache, migraine headache mainly on pain intensity, whereas quality of life is less studied. On the other hand, these studies did not provide a specific protocol or parameter on exercise intensities. **Conclusion**: The availability of data on influence of aerobic exercise on primary headaches though is limited, aerobic exercises are best option for reducing pain and improving quality of life in primary headaches especially for tension type and migraine type headaches.

Keywords: Types of primary headache, aerobic exercise, pain. quality of life.

Paper ID: HS002F

CHEMICAL INVESTIGATION AND ANTIPROLIFERATIVE STUDIES OF ISOLATED POLYISOPRENYLATED BENZOPHENONES FROM STEM-BARK OF *GARCINIA MAINGAYI*

Sangeetha Arullappan[1*], Wong Fai Chu[2], Lim Chan Kiang[3], Vivien Jong Yi Mian[4] and Sim Kooi Mow[5]

[1]Department of Allied Health Sciences, Faculty of Science, Universiti Tunku Abdul Rahman, Perak Campus, Bandar Barat, Jalan Universiti, 31900 Kampar, Perak, Malaysia.
[2,3,5]Department of Chemical Sciences, Faculty of Science, Universiti Tunku Abdul Rahman, Perak Campus, Bandar Barat, Jalan Universiti, 31900 Kampar, Perak, Malaysia.
[4]Centre for Applied Sciences, Faculty of Applied Sciences, Universiti Teknologi MARA, Samarahan Campus 2, Jalan Meranek, 94300 Kota Samarahan, Sarawak, Malaysia.
[*]sangeetha@utar.edu.my

ABSTRACT

Medicinal plants either pure or standardised compounds have potential in therapeutic drugs development. Sequential solvents extraction from stem-bark of *Garcinia maingayi*, a native plant to Malaysia has led to the isolation of four polyisoprenylated benzophenones: 30-*epi*-cambogin (GB 1), 14-deoxy-30-*epi*-cambogin (GB 2), guttiferone F (GB 3) and 14-deoxy-guttiferone F (GB 4). The structures were elucidated utilising IR, optical rotation, LC-MS and NMR spectral data. The compounds were further evaluated for antiproliferative effect using MTT assay, apoptosis using Annexin V/7-AAD flow cytometry, cell cycle progression using propidium iodide, activation of caspases 3/7, 8 and 9 and BCL2 mRNA expression in MCF-7, HeLa and HepG2 cancer cell lines. Compounds GB 1 to 4 exhibited potent antiproliferative effect against HeLa, MCF-7 and HepG2 cells with IC_{50} values ranging from 5 to 45 µM. Compounds GB 1 to 4 induced significant cell cycle arrest in G1 phase corroborated with the decrease in the number of MCF-7 and HepG2 cells in S and G2/M phases ($P<0.05$). Compounds GB 1 to 4 were confirmed to induce apoptosis at 48 h in Annexin V/7-AAD staining. Compounds GB 1 and 2 induced significant levels of caspases 3 and 9 in HeLa cells, while GB 3 induced caspase 9 activities in both MCF-7 and HepG2 cells. No significant induction of caspase 8 was observed suggesting that the apoptotic effects are mainly mediated through the intrinsic pathway. CompoundGB 1 inhibited the BCL2 mRNA expression significantly, however, no effects were observed in all cells treated with compounds GB 2 to 4. In conclusion, these compounds possess anticancer properties and thus warrant further investigation on the mechanistic study, structure-activity relationship and identification of putative molecular targets are crucial.

Keywords: *Garcinia maingayi*, polyisoprenylated benzophenones, apoptosis, caspases, flow cytometry

Paper ID: HS005F

BRAIN COMPUTER INTERFACE (BCI) ON ATTENTION: A SCOPING REVIEW

Anita Prem[1*], Mohanraj[2] and Rajan Samuel[3]

[1]*Vinayaka Mission's College of Physiotherapy, Vinayaka Mission's Research Foundation (Deemed to be University), Salem-636308, Tamilnadu, India*
[2]*Vinayaka Mission's College of Physiotherapy, Vinayaka Mission's Research Foundation (Deemed to be University), Salem-636308, Tamilnadu, India*
[3]*Vinayaka Mission's College of Physiotherapy, Vinayaka Mission's Research Foundation (Deemed to be University), Salem-636308, Tamilnadu, India*
[*]*anitapremphysio@gmail.com*

ABSTRACT

Technological innovations are now an integral part of healthcare. Brain-computer interface (BCI) is a novel technological intervention system which has been found to be useful in restoring function to people disabled by neurological disorders such as attention deficit hyperactivity disorder (ADHD), amyotrophic lateral sclerosis (ALS), autistic spectrumdisorder(ASD), cerebral palsy, stroke, or spinal cord injury. This scoping review provides an overview of the literature concerning the effectiveness of BCI on attention in subjects under various conditions. We conducted a search of the databases Pubmed, Web of Science, and Scopus using the search terms "BCI in attention", "BCI on cognition" and "Neurofeedback training on attention using BCI". A narrative summary has been undertaken to describe the current state of the literature. 23 researches were identified from these studies meeting the inclusion criteria.The findings of this scoping review are that studies have been made on ADHD, ALS, ASD subjects, and subjects recovering from brain and spinal cord injuries.BCI based neurofeedback training has been found to be effective in improving attention in these subjects. Some studies have also been made on healthy subjects. BCI based neurofeedback training promises neurocognitive improvement and EEG changes in the elderly. Different cognitive assessments have been tried on healthy adults. From this review it is evident that hardly any research has been done on using BCI for enhancing attention in post-stroke subjects. So there arises the necessity for making a study on the effects of BCI based attention training in post-stroke subjects, as attention is the key for learning motor skills which get impaired following a stroke.

Keywords: attention, brain computer interface (BCI), neurofeedback training.

Paper ID: HS006F

CHALLENGES OF PHYSIOTHERAPIST DURING PROSTHESIS REHABILITATION IN MALAYSIA

Chong Li Chi[1], Vinodhkumar Ramalingam[2]*

[1,2]*Faculty of Health and Life Science, INTI International University, Nilai, Malaysia*
**vinodh.ramalingam@newinti.edu.my*

ABSTRACT

Aim. This paper reports a study investigating the challenges faced by the physiotherapist during prosthesis rehabilitation in Malaysia. **Background.** Mortality rates after lower limb amputation are respectively high, however, it could be lowered by providing proper rehabilitation services. However, challenges faced by the physiotherapist during rehabilitation might affect the effectiveness of the rehabilitation. Whereby, effective prosthetic rehabilitation is vital in maintaining or improving the quality of life and the physical function of an amputated patient. It is important to identify the possible challenges faced by therapists during rehabilitation so that they take the necessary precautions in order to better overcome future challenges. **Methods.** A purposeful sample of Malaysian physiotherapists who have experience in rehabilitating amputees was selected. Participants were to complete a self-administered electronic questionnaire including 20 questions. The research attempted to explore the challenges faced by physiotherapists during prosthesis rehabilitation through an interpretative framework involving quantitative research method. **Findings.** While healthcare professionals were enthusiastic about the effect of inpatient rehabilitation for amputee patients, physiotherapists in Malaysia faced several challenges during prosthesis rehabilitation that affect the effectiveness of the rehabilitation. The barriers were inconsistent and complex, including patient factors, healthcare provider's factors, environmental factors, other factors. **Conclusion.** The study has highlighted challenges faced by the physiotherapists during prosthesis rehabilitation so as to raise awareness and at the same time create ideas for specific health care practitioners to overcome the barriers, therefore shortening the length of rehabilitation and enhancing the effectiveness of the rehabilitation as well as to lower the mortality.

Keywords: Prosthesis rehabilitation, quality of life (QOL), mortality rate, challenges

Paper ID: HS009F

A SYSTEMATIC REVIEW ON THE PREVALENCE OF MENTALLY CHALLENGED ADOLESCENTS IN INDIA AND THE EFFICACY OF DIETARY SUPPLEMENTS WITH HERBS ON COGNITIVE FUNCTION

Manjula* and Karthiga

The Research Centre of Home Science, Fatima College (Autonomous) Madurai, India
** arjun.maya1@gmail.com*

ABSTRACT

Health is vital for productivity, growth and development. Health is the state of well-being in physical, social, spiritual and mental health. Apart from physical health, mental health is prime importance. The brain is one of the most complex organ in the body. Brain has multiple tasking ability like learn, play, concentrate, remember and it helps in sustaining a clear mind. Brain comprises around 60% fat with omega 3 fatty acid and Docosahexaenoic acid. These both supports the normal neuronal membranes. The modern diet lacking in omega 3 and DHA may have adverse effect on cognitive development. In the world, India stands second place with the population of 135.26 crores. India comprises of one fifth of adolescents' population that is around 27.05%. According to the World Health Organization (1989) adolescents are the individuals between the age of 10 -19 yrs. According to the American Association on Intellectual and Developmental Disabilities "Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behaviour**.** Mental health in adolescents is neglected and it increased the morbidity and mortality during recent years. Cognitive development in adolescence occurs at three main areas. The three areas are advanced reasoning skills, abstract thinking, and formal operational thinking. The psychiatric disorders in adolescents begins before the age of 14 and nearly 50% of adolescents are affected during this period. The remaining 20% of adolescent's population are affected by predisposing or precipitating factor. Plants have been used as a medicine based on folk remedies and experience. Due to the immense potential of medical plants, the research work was planned to carried out on plant based medicine. Various nutraceuticals and pharmaceutical components have been derived from medicinal plants. Centella asiatica, Bacopa monnieri and various herbs are rich in omega 3, Alpha linolenic acid, Minerals and Vitamins. These medicinal plants help in cognitive development and as memory enhancer.

Keywords: Cognitive development, Mental retardation, Adolescents, Herbs.

Paper ID: HS010F

IMPORTANCE OF NUTRITION ASSESSMENT IN CRITICALLY ILL PATIENTS

Suganya[1] and Vasantha Esther Rani[2]

[1]*Madurai Kamaraj University, Madurai, India.*
[2]*Home Science Department, Fatima College, Madurai, India.*
** suganya101973@gmail.com*

ABSTRACT

BACKGROUND / AIMS: Critically ill patients admitted in ICU are in malnourished status and it's a serious health issue Malnutrition has been correlated with prolonged hospital stays nutritional related complications during and after hospitalisation and other adverse outcomes hence nutritional screening assessment and nutritional status diagnosis of malnourished patients are key components of nutrition care. Nutritional assessment helps to improve quality of nutritional care. It is a prospective study conducted to assess critically ill patient's nutritional status on the ICU admission and discharge day through various clinical indicators. This study also aimed to assess the correlation of mortality prediction score APACHEIV, SOFA scores on admission with patient's length of stay in ICU and hospital along with patient outcome. **METHODS:** This was an observational prospective hospital study carried out for 3 months from December 2019 to February 2020 in multidisciplinary ICU in a multispecialty hospital in India, Tamilnadu, Madurai. All adult patients with ≥ 72 hours of ICU-LOS were included and their nutritional assessment completed by SGA – Subjective Global Assessment forms. This process was completed soon after their ICU admission (within 24 hours). Data collection started with important variables such as: Age, Nutritional status, APACHE IV, SOFA score, presence of comorbidities. All the participants were studied about their duration of stay inside ICU and hospital, Predicted Mortality rate, & discharge outcome. **RESULTS:** 120 patients were involved in the study in the age 62.2±14.1 years, 55.3% males 44.7% females nutritional assessment done for all patients which revealed that 50%, 43%, 17% were well nourished, moderately malnourished, severely malnourished respectively. Strong correlation observed with nutritional status, morbidity and their prolonged stay in ICU among the critically ill patients. ICU & hospital mortality percentage was indicated as Mean ± SD 37% and 45% respectively. Timely nutrition intervention and medical nutrition therapy reduces duration of patient stay in ICU and hospital and improved patient outcome. Mean ± SD for duration of stay in ICU and hospital was 13, 20 days respectively. Patient's average duration of stay within ICU and hospital was 7.9 days, 27.4 days respectively. Patient's mean ventilator free days was noted as 6.9 days. The participants' anthropometric data decreased considerably (mean weight, MUAC, calf circumference) during ICU discharge day. BMI comparison on admission and discharge didn't showed significant change. **CONCLUSION:** A timely assessment of nutritional status in critically ill ICU patients is crucial which help to maintain good nutritional status and avoid nutrition depletion and it is a most important component for achieving optimum nutrition goal. Medical nutrition therapy at appropriate time prevent ICU morbidity and mortality thereby duration of ICU/hospital stay will be minimised. A disease severity scoring system can be used as guidance for objective assessment of disease outcomes and estimation of the chance of recovery.

Paper ID: HS011F

Does Playing Location-Based Augmented Reality Game Increases The Level Of Physical Activity?

Low Ann Gee[1], Ambusam Subramaniam[2]*, Sivaguru Muthusamy[3], Rajkumar Krishnan Vasanthi[4]

[1, 2,4]Physiotherapy programme, INTI International University, Nilai, Negeri Sembilan, Malaysia
[3]Department of Physical Education & Health Sciences, Alagappa University, Tamil Nadu, India
[*]ambusam_7@hotmail.com

ABSTRACT

While awareness on the importance of exercises in daily life is on rising trend, physical inactivity is still been warned as a global issue that need to be addressed and overcome. Recently, there is an increase trend in location-based AR games that requires players to move around physically in order to acquire the in-game features as well as game bonuses. The introduction of this location-based augmented reality game, specifically, Pokémon Go, has made the players to physically move around to achieve higher level and indirectly, improves the level of physical activity. Thus, the objective of the current study is to examine the association between the time spent playing location-based AR games specifically Pokémon Go and the level of physical activity of the players in Malaysia. Self-administered questionnaires were circulated among Pokémon Go players and based on the inclusion and exclusion criteria, 47 players were recruited in the study, Global Physical Activity Questionnaire (GPAQ) was used to identify the level of physical activity among the players. The association between time spent playing Pokémon Go and level of physical activity were examined using Chi-square test. The results of the current study showed no significant association between days spent playing Pokémon Go and level of physical activity ($p = .14$), hours spent playing Pokémon Go and physical activity ($p = .516$) or between daily hours spent playing Pokémon Go and daily sedentary time ($p = .283$). Nevertheless, the mean of the study reported that the physical activity level of the players increased concurrently as the player's game frequency increases. Further in-depth studies are required to shed light on how location-based AR games can be implemented as potential strategies to get people moving and initiate an active lifestyle.

Keywords: Location-based augmented reality games, Pokémon Go, level of physical activity

Paper ID: HS012F

RESTORING THE SPIRIT BY AVOIDING STINKY FOOD IN ORDER TO PREVENT COVID 19 AND OTHER CONTAGIOUS DISEASE, A TAOISM AND TCM APPROACH.

Cheok Wee Teck

INTI International University, FHLS Department-TCM centre
weeteck.cheok@newinti.edu.my

ABSTRACT

Spirit in Taoism called Yuan spirit or Yuan Shen 元神or we call it Shen, is the superior host of the body. Traditional Chinese Medicine and Taoism believe that the Shen could govern the Qi, the Qi could govern the Body. All treatment approaches have to ensure the wellbeing of Shen, otherwise all the effort will be fruitless. Zhang Zhong Jing also believed that treatments should be favorable to the Shen. In the abstinence of external diseases in 《Shang Han Lun》, it suggests to stop consuming meat, five stinky vegetables, decaying and stinky items. The acupuncture points called Welcome Fragrance (LI20) which are located above the mouth signifies that all the food should be smelled by our nose before they could be entered into our mouth. Ancient Chinese showed their wisdom by creating Chinese words with intrinsic value. As a point in large intestine meridian, it implies that our body especially our stomach and intestine prefer fragrant food instead of stinky food. Our body which is governed by spirit is welcoming fragrant food and dislike smelly food which could generate pathogens like bacteria, viruses, worms. The stinky smell could impair the Shen and energy Yang. This correlate with several modern studies which had found out that the structure and the digestive acid of human is incapable to overcome the virus and bacteria. The result shown that we could treat and prevent the Covid 19 and other contagious diseases by stop consuming the stinky food

Keywords: Spirit, Shen, Stinky food, LI20, Covid 19, Digestive fluid, Virus

Paper ID: HS013F

DISCOVERING THE TRUTH OF COVID 19 AND OTHER CONTAGIOUS DISEASES BY APPLICATION OF THE THEORY OF CHANGES AND THE THEORY OF YIN YANG.

Cheok Wee Teck[1]* and Yean Chin Cheok[2]

[1]INTI International University, FHLS Department-TCM centre
[2]University of Putra Malaysia(UPM)-Nutritionist Department
**weeteck.cheok@newinti.edu.my*

ABSTRACT

The current pandemic COVID-19 continues to spread rapidly around the world. Some countries like United States, Italy, Sepanyol and United Kingdom are still at the peak of infection. The prolonged lockdown has caused serious impact on the socio-economy of the whole world. There is a growing concern of the link in between the animals based food product with all the contagious diseases as most of the pandemic are initiated from farming animals. The micro study of the virus or bacteria could trace the infectious pathway of the contagious diseases and find the substantial problem-solving solutions. Nevertheless, the root cause of the diseases still remained unknown. In view of this, it is essential to evaluate the root cause of the disease in the macro-scope of study. By discovering the designated function of all the microorganism from the insight perspective of The Theory of Changes and other Taoism theories, we could define the effective problem-solving solution. The result of the finding has discovered that the microorganism which bring the so called "contagious diseases" is actually the cure for Mother nature to resume its equilibrium. They are the agents of decomposition and transformation of the Mother nature. Corona Virus and other bacteria and viruses are the essential microorganisms being created by the nature in order to decompose the excessive animals' dead bodies that awash in the environment into the smaller particles or subtracts, transforming them into the useful nutrients to be absorbed and restored by the Mother earth. After we have identifying the deadly microorganism as the cure for Mother nature and recognize the harm that we have done on Mother nature, we could find out the root cause of the problem and solve the problem fundamentally.

Keywords: Covid 19, Contagious diseases, microorganism, Mother Earth, Equilibrium, The Theory of Changes.

Paper ID: HS014F

CHANGES IN EATING BEHAVIOURS FOLLOWING BARIATRIC SURGERY: A PROSPECTIVE STUDY

Kavitha Subramaniam1,2*, Wah-Yun Low3, Peng-Choong Lau4, Kin-Fah Chin4, Karuthan Chinna5, Nik Ritza Kosai6, Mustafa Taher6, Reynu Rajan6

[1]Medical Education, Research and Development Unit, Faculty of Medicine, University of Malaya, Malaysia
[2]Department of Physical and Mathematical Science, Universiti Tunku Abdul Rahman, Jalan Universiti, Bandar Barat, 31900, Kampar, Malaysia
[3]Dean's office, Faculty of Medicine, University of Malaya, Malaysia
[4]Department of surgery, Faculty of Medicine, University of Malaya, Malaysia
[5]School of medicine, Faculty of Medical and Health Science, Taylor's
[6]Minimally Invasive, Upper gastrointestinal and bariatric surgery, Department of surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia.
**kavithas@utar.edu.my*

ABSTRACT

Adopting healthy eating behaviour is important in achieving successful weight loss after bariatric surgery. This study aims to determine the changes in eating behaviours 6 months after surgery. Fifty-seven patients who went through bariatric surgery in two tertiary referral hospitals were recruited and interviewed before surgery (T_0), three months (T_1) and six months (T_2) after surgery. Eating behaviours were assessed using the Dutch Eating Behaviour Questionnaire (DEBQ), which measured emotional, external and restrained eating. Higher scores for the subscales indicate strong behavioural traits. Other information including psychological distress, quality of life, socio-demography and morbidity were collected. Genelised Estimating Equation (GEE) model was developed to study the change in eating behaviours and its' predictors over time. Participants of the study were mostly women, and of Malay ethnicity with a mean age of 39.4 years. Emotional and external eating scores changed significantly over time with the values recorded at various time intervals as follow: 2.06 and 2.86 prior to surgery; 1.64 and 2.25 three months after surgery; and 1.81 and 2.40, 6 months after surgery. Reduction in the third month followed by a slight increase at the sixth was noted. Restrainteating did not show a significant change. Presence of diabetes was associated with higher emotional and external eating scores. Higher anxiety scores were associated with higher external eating. Favourable changes in eating behaviours were noted. However, a risk reversal in the improvement was also present. The emotional and external eating behaviours should be identified and addressed accordingly with special attention to diabetic patients.

Keywords: eating behaviour, emotional eating, external eating, bariatric surgery, diabetes

Paper ID: HS017F

Education in Physiotherapy Department in University of Zawia in Libya

Mahmoud M. Dboba1*, W. Astiata2, Yahya. Alkamali3, A. al-Sheibani4

[1,2,3]*Department of Physiotherapy, Faculty of Medical Technology, University of Tripoli, Libya.*
[4]*Department of Physiotherapy, Faculty of Medical Technology, University of Zawia, Libya.*

**dbobam@gmail.com*

ABSTRACT

Physiotherapy is a specialist branch of medicine that helps remediate impairments in movement and promote patients' quality of life. Furthermore, Physiotherapy plays a crucial role in helping people who have lost their mobility or suffer from movement disorders. Educational criteria for physiotherapy providers vary from state to state and from country to country, and among various levels of professional responsibility. In this paper, an overview is made on Education in the Physiotherapy Department at the university of zawiya in Libya including the graduate students, staff members, and demonstrators from 2002-2012. In addition to assessing the impact and effectiveness of the educational process to support educational research. The data was collected from the documents in the department, In addition to the physiotherapy staff in the Physiotherapy Department at the University of Zawia. As a result, during 2002-2009, the medium number of graduate students was 5. While in 2009-2012 was a visible increase in the number of graduate students, so the medium was 18, due to the rise in the knowledge of physiotherapy importance, In addition, the raise of awareness there between the society and the students. On the other hand, the percentage of the national teachers' members and foreign teachers' members 46% and 36% respectively, while the assistant staff members were 18%. In addition, during 2002-2010, the demonstrators were 5. While in 2010-2012, there were 12. Due to the increase of the graduate students.

Keywords: University of Zawia, Education, Libya, Physiotherapy.

Paper ID: HS019F

Do music increases the motivation to perform exercises among university students? - A cross-sectional study.

Lai Yi Ying[1], Ambusam Subramaniam[2]

[1,2]Physiotherapy programme, INTI International University, Nilai, Negeri Sembilan, Malaysia
ambusam_7@hotmail.com

ABSTRACT

Regular exercise improves health as well as psychological well-being. Nevertheless, there is a high prevalence of physical inactivity among university students in Malaysia. Previous studies have shown the extend use of music during sports and exercise to improve motivation and performance. The aim of the current study is to examine the association between music and motivation to do exercise among university students in Nilai, Negeri Sembilan, Malaysia. The demographics data, use of music during exercise, preferred type of music and criteria to select music were assessed by validated self-administered questionnaire. The motivation towards exercises was evaluated using the Behavioural Regulations in Exercise Questionnaire (BREQ-3) while level of physical activity wase assessed by Godin-Leisure Time Exercise Questionnaire (LTEQ). The demographics information, use of music during exercise, preferred type of music and criteria to choose music were tabulated using descriptive statistics to report frequency and percentage. Point-biserial correlation was used to analyse relationship between music and motivation to do exercise while chi-square was utilized to determine association between use of music during exercise and physical activity level. The results of the current study shown 80.3% of the participants listen to music during exercise. Across those who listen to music while exercising, energetic and rhythmic was the preferred type of music for exercise. Tempo/ speed/ bpm was the most popular factor to be considered when the participants choose music for exercise. Most of the participants prefer to listen to individual music player during exercise rather than open audio system. Listening to music during exercise shown significant correlation with amotivation (p=0.006), external regulation (p=0.014), identified regulation (p=0.006), integrated regulation (p=0.002) and intrinsic regulation (p=0.015). There was significant association between use of music during exercise and physical activity level (p=0.003) in this study. Future research that involves type of exercise performed with the music is encouraged to explore significant of music as motivational tool in exercise.

Keywords: Music, Motivation of exercise, Physical activity

Paper ID: HS020F

ANTIBACTERIAL ACTIVITY OF *TRIGONELLA FOENUM-GRAECUM* ESSENTIAL OIL, AQUEOUS AND ETHANOLIC EXTRACTS AGAINST SKIN PATHOGENS

Geetha Subramaniam*, Rayshen Renganaden Poolee Cootee, Cheah Cheng Han, and Lalita Ambigai Sivasamugham

INTI International University, Persiaran Perdana BBN, Putra Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
**geetha.subramaniam@newinti.edu.my*

ABSTRACT

The increase in antibiotic resistance globally necessitates the search for alternative therapeutic agents. Among the common antibiotic resistant bacteria, methicillin-resistant Staphylococcus aureus (MRSA) and methicillin-resistant Staphylococcus epidermidis (MRSE) cause a wide range of infections with limited treatment options. Trigonella foenum-graecum has been used widely particularly in Asian countries in food and as a supplement. In this study, the antibacterial activity of T. foenum-graecum (essential oil, boiled aqueous and ethanolic extracts) against S. aureus, S. epidermidis, Propionibacterium acnes, MRSA and MRSE was determined using the agar well diffusion assay. For determination of the zone of inhibition, Clindamycin (2 µg/disc) was used as a control for comparison of the antibacterial susceptibility results. The maximum zone of inhibition by T. foenum-graecum was observed i.e. a mean of 20 mm, with the boiled aqueous extracts against MRSA, while the essential oil and ethanolic extracts showed no zones of inhibition against all the Staphylococcal and P. acnes isolates tested. Qualitative phytochemical analysis revealed the presence of flavonoids and terpenoids in all three extracts tested, with the boiled aqueous extract containing the highest number of phytochemicals which could account for the higher antibacterial activity exhibited by the boiled aqueous extracts. Hence, the T. foenum-graecum seeds show a potential application as an antibacterial agent against skin pathogens, particularly in the formulation of a skincare product.

Keywords: Trigonella-foenum graecum, MRSA, MRSE, antibacterial

Paper ID: HS021F

EFFICACY OF FLAXSEED CRACKERS IN AMELIORATING CLINICAL AND BIOCHEMICAL HYPERANDROGENISM IN YOUNG ADULT SOUTH INDIAN WOMEN DIAGNOSED WITH PCOS

Jeyamani Divya Christodoss*, Priya John and Vasantha Esther Rani

Fathima college (Autonomous), India
**divyajc@yahoo.com*

ABSTRACT

Young women in their reproductive age are more prone to hormonal/endocrine disorders, the most common being Polycystic Ovarian Syndrome (PCOS). Research in different cultural contexts for enhancing the physical, emotional, social and reproductive health of women has been focus for several scientific studies. Earlier studies have indicated that high lignan foods reduce the bioavailability of free testosterone through increasing Sex hormone Binding globulin (SHBG) levels. Thus, the present study was designed to assess the efficacy of flaxseed (Linum usitatissiumum) a rich source of α-Linolenic Acid (ALA) and phytoesterogenic lignans (secoisolariciresinol diglucoside-SDG) as a potential functional food for PCOS. The primary objective of the study was to assess the effect of flaxseed crackers in ameliorating the biochemical and clinical characteristics of hyperandrogenism in PCOS women with special emphasis on serum concentrations of SHBG, total testosterone and insulin levels for a period of five months. A randomised single blind placebo-controlled trial was carried out with potentially eligible, willing and interested young college going women in the age group of 20-25 years identified from a single on campus hostel facility in the metro of Chennai based on the Rotterdam criteria of PCOS diagnosis. Questionnaires and personal interviews were conducted to elicit information on the menstrual regularity and clinical features of PCOS, namely hirsutism using the mFG (Ferriman Gallwey) score. The studyfound that the group supplemented with flax crackers had a statistically significant lower serum free testosterone concentrations (1.02 ± 0.428 ng/dl) compared to the placebo, the wheat crackers (1.64 ± 0.504 ng/dl), t = -2.897, p= 0.010 (<0.05) at the end of the study period. The serum total testosterone concentrations were also lowered (1.33 ± 0.500 nmol/L) as compared to the placebo (1.73 ± 0.467 nmol/L) though not statistically significant, t = -1.818, p = 0.086 (>0.05). Similarly, it was noted that the lowered levels of Sex hormone Binding Globulin (SHBG) at the beginning of the study was elevated to 15.22 ± 14.593 nmol/l as compared to only 9.64 ± 5.124 nmol/l in the placebo at the end of the study period though not statistically significant, t = 1.189, p = 0.250 (>0.05), thus creating a promising platform for improving the imbalances in the hormone levels. It was also noted that the elevated serum insulin concentration was lowered in the flax group (15.67 ± 6.928 µU/mL) as against the control group (19.09 ± 8.526 µU/mL). The FG score significantly (p = 0.043) reduced in the flax group before and after intervention attributing to the role of flaxseed in alleviating the clinical manifestation of hirsutism among PCOS women. The reduction in free testosterone levels, serum insulin levels and elevation of SHBG levels can be attributed to the lignan secoisolariciresinol diglucoside (SDG) a phytoestrogen present in significant amounts in flaxseeds. Thus, flaxseeds can be explored as an ideal functional food replacing the conventional drugs for PCOS.

Keywords: Young adult women, Reproductive health, PCOS, Flaxseeds, SHBG, Testosterone, Insulin, FG score, menstrual cycle.

Paper ID: HS022F

EFFECTS OF INDIVIDUALIZED TRAINING AND RESPIRATORY MUSCLE TRAINING IN IMPROVING SWIMMING PERFORMANCE AMONG COLLEGIATE SWIMMERS - AN EXPERIMENTAL STUDY

Sivaguru Muthusamy[1], Ambusam Subramaniam[2]* and Balasubramanian[3]

[1,2]Physiotherapy programme, INTI International University, Nilai, Negeri Sembilan, Malaysia
[3]Department of Physical Education & Health Sciences, Alagappa University, Tamil Nadu, India
**ambusam_7@hotmail.com*

ABSTRACT

In recent years, swimming has gained much popularity among people as a regular form of physical activity or even as sports. Swimming is been proved it is able to sustain good anthropometric indicators, influence the effect of blood pressure, reduce the morbidity risks and improve general well-being. Plenty of researches has been conducted to determine the types of training to improve swimming performance in combination with respiratory muscle training. Nevertheless, no study has been done on the individualized training approach among swimmers although various other sports have shown tremendous improvement in sport performance. Hence, this study aims (i) to examine the effects of respiratory muscle training on swimming performance among collegiate swimmers, (ii) to examine the effects of combined respiratory muscle training with individualized training on swimming performance among collegiate swimmers and (iii) to compare the differences between the isolated respiratory muscle training, combined intervention of respiratory muscle training with individualized training and usual training on swimming performance among collegiate swimmers. Forty-five collegiate swimmers (mean age 19.58±1.18) who were free from injuries and swims regularly atleast 1 hour per week participated in the current study. The swimmers were randomly assigned into three groups; Group A: Respiratory muscle training and Individualized Training (n=15, mean age 19.6±1.12), Group B: Respiratory muscle training alone (n=15, mean age 19.53±1.19) and Group C: Usual training session (n=15, mean age 19.6±1.12). The difference within the groups before and after four weeks intervention were analyzed using Paired T-test, while the differences between intervention groups were analyzed using repeated measure two-way ANOVA. Both the intervention groups (Group A and B) showed statistically significant ($p < 0.05$) improvement after four weeks of intervention, whereas in groups comparison, statistically significant differences were found with Group A (Respiratory muscle training and individualized training) showing tremendous improvement in swimming performance ($F (17,238) = 8.385$, $p<0.05$, $n_p^2 = 0.375$). Thus, the current study has proven that the combination of respiratory muscle training with individualized training could further enhance the swimming performance in terms of heart rate, Vo2 max, stroke volume, perceived exertion and SWOLF score as well as reducing the endurance and fatigue level among the swimmers. Future studies are required to be conducted among athletic swimmers with larger sample sizes to further examine the effects of individualized training approach in depth.

Keywords: Individualized training, Respiratory muscle training, Collegiate swimmers, Swimming Performance

Paper ID: HS023F

THE COMBINATORIAL EFFECTS OF *AZADIRACHTA INDICA*LEAF EXTRACTS WITH AMIKACIN AND TETRACYCLINE AGAINST CLINICALLY IMPORTANT BACTERIA

K. Tze Sin[1], L.A. Sivasamugham[2], K. Thrumaran[3], G. Subramaniam[4]

[1-4]Faculty of Health and Life Sciences, INTI International University, Persiaran Perdana BBN, Putra Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
lalitaa.sivasamugham@newinti.edu.my

ABSTRACT

Treatment of diseases caused by antibiotic-resistant bacteria is becoming increasingly limited. Combination of plant extracts and antibiotics are being studied as an alternative to antibiotics. Plant extracts such as Azadirachta indica (neem) has antimicrobial properties mainly due to the presence of secondary metabolites such as alkaloids and flavonoids. In this study, the combinatorial effects of neem leaf extracts with amikacin and tetracycline against clinically important pathogens were investigated using the agar well diffusion assay. The combination of neem leaf extract and amikacin showed no significant changes in the diameter of the zone of inhibition when tested against Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pneumoniae and Pseudomonas aeruginosa as the diameter of zone of inhibition observed was the same as that of amikacin. An antagonistic effect was observed when Bacillus subtilis was exposed to the neem leaf extract and amikacin as a significant reduction ($p<0.05$) in the zone of inhibition was observed. However, no zone of inhibition was observed with Serratia marcescens when tested with neem leaf extract and amikacin combination. Synergistic effect of neem leaf extract and tetracycline was observed against Propionibacterium acnes, Bacillus subtilis and Streptococcus pneumoniae with significant enlargement ($p<0.05$). The combinatorial effect of neem leaf extract and tetracycline showed indifference against Streptococcus faecalis, Staphylococcus epidermidis, Enterococcus faecalis and Staphylococcus aureus compared to that the individual effects of neem leaf extract and tetracycline respectively. No zone of inhibition was observed with Pseudomonas aeruginosa and Serratia marcescens when tested with neem leaf extract and tetracycline combination. This study showed that the neem leaf extract and tetracycline had synergistic effect against Gram positive bacteria suggesting the potential future use of this combination for antibacterial agent development. However, this preliminary data require further investigation and test on a wider range of clinical isolates to make a more decisive conclusion. The antagonistic effect between the neem leaf extract and amikacin suggests that the individual agents are potent as antibacterial agents.

Keywords: Neem leaf extract, Amikacin, Tetracycline,Antimicrobial, Synergistic, Antagonistic

Paper ID: HS024F

A NARRATIVE REVIEW ON MINDFULNESS PRACTICES IN OPTIMIZING PERFORMANCE AMONG SPORTS INDIVIDUALS

Vinodh Kumar Ramalingam1, Cheong Soon Keng2, Poh Foong Lee[3]

[1]Faculty of Health and Life sciences, INTI International University, 71800 Nilai, Malaysia.
[2]Faculty of Medicine and Health Sciences, University Tunku Abdul Rahman, 50744 Kuala Lumpur, Malaysia.
[3]Faculty of Engineering and Science, University Tunku Abdul Rahman, 50744 Kuala Lumpur, Malaysia.
vinodh.ramalingam@newinti.edu.my

ABSTRACT

Mindfulness practice has become an increasingly popular intervention in optimizing athletic performance. Numerous studies have reported on applying mindfulness for improving the performance for various sports such as table tennis, shooting, cricket, archery, golf, running, hockey, swimming, and cycling. This narrative review addresses different approaches in existing mindfulness programs and challenges encountered by the athletes. To cope with the issues, the efficacy of mindfulness in sports performance and future research directions on mindfulness.

Keywords: Athletes, mindfulness, sports injury, sports performance

Paper ID: HS025F

INFLUENCE OF GENDER ON PAIN, QUALITY OF LIFE, AND PHYSICAL ACTIVITY IN PATIENTS WITH KNEE OSTEOARTHRITIS

Tan Xue Min, Vinosh Kumar Purushothaman and Yughdtheswari Muniandy *

Faculty of Health and Life sciences, INTI International University, 71800 Nilai, Malaysia.
eswari.muniandy@newinti.edu.my

ABSTRACT

Background: Osteoarthritis is the most common cause of knee pain leading to disability in adults. Besides pain, decline in physical function and quality of life are the major burden of these disease. Females have increased risk of knee osteoarthritis. However, little is known on the gender influence in the pain perception, quality of life and physical activity. Hence, the aim of this study is to investigate the influence of gender on pain perception, quality of life and physical activity in patients with knee osteoarthritis. **Methods:** A cross sectional study design was adopted with total of 186 patients with knee osteoarthritis (91 males 95 females) with mean age of 56.64 ± 6.49 were recruited. Pain intensity, level of physical activity and quality of life of patients were assessed using visual analog scale, global physical activity questionnaire (GPAQ) and Short Form-36 (SF-36) questionnaire respectively. **Results:** 52% of patients with knee osteoarthritis have relatively low level of physical activity with female represent the most. Lower mean was observed in quality of life and physical activity whereas pain intensity was higher in females compare to males with significant difference ($p < 0.05$). Pearson correlation demonstrate strong negative correlation between physical activity and pain ($r = -0.77$, $n = 186$, $p < 0.01$) and weak correlation exist between physical activity and all domains of quality of life except for the functional capacity and bodily pain. **Conclusions:** This study conclude majority of female participants with knee osteoarthritis exhibit poor quality of life, physical activity and increased pain intensity compared to males. It is important for clinicians to be aware on the influence of gender in treating patients with knee osteoarthritis.

Keywords: Pain; knee osteoarthritis; physical activity; quality of life

Paper ID: HS026F

TOXICITY OF ZINC OXIDE NANOPARTICLES ON HUMAN SKIN DERMAL CELLS

Harshyini Maheswaran[a], Ling Shing Wong[b],Anto Cordelia Tanislaus Antony Dhanapal[c], Narendhirakannan RT [d], and Sinouvassane Djearamane[a]*

[a]Department of Biochemistry, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, 31900 Malaysia; [b]Life Science Division, Faculty of Health and Life Sciences, INTI International University, Nilai, 71800 Malaysia; [c]Department of Chemical Science, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, 31900 Malaysia; [d]Department of Biochemistry, Kongunadu Arts and Science College, Affiliated to Bharathiar University, Coimbatore, Tamil Nadu, India
**sinouvassane@utar.edu.my*

ABSTRACT

Nanotechnology was introduced as a notion in 1959 and extensive development has been made in the field since then. One of the advantages of nanoparticles (NPs) is that they have increased surface areas in contrast to macrosized particles. Zinc oxide (ZnO) has unique chemical and physical properties and is therefore considered a multifunctional material. Because of its properties, ZnO can be used in a wide spectrum of applications such as electronic materials, sunscreens, pigments and most importantly biomedical applications. The major role of the skin is to act as a barrier to prevent breach of substances on the surface. Nanoemulsions containing ZnO NPs are progressively sought-after in cosmetic formulations and are well suited to a range of indications like sunscreens, antiaging products, and moisturizers. Zinc paste bandages or Unna boot composed of open wove cotton gauze impregnated with ZnO paste remain as standard treatments for leg ulcers. Damaged and broken skins are vulnerable to ZnONPs uptake. This being the case, ZnONPs on skin surface can affect the functions of surrounding cells in numerous ways by penetrating the skin. This can ultimately cause toxicity to the person over a period of time depending on the concentration and site of ZnONPs' exposure. This review brings together several studies on the toxicity of ZnONPs on human skin dermal cells and will aid in the understanding and development of safer products containing ZnONPs. Otherwise, the ZnONPs on skin surface may cause health hazards to the user.

Keywords: Toxicity, zinc oxide nanoparticles, skin dermal cells

Paper ID: HS027F

THERAPEUTIC APPLICATIONS OF *SPIRULINA* AGAINST HUMAN PATHOGENIC VIRUSES

Sharolynne Xiao Tong Liang[a], Ling Shing Wong[b], Anto Cordelia Tanislaus Antony Dhanapal[c], Prakash Balu[d] and Sinouvassane Djearamane[a]*

[a]*Department of Biomedical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900 Malaysia*
[b]*Life Science Division, Faculty of Health and Life Sciences, INTI International University, Nilai, 71800 Malaysia;*
[c]*Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900 Malaysia.*
[d]*Department of Biotechnology, School of Life Sciences, Vels Institute of Science, Technology and Advanced Studies (VISTAS), Chennai, Tamil Nadu, India*
**sinouvassane@utar.edu.my*

ABSTRACT
Viruses can be spread worldwide through many factors, and drug resistant of virus and host become of the major problem in elucidating viral infections. Natural product alternatives from plants can be focus to provide safe, lowest and effective dosage to control viral infections in human. *Spirulina* is a well-known cyanobacteria that has been consumed by human as food and supplement for more than centuries without side-effects. *Spirulina* contains high nutritional values, providing various benefits upon consumption. *Spirulina* that serve as a natural supplement that strengthen the immune system, contains several bioactive compounds with proven antiviral effect on enveloped and non-enveloped viruses. This review focus on the antiviral properties and immunostimulant effects of *Spirulina* as a potential therapeutic supplement on human health.

Keywords: *Spirulina*, cyanobacteria, antiviral, virus, immunostimulant

Paper ID: HS028F

ANTIVIRAL PROPERTIES OF MICROALGAE AND CYANOBACTERIA- A REVIEW

Manishaa Sri Mahendran[a],Sinouvassane Djearamane[b],Ling Shing Wong[c] ,Govindaraju Kasivelu[d], and Anto Cordelia Tanislaus Antony Dhanapal[e*]

[a]Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900 Malaysia;
[b]Department of Biochemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900 Malaysia
[c]Life Science Division, Faculty of Health and Life Sciences, INTI International University, Nilai, 71800 Malaysia;
[d]MoES - Earth Science & Technology Cell (Marine Biotechnological Studies), Sathyabama Institute of Science and Technology (Deemed to be University) Chennai, India.
[e]Department of Biochemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, 31900 Malaysia
**antoc@utar.edu.my*

ABSTRACT
The worldwide outbreak COVID-19 has the task of an alert to identify approaches to tackle viral input and pathogenesis, with the previous SARS epidemic, avian flu, Ebola and AIDS. A new approach to the creation of a potential natural 'antivirals' pharmacy may come from marine chemodiversity as a significant source. Algal-based products are commonly used in various sectors, including the livestock, biomedicine, food, and pharmaceutical industries, from fruit to fertilizer. In recent decades they were proposing to offer promising results for antiviral potential from algae-based distilled molecules as suitable pharmaceutical research candidates. Several laboratory studies have found different algal polysaccharides that have antiviral effects, including carrageenan, alginate, fucan, laminaran, and marine. Besides, protein, carbohydrates, and lipids have been associated with antiviral activity against viral infection. For future investigations, the compilation of various research outputs with purified molecules extracted from algae in natural antivirals may offer some benefits in addressing the current issue.

Keywords: Antiviral, microalgae, cyanobacteria

Paper ID: HS029F

EVALUATION OF PHYTOCHEMICAL CONSTITUENTS, ANTIOXIDANT CAPACITY, ALPHA - AMYLASE INHIBITORY ACTIVITY WITH SPECIAL REFERENCE TO THE HYPOGLYCAEMIC ACTIVITY OF *ASPARAGUS RACEMOSUS* ON ALLOXAN INDUCED DIABETIC RATS

Menike[1]*, Paheerathan[2], Piratheepkumar[3] and Sivakaneshan[4]

[1]*Intern Medical Officer, Bandaranayake Ayurvedic Research Institute, Nawinna, Sri Lanka.*
[2]*Senior Lecturer,Unit of Siddha Medicine, Faculty of Applied Science, Trincomalee Campus, Eastern University, Sri Lanka.*
[3]*Lecturer, Unit of Siddha Medicine, Faculty of Applied Science, Trincomalee Campus, Eastern University, Sri Lanka.*
[4] *Professor Emeritus, Department of Biochemistry, Faculty of Medicine, University of Peradeniya, Sri Lanka.*
anushaisenevirathne@gmail.com

ABSTRACT

Diabetes mellitus is a metabolic disorder characterized by Hyperglycaemia due to defects in insulin secretion, insulin action or both. According to the Siddha texts, as per the signs and symptoms, Neerizhivu also known as Mathumegam in Meganeer, can be correlated with Diabetes mellitus in Modern Medicine. In present days, world's focus turns to traditional herbal medicines due to the fewer side effects. Siddha Medicine has better remedies for the treatment and management of diabetes. As per the literature evidences tuberous root of Asparagus racemosus was found to possess anti-diabetic action. Despite the limited scientific validity, the present research was designed to estimate the hypoglycaemic activity of the tuberous root of Asparagus racemosus on the regulation of the blood glucose level of Wistar Albino rats. Further, the study was aimed on the quantitative evaluation of the antioxidant capacity, total phenolic content, flavanoid content and the alpha-amylase inhibitory activity of the leaves, tuberous root and the whole plant of Asparagus racemosus in order to identify the mechanisms involved for its potential Hypoglycaemic activity. Cold and hot water extracts of the leaves, tuberous root and the whole plant with 5 different concentrations were used for the study. The amount of phytochemicals and the antioxidant capacity was significantly ($p<0.05$) higher in hot water extracts when compared with that of the cold water extracts for all the considered plant parts. The plant was found to have a concentration dependent antioxidant capacity of 129.16±7.90µmol Fe^{2+}/g, 95.34 ± 6.08 µmol Fe^{2+}/g and 68.75 ±2.79 µmol Fe^{2+}/g in the hot water extracts of the whole plant, leaves and tuberous root respectively. The flavanoid content was much more when compared with that of the phenolic content. The flavanoid content was 91 ± 6.59 mg TAE/g in the whole plant, 81.66 ± 5.57 mg TAE/g in the leaves and 38.34 ± 2.89 mg TAE/g in tuberous roots. The total phenolic content was in the order of whole plant > leaves> tuberous root with values 39.23±6.40 mg TAE/g, 27.04±1.79 mg TAE/g and 21.18±3.35 mg TAE/g respectively. Lower alpha-amylase inhibitory activity was found in the leaves and the tuberous root ranging from 8%- 9%. However, moderate inhibition of 32%was seen in the whole plant extracts. The Hypoglycaemic activity of the tuberous root of the plant was identified via an experimental animal study. Two doses (40mg/150g and 80mg/150g) were administered orally for a period of 14 days to 24 Alloxan induced diabetic rats. Significant blood glucose level lowering effect was seen in the test group which received 80mg/150 with an overall therapeutic effectiveness of 72%. Hypoglycaemic activity of the group which received 40mg/150g was 67%. The mean differences of the blood glucose lowering effect of the groups were in the order of Standard>Test 2>Test1>Control. Hence, the plant exhibits a dose

dependent Hypoglycaemic activity. Based on the results the Hypoglycaemic activity of Asparagus racemosus was scientifically and therapeutically proved as per the traditional Siddha literature and the potential to develop a novel therapy for Diabetes mellitus is being revealed.

Keywords: *Asparagus racemosus*, Diabetes mellitus, Hypoglycaemic activity, flavanoids, phenolic content, antioxidant capacity, alpha- amylase.

Paper ID: LS001

ISOLATION OF GUT MICROBES WITH AUTOFLUORESCENCE POTENTIAL FROM EARTHWORM *DRAWIDA PELLUCIDA PALLIDA* DURING REGENERATION

Preethee[1], Navanithra[1], Deepthi[1], Kathireswari[1], and Saminathan[2]*

[1]*Department of Zoology, Kongunadu Arts and Science College, Coimbatore, Tamil Nadu.*
[2]*Department of Chemistry, Kongunadu Arts and Science College, Coimbatore, Tamil Nadu.*
**ksaminath@gmail.com*

ABSTRACT:
Regeneration is a staggering phenomenon entailing regrowth of a detached body part and it's more prevalent in certain animal groups particularly in the invertebrates. Organogenesis and adaptation upon loss of body parts are crucial events in the regeneration of all organisms and it is an uncovered research area. In the present study feeding behaviour, gut microbial isolation, and riboflavin production were carried out in the amputated earthworm *Drawida pellucida pallida.* It was observed that the earthworm regenerates its functional parts mouth and anus within five to six days. The isolation of gut microbes associated with regeneration in earthworm *Drawida pellucida pallida* was performed and the microbes having the autofluorescence property were isolated. It was identified up to the genus level as *Bacillus sp.* The presence of riboflavin in the amputated earthworm tissue was recorded by thin layer chromatography and it concluded that at the time of organ development the earthworms will stay in starvation condition with the help of microflora in the earthworm gut they provide Vitamin B2 (Riboflavin) which is an important component for tissue regeneration. So, this symbiotic association provides shelter and nutrition to microbes, and the earthworm, in turn, gets riboflavin to survive at the time of starvation and tissue regeneration.

Keywords: Regeneration, Earthworm, *Drawida pellucida pallida,* Starvation, Riboflavin.

Paper ID: LS003

INFLUENCE OF NUTRIENT INTERACTIONS ON REPRODUCTIVE BIOMARKER ANNETOCIN IN EARTHWORM *EUDRILUSEUGENIAE*

Deepthi[1*], Rini Joseph[1], Saminathan[2] and Kathireswari[1*]

[1]Department of Zoology, Kongunadu Arts and Science College, Coimbatore, Tamil Nadu
[2]Department of Chemistry, Kongunadu Arts and Science College, Bharathiar University, Coimbatore, Tamil Nadu-29, India
**deepthikaveri92@gmail.com*

ABSTRACT

Utilization of molecular biomarkers for measuring the impacts of diets on genomics and metabolomics, reveals how nutrients may influence certain biological functions including immunity, digestion, and reproduction. Annetocin has been characterized as the reproductive biomarker, shown to be involved in the induction of egg laying behaviour of earthworm and it comes under vasopressin/ oxytocin superfamily of neuropeptide. This study outlines the differential expression pattern of annetocin gene in earthworm *Eudriluseugeniae* fed with dung material of cow (*Bostaurus*) and elephant (*Elephusmaximus*) with different concentrations, such as 100% CD, 50% ED + 50% CD and 100% ED for the 45 days of the vermicomposting cycle. Total RNA was isolated using TRI- reagent followed by the cDNA synthesis and measurement of annetocin transcript level by using real time quantitative PCR. Sperm count and traditional reproductive indices, including cocoon production were also recorded and related to the annetocin expression. Compared with control (100% CD) 18.35 and 1 fold increase of annetocin expression level were recorded in 50% ED+ 50% CD and 100% ED respectively. Sperm count and cocoon production were also exhibited in the same pattern of variation. It reveals that the reproductive potential of earthworm *Eudriluseugeniae* is directly related to the quality and type of feed materials and the nutrient composition of elephant dung and cow dung at the ratio 1:1 ensures the enhanced reproductive performance by inducing the expression of annetocin gene.

Keywords: Earthworm, Annetocin, Elephant dung, Cow dung, Reproduction, Nutrient.

Paper ID: LS004

ANNETOCIN GENE EXPRESSION PATTERN IN EARTHWORM *PERIONYX EXCAVATUS* BY USING *FICUS RELIGIOSA* AS SUBSTRATE

Rini Joseph[1], Deepthi[1]., Saminathan[2] and Kathireswari[1]*

[1]*Department of Zoology, Kongunadu Arts and Science College, Coimbatore, Tamil Nadu*
[2]*Department of Chemistry Kongunadu Arts and Science College, Coimbatore, Tamil Nadu-29, India*
*kathireswari@gmail.com

ABSTRACT

The leaf litters of *Ficus religiosa* (Moraceae) were pre-composted and then converted into vermicompost by the action of earthworm *Perionyx excavatus. Ficus religiosa* leaf litters along with the cow dung *Bos Taurus* and *Bos indicus* were considered as experimental vermi reactors in the following order *Ficus religiosa* leaf litters 50% + *Bos taurus* 50% (FB1), *Ficus religiosa* leaf litters 50% + 50% *Bos indicus* (FB2) and *Ficus religiosa* leaf litters 50% + 25 % of *Bos taurus* mixed with 25% *Bos indicus* (FB3) and 100% *Bos taurus* (B1); 100% *Bos indicus* (B2) and 50% of *Bos taurus* mixed with 50% *Bos indicus* (B3) were used as control. Ten fully clitellated *Perionyx excavatus* were introduced in the vermibed and analyzed the density of earthworm population after first and second-generation analysis through vermicomposting. And also research gives a validation of reproductive fitness of earthworm *Perionyx excavatus* after first-generation analysis by determining the expression pattern of reproductive gene Annetocin. Annetocin is a vasopressin/oxytocin superfamily of neuropeptides which is expressed higher in the reproductive region clitellum which involved in the induction of egg-laying behavior in annelid earthworms. The reproductive potential of earthworms was higher in experimental vermi reactors FB2 (694.33 ± 0.33); FB3 (460.33 ± 0.33); followed by FB1 (331.66 ± 0.33) than control treatments B2 (392.66 ± 0.66); B3 (307.66 ± 0.88) and B1(220 ± 0.57). The difference in the performance of the reactors operating in triplicates, the earthworm densities were statistically significant at 95% level. Optimization of a real-time quantitative PCR procedure exploiting the fluorescent DNA-binding molecule, Sybr Green, has allowed the measurement of annetocin transcript levels through gene expression pattern by isolation from the reproductive region clitellum. The expression pattern was upregulated in experimental reactors with *F. religiosa* than the control setup (FB2>FB3>FB1 >B2>B3>B1). The finding indicates that the leaf litters of *F. religiosa* and *Bos indicus* dung is preferably the most favorable medium for Vermiculture by enhances the Annetocin gene expression pattern thereby increasing the earthworm populations.

Keywords: Earthworm, reproduction, *Perionyx excavatus*, Annetocin, Gene expression, *Ficus religiosa*, Cow dung

Paper ID: LS009

CORROSION INHIBITION OF BAUHINIA RACEMOSA LAM LEAF EXTRACTON MILD STEEL IN SULPHURIC ACID MEDIUM

Vasanthajothi[1] and Saratha[2*]

[1]Department of Chemistry, PSG Polytechnic College, Coimbatore-641004, Coimbatore-641004, Tamil Nadu, India

[2]Department of Chemistry, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore-641043, Tamil Nadu, India

**saratha63@gmail.com*

ABSTRACT

The development of green inhibition strategies is extremely claimed because of the increasing demand for green chemistry in the area of science and technology. The use of plant extracts as metallic corrosion inhibitors has attracted significant attention among the corrosion scientists. The green inhibitors replace conventional toxic synthetic organic/inorganic corrosion inhibitors. The plant extracts are found to have reduced environmental risk, lower cost, abundant availability, and highly effective. Also, the plant extracts are found to contain many active principles and these active principles form protective films on metal surfaces by coordinating with metal ions through O, S, or N atoms of the functional groups present in it. Hence, the present work involves the study of corrosion inhibition of *Bauhinia racemosa Lam* leaf extract on mild steel in 0.5 M H_2SO_4 using weight loss and electrochemical techniques. The study indicates that the leaf extract of *Bauhinia racemosa Lam* is an efficient inhibitor with 96 % of inhibition efficiency for 24 h of immersion and it gradually increased with the increase in concentration. The shelf life studywas alsocarried out by weight loss method using the extract selected for the study stored under room temperature and refrigerated condition. The inhibitor was found to be stable upto 6 months and exhibit maximum inhibition efficiency of 86 % and 90 % for extract stored under room temperature and refrigerated condition, respectively. The surface profiles of the specimens were analysed using Scanning Electron Microscopy, Energy-dispersive X-ray analysis, and Optical Laser Profilometric studies. The scanning electron microscopy images disclosed the shielding effect on the surface of mild steel immersed in a solution containing *Bauhinia racemosa Lam* leaf extract. Energy-dispersive X-ray analysis confirmed the adsorption of phytoconstituent from the plant extract on to the mild steel surface and thus prevents the surface from mild steel dissolution by forming a barrier between the surface and the corrosive environment. This is further confirmed by FT-IR spectroscopy. The probable mode of corrosion inhibition of the studied inhibitor was also deduced using FT-IR studies.

Keywords: Corrosion inhibition, *Bauhinia racemosa Lam*, Weight loss method, Shelf-life study, electrochemical techniques,

Paper ID: LS010

ESTIMATION OF ANTIOXIDANT, CYTOTOXIC ACTIVITY OF ATTATIC CURANAM

Suriyaprakash*, Magesh, Jayabalan and Rajeshkannan

Department of Chemical Engineering, Annamalai University, Annamalai Nagar, Tamil Nadu, India.
**surya060995@gmail.com*

ABSTRACT

The study aims to investigate the phytochemical, antioxidant, and cytotoxic activity of compounds from the hydro-alcohol extract which will be pharmacologically effective. Phytochemical screening reported the presence of some compounds such as alkaloids, flavonoids, phenols, steroidal compounds, and saponins. This suggests that the compounds will be pharmacologically effective. Antioxidant properties were analysed by the DPPH test, total reducing power test, and total phenol content test. Cytotoxic activity was found by the Brine Shrimp Lethality test. The LD50 was measured for both the standard and the extract. The extract showed greater activity than the standard indicating that the hydro-alcohol extract of attatic curanam has a potential cytotoxic effect. The result showed that the drug attatic curanam has cytotoxic activity on the HepG2 cell lines.

Keywords: Antioxidant activity, Polyphenol, Flavonoid, Cytotoxicity, HPTLC Fingerprinting.

Paper ID: LS011

FUNCTIONAL AND BIOACTIVE PROPERTIES OF *BUPLEURUMCHINENSE*DC AND *CLEMATIS CHINENSIS*OSBESK MEDIATED GREEN SYNTHESIZED SILVER NANOPARTICLES

B. S. Ter[1], Sinouvassane Djearamane[2], L.S.Wong[3], F. F. N. Yeoh[4] and T. A. D. Anto Cordelia[5]*

[1]*Department of Chemical Science, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, Perak, Malaysia.*
[2] *Department of Allied Health Sciences, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, Perak, Malaysia.*
[3]*Faculty of Health and Life Sciences, INTI International University, Nilai, Negeri Sembilan, Malaysia.*
[4] *Department of Chemical Science, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, Perak, Malaysia.*
[5]*Centre for Biodiversity Research, Department of Chemical Science, Faculty of Science, UniversitiTunku Abdul Rahman, Kampar, Perak, Malaysia.*
**antoc@utar.edu.my*

ABSTRACT
This study aimed to characterize the morphologies, carried functional groups, and crystalline structures as well as investigated functional and bioactive activities of *B. chinense* and *C. Chinensis* mediated green synthesized silver nanoparticles (AgNPs). The AgNPs were synthesized by mixing herb extract (10% w/v) and AgNO3 (10 mM) in 1:9 ratios. Antioxidant, antimicrobial, anti-inflammatory, anti-diabetes activities, TPC, and TFC were evaluated. Antibacterial activity against *E. coli* and *S. aureus*, as well as an antifungal against *A. niger,* were determined. The synthesized AgNPs were detected spherical in nature with size between 20-30 nm with face-centered cubic phase arrangement whilethe presence of bioactive compounds on the surface of AgNPs was detected. The bioactive properties of AgNPs were highly dependent on their TPC and TFC. Cc-AgNPs with high TPC (166.2100 mgGAE/ g) had the strongest OH-and ABTS+ scavenging activities but Bc-AgNPs with higher TFC (286.1438 mgQE/g) had greater NO, DPPH Fe2+scavenging and anti-albumin denaturation activities. Minimum anti-α-amylase activity disparity between Cc-AgNPs(EC50 = 0.2903 mg/mL) and Bc-AgNPs(EC50 = 0.2975 mg/mL) was due to various inhibition mode contributed by bioactive compounds. Besides, Bc-AgNPs had the strongest antimicrobial activities, especially toward gram negative bacteria. However, Cc-AgNPs have the highest antifungal activity. Green synthesized AgNPs have strong functional and bioactive properties due to the presence of bioactive compounds on the surface of AgNPs.

Keywords: Keyword: Silver nanoparticles, Bupleurumchinense DC, Clematis chinensisOsbeck, green synthesis, antioxidant, antimicrobial

Paper ID: LS012

IMPACT OF GREEN SYNTHESIZED SILVER NANOPARTICLES USING *TARAXACUMOFFICINALE* AND *ASTRAGALUSMEMBRANACEUS* ON HEALTH PROMOTING ACTIVITIES

F.F.N.Yeoh[1], Sinouvassane Djearamane[2], L.S. Wong[3] B.S.Ter[4] and T.A.D.Anto Cordelia*

[1]Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia.
[2]Department of Allied Health Sciences, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia.
[3]Faculty of Health and Life Sciences, INTI International University, Nilai, Malaysia.
[4]Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia.
**Department of Chemical Science, Faculty of Science, Universiti Tunku Abdul Rahman, Kampar, Perak, Malaysia.*
**antoc@utar.edu.my*

ABSTRACT

The topical investigation was initiated to synthesize silver nanoparticles (AgNPs) through an eco-friendly approach. The aim of this study was to characterize the chemical composition and surface morphology of the green synthesized AgNPs by UV-VIS Spectrophotometer, XRD, FTIR, and SEM. The antioxidant, anti-inflammatory, anti α-amylase, antimicrobial and antifungal capabilities of both the plant extract and AgNPs were evaluated. *Taraxacumofficinale* leaf extract and *Astragalusmembranaceus* root extract was used in the synthesis of silver nanoparticle. The results obtained from UV-VIS showed obvious peaks at 430.0 nm and 450.4 nm for Am-AgNPs and To-AgNPs respectively. Both the AgNPs were spherically shaped in nature with an average particle size that ranges from 7.30 nm to 29.4 nm for Am-AgNPs and 19.2 nm to 77.3 nm for To-AgNPs with a face-centered cubic arrangement. As for total phenolic and flavonoid content, Am-AgNPs showed 33.8711 mgGAE/g and 36.6433 mgQE/g while To-AgNPs showed 92.2365 mgGAE/g and 90.1265 mgQE/g. The antioxidant assays for Am-AgNPs showed EC_{50} of 0.3870, 0.3610, 0.1558 and 0.2009 for $DPPH^{+}$, iron chelating, NO^{-} and OH^{-} radical scavenging assays while To-AgNPs has EC_{50} of 0.2772, 0.2696, 0.1699 and 0.1449 for $ABTS^{+}$, $DPPH^{+}$, iron chelating, NO^{-} and OH^{-} radical scavenging assays. In both anti-inflammatory and anti α-amylase assays, To-AgNPs showed higher activity when compared to Am-AgNPs. As for antimicrobial assay, To-AgNPs was more effective in inhibiting the growth of both *E.coli and S.aureus* as compared to Am-AgNPs. As for anti-fungal assay, Am-AgNPs was more effective as the zone of inhibition on the growth of *A.niger* was wider.

Keywords: *Astragalusmembranaceus*, *Taraxacumofficinale*, silver nanoparticles, antioxidant, antibacterial, and antifungal.

Paper ID: LS014

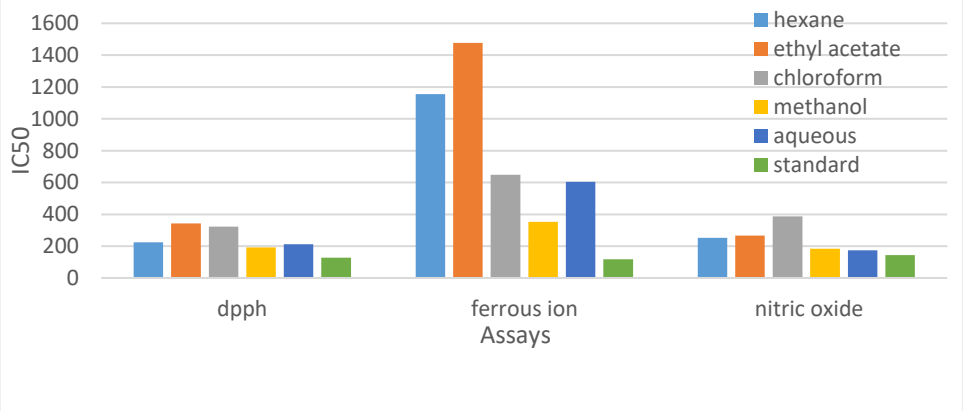
ANTIOXIDANT ACTIVITY OF EDIBLE MUSHROOM *LAETIPORUS VERSISPORUS* (LLOYD IMAZEKI)

Farzana Fathima and Usha Raja Nanthini

Department of Biotechnology, Mother Teresa Women's University, Kodaikanal-624101, India
zana.lifescience@gmail.com

ABSTRACT

Edible mushrooms are ubiquitous and are consumed widely. They possess many nutritional and medicinal benefits. Mushrooms constitute vitamins, minerals, proteins, antioxidants, and other phytochemicals. Generally, cell damage, a common factor associates with many diseases relates to antioxidants. Antioxidants are a group of compounds that either prevents or slows down the cell damage. *Laetiporus versisporus*(Lloyd Imazeki) is an edible mushroom. It is a species of bracket fungus which grows on dead trees. Lanostane triterpenoids and saponins were isolated from the fruit bodies of *Laetiporus versisporus* earlier. The current study focuses on examining the phytochemistry and antioxidant activity of five mushroom extracts. Among the five extracts, phytochemical analysis of ethyl acetate and methanolic extracts showed high levels of alkaloids, phenols, flavonoids, and terpenoids. The antioxidant activity was examined by 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay, ferrous ion chelating assay, and Nitric oxide scavenging assay. It is carried out in all five extracts by taking ascorbic acid and EDTA as standard. The percentage of inhibition increases with the concentration of all the samples in all three assays. A comparative study on the IC_{50} values of extracts by the three assays is illustrated (Fig.1). Out of the five samples, methanol and aqueous extracts showed the highest scavenging activity and decreased IC_{50} value which indicates the higher antioxidant activity whereas the inhibition percentage of hexane extracts has a moderate IC_{50} value and antioxidant activity. Chloroform and ethyl acetate extracts have lower inhibition percentage thereby reflecting the maximum IC_{50} values and minimum antioxidant activity. The current evaluation encourages the study of anti-microbial, anti-diabetic, and anti-cancer studies in the future.



Keywords: Phytochemistry, Antioxidant activity, DPPH

Paper ID: AS001

SUSTAINABLE INNOVATIONS TO IMPROVE THE FUNCTIONAL PROPERTIES OF SPORTSWEAR

Jeminarani[1]* and Vasugiraaja[2]

[1]Dept.of.Costume Design and Fashion, Chikkanna Govt Arts College, Tiruppur, Tamil Nadu, India.
[2]Dept.of.Textiles and Clothing, Dean of Home Science, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, India.
**jeminapc@gmail.com*

ABSTRACT

Technical textiles are textile materials and products mainly produced for their technical function and performance. Next to medical textiles, sports textiles are the second fast growing segment in technical textiles. Most of the time, players are exposed to the sunrays during day time and sweat lot while playing, which causes skin damages and other skin problems. Functional finishes on the sportswear enhance the anti-ultraviolet property and antibacterial property of the fabric. Cotton fabric is highly popular because of its excellent properties such as regeneration, bio-degradation, softness, affinity to skin, and sweat-absorbing properties. Bamboo is an extreme absorbent; it is about sixty percentages more water-absorbent than cotton. Bamboo fiber is frequently being used in blends with cotton in the textile industry, which has high wet strength. Blending is usually done using 50:50 combinations. A study was conducted using herbs for UV finish and antibacterial finish on cotton, bamboo, and bamboo/cotton single jersey knitted materials.To achieve the anti-ultraviolet property and antibacterial property, extracts of naturally available herbs were selected based on the literature survey, a combination of the selected herbs was microencapsulated and applied on the selected 100% cotton, 100% Bamboo and 50:50 bamboo/cotton single jersey knitted fabrics in various ratios and analyzed for effectiveness using standard methods such as AATCC 83 test for anti-ultraviolet property and AATCC 100-2004 test for antibacterial property respectively.

Keywords: Sportswear, Single jersey knitted fabrics, Herbs, Microencapsulation, Anti-ultraviolet property, Antibacterial property

Paper ID: AS002

SYNTHESIZING AND EVALUATING THE PERFORMANCE OF ENZYME FOR BLEACHING OF COTTON

Karpagam Chinnammal

Department of Costume Design and Fashion, Chikkanna Government Arts College, Tirupur, Tamil Nadu, India.
karpagamchinnammal@gmail.com

ABSTRACT

The textile industry is the most diverse and dynamic segment of all manufacturing industries. Industrialization is no doubt a must for economic prosperity, but it is at the same time detrimental to the overall quality of life, due to encroachment on nature beyond its sustainable level. The results are devastating, affecting human life, flora, and fauna. In the present competitive market, environmental awareness is a must for each industry, in order to keep alive its prospect and diversification. The Indian textile industry has great potential besides great challenges. It must maximize its strength and minimize its weakness. Environmental issues were overlooked all these years. However, due to increasing awareness of the polluting nature of the textile effluent, combined with increasingly strict legislation and consumer interest for eco-friendly products, social pressure is increasing in the textile processing industries, to use environmentally friendly chemicals and processing techniques.Biotechnology, the process of application of living organisms and their components to industrial products and processes, is making fast inroads in the textile industry. Its application in the manufacturing and processing of textiles is essential to protect the earth from the damaging effect of pollution. Enzymes are natural products, generated from renewable resources that are easily and completely biodegradable. They pose no threat to the environment. Enzymes accomplish their work quietly and efficiently without leaving any pollutants behind.In this study, an attempt has been made to study the effect of enzymes on bio bleaching of cotton. Cotton fabric was subjected to bio bleaching using enzyme commercially available. An attempt has been made, to synthesize Glucose oxidase enzyme from microbe and evaluate its suitability for bio bleaching of cotton fabrics as against the commercial enzyme. The performance of the enzyme treated fabric has been compared with that of the conventionally bleached sample. The bleached samples were subjected to various tests like Shrinkage, Fabric weight, Tensile strength, and whiteness index.

Keywords: Enzymes, Bio bleaching, Glucose oxidase, Whiteness index

Paper ID: LS002F

SUSTAINABLE DEVELOPMENT, CLIMATE CHANGE AND INNOVATION IN THE PERSPECTIVE OF SOCIO-ECONOMIC-ENVIRONMENTAL (SEE) MODEL WITH A CASE STUDY OF COSTA RICA.

John Parisutham and Rajendran

Department of Journalism and Mass Communication
Madurai Kamaraj University, Madurai, Tamil Nadu, India
pjohnbritto@gmail.com

ABSTRACT

Sport hunting is a dangerous phenomenon for ecological damage. The first country to ban sport hunting in Central America was Costa Rica. Its only sports hunting, which was done for fun, that was not permitted, but was for local people whose livelihood depended on it were allowed to fish. This is their social justice. This country also spread its forest cover to an area that could amount to a larger extent, say doubling in over 25 years. This is how they could show their concern to the environment and ecology, striking a balance. They are likely to reach their goal of carbon-neutral by 2050. This is how they are future centric and could decrease the impact of green-house effect and thus climate change issue. The government and people could get their credit for investing in sustainable and renewable energy sources like wind and solar power to get their electricity. This makes the country largely carbon neutral. This is what is the impact of their innovative plans for sustainability, while they use socio-economic and environment model [SEE Model] to reach the goal of sustainable development goals, designed by the United Nations. The innovation of communities and countries need to be based not on exploitation of people, planet and prosperity but on the sustainability of them to win over the impacts of climate change and give a better world for the children to live in.

Keywords: Sustainable development, Innovation, Climate change, Costa Rica, Socio-Economic, Environmental

Paper ID: LS003F

PRE-TREATMENT TEMPERATURE AND MULTI-RESPONSE SURFACE OPTIMISATION OF ULTRASOUND-ASSISTED EXTRACTION OF ANTIOXIDANTS FROM RED DATES

Haripriya Ravikumar, Chua Bee Lin, Chen Yen Leng, Ameena Ali and Choo Choong Oon

School of Computer Science and Engineering, Faculty of Innovation and Technology, Taylor's University, 1, Jalan Taylor's, 47500, Malaysia
itshpriya@gmail.com

ABSTRACT

Ziziphus jujube also known as red dates are one of the natural flora for making Chinese traditional medicine for its rich source of antioxidant bioactive compounds in them. However, the optimisation of extraction conditions and demonstration of extraction kinetics of red dates in terms of crude extract yield, total phenolic content (TPC) and antioxidant property remain a gap. Therefore, the aims of this research were to enhance the antioxidant activity via DPPH, crude extract yield of red dates and TPC via response surface methodology (RSM). In addition, mathematical modelling of the TPC extraction kinetics was performed. Single-factor experiments were adopted to identify the preliminary RSM ranges of four extraction parameters: liquid-solid ratio (10-30 ml/g); ultrasonic power (70-90%); extraction temperature (50-70°C); and extraction time (40-60min). The extraction kinetics based on the RSM optimised conditions were modelled into six extraction kinetics models (Ponomaryov's model,Page's model, Logarithmic model, Peleg's model, first-order and second-order kinetic model). As results, 60°C was identified as the best drying temperature because of highest crude extract yield (4.56 g), highest total phenolic content (TPC) (0.023 g GAE/g extract) and antioxidant activity (85.88%). The optimum values for liquid-solid ratio, ultrasonic power, extraction temperature and extraction time were 30ml/g, 70%, 60°C and 60 min, respectively. The antioxidant activity of red dates after optimisation (90.59%) was higher than the antioxidant activity of synthetic antioxidants, Butylated Hydroxytoluene (84.71%) and Butylated Hydroxyanisole (77.73%). Furthermore, the best-fitted kinetics model was second-order kinetic model due to its coefficient of determination (R^2) at 0.9849, being the closest to 1 and its root mean square error (*RMSE*) was the lowest, 0.001028 among six kinetic models. In this research article, red dates were proven to have high antioxidant activity and they are suitable to be used as natural antioxidants.

Keywords: Drying, Extraction, Optimisation, Response surface methodology (RSM), Red dates, Antioxidants

Paper ID: LS004F

FORMULATION OF SELECTED SOY PRODUCTS FOR WOMEN'S HEALTH

Anitha[1] and Vasantha Esther Rani[2]

[1]Seethalakshmi RamaswamiCollege (Autonomous), Tiruchirappalli, Tamilnadu, India
[2]FatimaCollege ((Autonomous), Madurai-625 018, Tamilnadu, India
ceeanitha4@gmail.com

ABSTRACT

Soybean differs from other cereals and legumes by containing the highest amount of protein. Soybean plant contains complete protein.Soy foods are made from soybean, a legume, with excellent source of high quality protein. Tofu, soy milk, soy meat are non-fermented products of soybean. Soy contains chemical compounds called phytoestrogen and isoflavones. Soy isolflavones are daidzein and genistein. Women entering menopausal stage are recommended to consume soya bean. Few recipes were standardized and can be used in day today cooking so as to improve the consumption of soy products for better health. The popular soy milk product is Tofu. It is prepared by curdling fresh hot soy milk with a coagulant. On milling, soybean yield a nutritious product called the Soy flour, which is available in two types namely full fat soy flour (FFSF) and defatted soy flour (DFSF). When the soy bean oil is extracted,the by-product called Soy Chunks is produced. Soy products namely Tofu, Defatted Soy Flour and Soy Chunks were used to standardize few recipes by incorporating them in commonly consumed recipesor using them wholly. Tofu with pasta and sandwich, Chunks in kurma and nuggets, DFSF incorporated with besan omelette and cakes were standardized. Organoleptic evaluations were done for the developed products and were standardized. The developed products were given to the Judging panel for organoleptic evaluation, on a hedonicscale. Panel members comprising 15 members were selected. Each individual was provided withscore card to assess the sensory attributes like Appearance/ Colour, Taste, Flavour, Consistency and Overall Acceptability of the developed products.The nutritive value for DFSF and storage stability of standardized cakes was carried out. Nutrient analysis of a food implies the nutritional properties including energy value, content of protein, fat, carbohydrate, vitamins and minerals. The formulated cakes were analyzed for its nutrient content. The microbial analysis was done for the product at an interval of one week (up to 14 days). The study aims to inculcate the consumption of soy products through these standardized recipes.

Keywords: Soy Bean, Tofu, Nutritive Value, Storage Study.

Paper ID: LS005AF

FORMULATION OF STIRRED PROBIOTIC FRUIT YOGHURT TO BOOST IMMUNE HEALTH

Poornima Jeyasekaran[1] and Deepa[2]

[1]Department of Food Science and Nutrition, The American College, Madurai, Tamil Nadu, India.
[2]Department of Food Science and Nutrition, Periyar University, Salem,
Tamil Nadu, India.
poornimajeyasekaran@yahoo.co.in

ABSTRACT

The food we eat plays a key aspect in determining your overall health and immunity. Improving our immunity during the Covid-19 pandemic is challenging for all age groups. So this study focused at formulating a ready to drink called probiotic fruit yoghurt from a less utilised fruit as a good option to build resilience in the body against infections and also to help the planters of Thandikudi hills, Tamil Nadu to promote their produce into a valuable product. Samples procured were handled in a very hygienic manner and formulations of stirred fruit yoghurts were carried out in three different ratios (10%, 15% and 20% pulp).These samples were standardised by sensory evaluation (9 point hedonic scale) and physico chemical parameter (pH). The statistical method used in data analysis was descriptive statistics using indexes such as mean and standard deviation. Fruit yoghurt made from 20% passion fruit pulp scored a highest value in the mean score (8.5±0.17) for sensory evaluation except for texture. The pH value of the passion fruit yoghurt was 3.5 found to be more acidic compared to the plain yoghurt value 3.7 because of the addition of fruit pulp which was balanced by the addition of sugar/stevia. The acceptability of the stirred probiotic fruit yoghurt with 20% pulp was mainly because of the flavouring compounds of the yellow passion fruit.

Keywords: Stirred yoghurt, Probiotic drink, Passion fruit (Passiflora edulis).

Paper ID: LS006F

COMPARATIVE STUDY OF HAEMATOLOGICAL PARAMETERS IN FISHES FROM THE NATURAL HABITAT, MADURAI REGION

Malathi*, Rino, Jaya supa sooriya and Shalini

Fatima College, Mary Land, Madurai,Tamil Nadu,India
*malathivishvaksenan@gmail.com

ABSTRACT

In the present study the heamatological profile of two fresh water fishes Labeo rohita(Rohu) and Channa striatus(Murrel) in relationship with the sex and the water quality in a natural habitat was analysed.The freshwater fishes were collected from the pond located in Thodaneri, Vadipatti taluk, Madurai district, Tamil Nadu, India. In heamatology studies no significant variation was observed in Hemoglobin content and found almost the same in both the fish irrespective of the sex and also fall in the range of normal value. In Differential Leucocyte count(DLC) the following blood components Lymphocyte , Eosinophil and Monocyte count were significantly higher than the normal values and the values are found maximum in Rohu when compared to Murrel. Basophil count is almost nil in both the fish. RBC(Erythrocyte) count was almost the same in both the fish and the value falls between the range of normal value Packed Cell Volume (PCV) count was almost the same in both the fish and the value falls between the range of normal value. The values of Hb, PCV were found higher in male fish as compared to female fish. The leucocyte count is also higher in the males when compared to the females of both Rohu and Murrel. These may be also influenced by the physiological activity, feeding habit, infectious agents, water quality parameters and the environmental stress on the organism.

Keywords: Water quality parameters, Haemoglobin, Mean Corpuscle Haemoglobin Concentration, Differential leucocyte count, Eosinophil, Monocyte, Erythrocyte.

Paper ID: LS007F

SENSORY EVALUATION OF CAROTENOID AND PALM JAGGERY INCORPORATED FUNCTIONAL DRINK JIGARTHANDA

Revathi[1*] and Vasantha Esther Rani[2]

[1]Department of Food Science and Technology, Arul Anandar College (Autonomous), Karumathur, Madurai-625514, Tamilnadu, India*
[2]Research Department of Home Science, Fatima College (Autonomous), Madurai - 625018, Tamilnadu, India
**revathi.rpr@gmail.com*

ABSTRACT

Functional food is any fresh or processed food claimed to have a health promoting or disease-preventing property beyond the basic function of the supply of nutrients. Nutrient-rich foods like fruits, carrot, milk and grains are often considered functional foods as well. Functional foods like beverages offer potential health benefits that could enhance the well-being of consumers and reduce the economic and social costs of treating non-communicable diseases. Jigarthanda is one of the best tasting summer drink which has its origins in Madurai. The present study was carried out on the development of functional drink Jigarthanda incorporated with carrot and palm jaggery using the basic ingredients such as milk, kova and almond gum. The functional drink was prepared with three different variations - V-I, V-II and V-III in two proportions - A and B. In proportion A, all the three variations were incorporated with 100 ml of carrot juice and also V-I, V-II and V-III contain respectively100 g, 150g and 200g of palm jaggery. In proportion B all the three variations were incorporated with 200 ml of carrot juice and also V-I, V-II and V-III contain 100 g, 150g and 200g of palm jaggery respectively. Among the three variations, in Variation I, all the sensory factors was marked high with the mean value of 7 in both Proportion A and B. In Variation II and Variation III, all the factors in both proportions A and B were marked high with the mean score more than seven and particularly in variation III, the taste factor got high mean score more than 8 and the overall acceptability was very high in Proportion B and the mean score was 7.3, which was more than proportion A (7.27). Hence the Functional drink Jigardhanda in V-III of Proportion B, which was made with 250gram palm jaggery, incorporated with 200 ml of carotenoid rich carrot juice obtained the highest overall acceptability score and was regarded as the best sensory evaluated variation of Jigarthanda. The popular traditional beverage Jigarthanda has been value added by incorporating carotenoid rich functional food to the consumers.

Keywords: Functional drink, Jigarthanda, Carotenoid

Paper ID: LS008F

CONSERVATION OF NATURAL AND HERTIAGE RESOURCES IN MADURAI REGION, TAMILNADU, INDIA

Poornimasethupathi[1] and Mercy Packiam[2]

[1]Department of History, Fatima College (Autonomous),Madurai-625018,Tamilnadu,India.
[2]Department of History, Lady Doak College, Madurai, Tamilnadu,India.
poornimahardworker@gmail.com

ABSTRACT

Madurai is a seat of learning in Tamil literature enriched with ecological traditions and great architecture marbles in south India. Heritage places and landscapes in Madurai are made up of living stories as well as connections to the past which include nature resources, objects, customs and traditions that individuals and communities have inherited from the past. Madurai is one of the continually inhabited cities in the Indian peninsula, with a history dating all way back to the Sangam period of the pre-Christian era. It was the seat of power of the Pandian empire .Madurai was endowed with a rich cultural heritage and glorious tradition. The study of historical growth of urbanization of Madurai, has been increased and the valuable resources like rich cultural and natural/ manmade resources in and around Madurai has brought the habitat to settle in Madurai. So both government and educated community have taken efforts to teach the public about importance of resources and bring awareness among the people about the quality of urban environment life in proper manner, which is the main duty of every one. The Present study focus on sustainable development approaches implies that the natural, heritage resources of tourism are conserved for continuous use in the future, while still bringing benefits to the present society.

Keywords: Heritage, Conservation, Resources, Excavation, Developmental plan.

Paper ID: E004

PERCEPTIONS AND BENEFITS OF URBAN LAKES UNDER DIFFERENT ENVIRONMENTAL CONDITIONS

Nasir Shafiq, Farah Amira Ahmad, Delene Webera and Morgan Schebella

Department of Civil and Environmental Engineering, Universiti Teknologi Petronas, Bandar Seri Iskandar, Perak, Malaysia, Department of Civil and Environmental Engineering, Universiti Teknologi Petronas, Bandar Seri Iskandar, Perak, Malaysi, School of Natural and Built Environments, University of South Australia, Mawson Lakes, South Australia, Australia, School of Natural and Built Environments, University of South Australia, Mawson Lakes, South Australia, Australia.
Farah_17007585@utp.edu.my

ABSTRACT-
Urban green and blue spaces play an increasingly important role in contributing to the quality of urban life and built environments. They provide vital ecological services; urban green and blue spaces have a multitude of functions by maintaining ecological processes and providing a beneficial city microclimate, as well as recreational space for citizens. In other words, urban green and blue spaces were designed to promote public health and to give some aesthetic value to an urban setting. More recently research has begun to focus on the benefits of blue space. However, most of the evidence relates to green space with much less on blue space. This study here, we investigated the importance of urban blue space for citizens' health and well-being and for the sustainability of the city they inhabit. we examinedurban green space at KLCC Park in Kuala Lumpur, Malaysia and urban blue space at Mawson Lakes in Adelaide, South Australia. We examined to develop an understanding of the value(s) that Mawson Lakes residents and businesses place on the suburb's main lake.Then using augmented reality we sought to, and to understand how those values change under different conditions (such as when algal blooms occur, or when the Council installs floating treatment islands/wetlands). We compare the effects of visual stimuli (360 degree virtual photos of an urban blue space under different conditions). The results will provide new insights and a basis for the improvement of environment quality for living health and wellbeing through urban blue space design in sustainable uses of blue space, particularly in urban areas.

Keywords: Urban green space,urban blue space, health and wellbeing of urban blue space, perception of urban blue space, field experiment.

Paper ID: E009

KINETICS AND MODELLING OF BIOFILTRATION OF BENZENE AND TOLUENE IN PURE AND MIXED FORMS IN A BIOFILTER

Saravanan*, Rajeshkannan, Balamurugan and Dilipkumar

Department of Chemical Engineering, Annamalai University, Annamalai Nagar-608002, Tamilnadu, India

**sarav304@gmail.com*

ABSTRACT

Benzene and toluene are discharged in huge quantities in the many chemical and petrochemical industries and has been listed among the most hazardous and toxic compounds. In this study, experiments were conducted to estimate the performance of biofilters in treating benzene and toluene. The laboratory scale biofilters was operated in long term experiments in order to study the removal of benzene and toluene in separate biofilter and also as a mixture in another biofilter. The biofilter media consists of a mixture of casuarina seeds and berl saddles (50: 50 vol, %). The media was mixed with wastewater sludge obtained from the paper industry as inoculum. The biofilters were operated at different inlet concentrations of VOCs (0.2 to 1.2 $gm^{-3}h^{-1}$) and at a gas flow rate of 0.03 m^3/h. Maximum removal efficiency of more than 95% were obtained with the mixture of benzene 60 % and toluene 40% of inlet concentration. Further increase in the toluene concentration caused a drop in the removal efficiency. Ottengraf–van den Oever model was tested and fitting demonstrated a good agreement between calculated and experimental data for pure VOCs and mixed VOCs.

Keywords: Benzene, Toluene, casuarina seeds, Ottengraf–van den Oever model.

Paper ID: E010

STUDIES ON NANO-SORPTION OF MALACHITE GREEN ONTO SILVER NANO PARTICLES

Rajesh kannan[1*], Dilipkumar[1], Balamurugan[1], Saravanan[1], Balaguru[2], and Saravanan[3]

[1]Department of Chemical Engineering, Annamalai University, Annamalai Nagar-608 002, Tamil Nadu, India.

[6]Department of Civil Engineering, Government Polytechnic college, Theni, Tamil Nadu, India

[2]Department of Petro Chemical Engineering, BIT campus, Anna University, Trichirapalli, Tamilnadu, India.

**kannan_vrr007@yahoo.com*

ABSTRACT

In the present study, green synthesized silver nanoparticles (AgNPs) produced fromhydrilla verticillata biomass was used for adsorption of the dye malachite green (MG). The sorbent was characterized using SEM analysis. MG removal efficiency of the sorbent was investigated as a function of different sorption parameters such as temperature, sorbent dosage, contact time, sorbent size and agitation speed. These parameters were optimized using response surface methodology (RSM). The significance of different sorption parameters along with their combined effect on the sorption process has been established through a full 50 factorial design.

Keywords: Nanoparticles,hydrilla verticillata biomass; Green Synthesis; Decolorization; MG; RSM; Optimization;

Paper ID: E001F

PERSONAL PROTECTIVE EQUIPMENT IN CONSTRUCTION, ACCIDENTS INVOLVED IN CONSTRUCTION INFRASTRUCTURE PROJECTS

Syed Ammad[1], Wesam Salah Alaloul[1], Syed Saad[1], Abdul Hannan Qureshi[1], Muhammad Altaf[1]

Department of Civil & Environmental Engineering, University Technology Petronas, Persiaran UTP, 32610 Seri Iskandar, Perak, Malaysia

syed_18003311@utp.edu.my

ABSTRACT

The construction industry is considered as being risky with frequent and high accident rates and health problem. It is dynamic and changeable due to the advancement and complexity in the field of infrastructure projects related to Personal Protective Equipment (PPE). Safety and health at any given infrastructure site are associated with both the physical as well as psychological dimensions of committed stakeholders during the construction lifecycle. Thus, this aspect has become a primary concern for any organization affiliated with the day by day tasks assigned to the site workers. Safety and health hereby are crucial for the project objectives and achievements as well as charitable concern which involves proper management. The main purpose of this review paper is to measure the impacts of accidents frequency and consequences in the infrastructure projects, to determine whether the PPE is being properly practiced according to the health and safety (HSE) standards, after extracting the critical factors from the various case studies. The critical factors (CF) highlighted in this paper are reflected to the critical success factor (CSF) to narrow down the frequent accidents and associated factors to mitigate the rate of inflations. The CSF clusters are further classified and studied in-depth for further studies of parameters related to accidental impacts.

In order to do critical literature review, a broad range of studies from 2004-2019 were followed, based on the global statistics, it had been estimated that more than 2 000 000 people worldwide were considered as disabled because of work-related injuries annually. Furthermore, it was also studied that 25% or more accidents caused because of sudden injuries including heads, eyes, arms, and legs. The study reviewed that major problems in infrastructure projects were permanent disabilities, non-permanent disabilities, and sudden deaths. This paper will help to access the findings towards reducing the number of CF at workplace that causes the sudden accidents as reported in this review.

Keywords: Construction Infrastructure, Hazard and Safety, Personal Protective Equipment.

Paper ID: E002F

A HIGH GAIN SWITCHED Z-SOURCE CONVERTER WITH REDUCED PASSIVE COMPONENTS

Rahul Kumar[1], Ramani Kannan[2], and Nursyarizal Bin Mohd Nor[3]

[1,2,3]*Department of Electrical and Electronics Engineering, Universiti Teknologi PETRONAS, Malaysia*
rahul_18003246@utp.edu.my

ABSTRACT

Pollution problems have contributed to more research on renewable energy sources. Owing to the lower output of renewable energy sources, DC-DC boost converters are required to step-up this lower voltage to a higher value before connecting it to the real applications e.g. DC microgrid, DC motor, inverter, etc. Since traditional Z-source DC-DC converters have the capability to enhance the output voltage of renewable energy sources. However, these designs suffer from the limitation of voltage gain and utilize higher passive components, which makes them bulky and expensive. This paper presents, a new topology of the switched Z-source boost converter, which exhibits the features of higher boost factor at a lower duty cycle and reduces the risk of inductor saturation. The higher boost factor is obtained by employing one inductor and switch at the load side of the traditional Z-source DC-DC converter. This allows the output capacitor to be utilized during charging and discharging loops. The proposed design has achieved a boost factor of 4.36 at D=0.15, which is higher than the traditional Z-source converter e.g. 1.21 at the similar duty cycle. Furthermore, in comparison with conventional converters, the proposed converter deploys reduced number of passive components, thus reducing the cost and enhancing efficiency. Additionally, comparison based on boost ability and number of components has been presented. Finally, simulations are carried through MATLAB/Simulink software and the simulated results verified the correctness of the proposed converter.

Keywords*:* DC-DC converter, Photovoltaic cells, Switched Z-source, High voltage gain, Renewable energy.

Paper ID: E003F

MECHANICAL STUDIES OF INTERMETALLIC NICKEL ALUMINIDE (NI_4AL) FOR AUTOMOTIVE TYRES

H.A.H. Hanim[1], T.J.S. Anand[1,*], I.S. Othman[1], Sivaraos[1], K.T. Lau[2], S.I.A Razak[3] and R.T.R. Kumar [4]

[1]Advanced Manufacturing Centre, Fakulti Kejuruteraan Pembuatan, [2]Fakulti Teknologi Kejuruteraan, Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia.
[3]IJN-UTM Cardiovascular Engineering Centre, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia.
[4]Department of Nanoscience and Technology, Bharathiar University, Coimbatore – 641 046, India.
anand@utem.edu.my

ABSTRACT

Intermetallic Nickel Aluminides (Ni_4Al) was synthesized and characterized to determine the suitability of this material in the automotive industry. The purpose is to produce vehicles which are lighter, more fuel efficient and cause less pollution. One key technical design strategy for improving vehicles efficiency is the light weighting and their tyre Hub. Attractive properties of Ni_4Al including low density (~ 6g/cm^3) resulting lightweight, high oxidation and corrosion resistance, combined with their ability to retain strength and stiffness at elevated temperatures lead to its selection as a potential candidate material. The prime focus will be on to obtain the mechanical properties such as hardness, which was tested using Vickers Micro hardness Tester. Microstructural properties of these alloys were examined using optical microscopy and Scanning Electron Microscopy (SEM). It confirms grain boundaries with a large network in ordered L_{12} Ni_4Al phase visible and it was known as dendrites arm. SEM equipped with EDX used to do compositional analysis. The EDX analysis shows the ratio of Ni to Al is close to 4:1 respectively. Heat treatment (annealing) and Tafel extrapolation tests were used out for thermal and corrosion properties of the intermetallic nickel aluminides respectively. There is an increase of 26.36% for the annealed Ni_4Al sample results that associate with dendrites structure which decayed very slightly with the rise of annealing temperature.

Keywords: Intermetallic Aluminides; Mechanical; Automotive, Light-weight, Tire Hub

Paper ID: E004F

RESISTIVE RANDOM ACCESS MEMORY (RRAM) BASED UNBALANCED TERNARY INVERTER

Furqan Zahoor[1], Tun Zainal Azni Zulkifli[2], Usman Bature Isyaku[3], Farooq Ahmad Khanday[4], Aabid Amin Fida[5]

[1,2,3]Electrical and Electronic Engineering Dept., Universiti Teknologi PETRONAS, 32610 Bandar Seri Iskandar, Perak, Malaysia
[4,5]Department of Electronics and Instrumentation Technology, University of Kashmir, 190005, Srinagar, Jammu and Kashmir, India
furqan_18000022@utp.edu.my

ABSTRACT

In this manuscript, resistive random access memory (RRAM) based ternary logic inverter design is presented. Ternary logic has emerged as a standout technology compared to the traditional binary logic systems as it has significant advantages in terms of operating speed, reduced circuit overheads and enhanced information density. The resistive load metal oxide semiconductor field effect transistor (MOSFET) based ternary inverter and resistive load carbon nanotube field effect transistor (CNTFET) based ternary inverter circuits have been previously proposed. The proposed design utilizes RRAM as the actice load in the design thus eliminating the requirement of large resistors. The proposed ternary logic inverter shows advantages of reduced chip area and robustness to the process variations. The simulation of the proposed STI design is carried out utilising HSPICE software, and the functional validation of ternary logic inverter circuit is confirmed by the simulation results.

Keywords: Carbon nanotube field effect transistor (CNTFET), multiple valued logic (MVL), ternary designs, resistive random access memory (RRAM).

Paper ID: E005F

ASSESSMENT OF WATER QUALITY PARAMETERS FOR THE OLD REPAS DAM BENTONG, PAHANG

Kishan[1,2*], Rowshon[1], Hasfalina Che Man[1], Wayayok[1], Deepak[3] and Lee Siaw Kiat[2]

[1]Department of Biological Agricultural Engineering, Faculty of Engineering,Universiti Putra Malaysia
[2]Department of Civil Engineering, Faculty of Engineering and Quantity Surveying, Inti International University, Malaysia
[3]School of Science and Engineering, Manipal International University Nilai
**Kishan.gunesegeran@newinti.edu.my*

ABSTRACT

The subsurface contamination cannot be classified as surface water contamination. This is because the aquifers of the groundwater can be contaminated from sources that may not indirectly affect the surface bodies and the irrelevant of point vs non-point sources. Thus, determination of subsurface waterstatus requires analysis of chemical, physical and bacterial characteristics. As a result of development of land, agricultural and cultivation activitiesoccurring onthe upstream of Old Repas Dam in Bentong, Pahang, the water quality is expected to deteriorate due to contaminants gaining access into water bodies from various non-point sources (NPS). Taking into consideration that pollutants travel via water bodies, it is highly crucial to investigate the water quality from the basis of its discoloration. This research aimed to analyse parameter of heavy metals associated with the past tin mining activities and its comparison against the Malaysian National Water Quality Standard (NWQS). Besides that, the subsurface quality status and groundwater's quality classification is explored according to water quality index (WQI) adopted in Malaysia. The main six selected parameters focussed in obtaining WQI include Biological Oxygen Demand (BOD5), Chemical Oxygen Demand (COD), Dissolved Oxygen (DO), pH, Suspended Solid (SS) and Ammoniacal Nitrogen. The effect of past tin mining activities on water quality is determined by the presence of 6 heavy metals namely Arsenic (As), Lead (Pb), Zinc (Zn), Copper (Cu), Tin (Sn) and Aluminium (Al). The investigation involves mainly two tests which include abstraction well and observation well.

Keywords: Sub Surface, Old Repas Dam, National Water Quality Standard (NWQS), Water Quality Index (WQI), Dry Season, Wet Season

Paper ID: E006F

A NODED CARBON EMISSION TOOL (NCET) TO MEASURE EMBODIED CARBON (EC) IN COMPOSITIONAL CEMENTITIOUS MATERIALS

Syed Saad, Wesam Salah Alaloul, Syed Ammad, Abdul Hannan Qureshi, Aawag Mohsen Mohammed Alawag, Vipin Kumar Oad, Muhammad Altaf

Department of Civil & Environmental Engineering, University Technology Petronas, Persiaran UTP, 32610 Seri Iskandar, Perak, Malaysia
syed_19000314@utp.edu.my

ABSTRACT
The ever evolving modern construction industry is now producing the highest levels of carbon content adversely affecting the construction associated environment. Although, the impact of carbon induced emission is quite large, but still not enough measurable standards and tools to scale these emission are available. This study contributes to the body of knowledge by providing a Grasshopper based definition to calculate the embodied carbon with respect to the cement composition by percentage weight. This tool consists of three sections the first section incorporates the acquisitioned carbon emission factors for Cement, GGBS, Fly ash, NPA, Gypsum, Limestone, and MAC, the second part includes the Waste/Additional Energy incorporation to the compositional cementitious material, whereas the third section includes the calculation processes via which the prior two sections are merged. The resulting output delivers embodied carbon in concerned material in KgCO2/Kg as a unit.

Keywords: Embodied Carbon, Noded Carbon Emission Tool (NCET), Grasshopper, Visual Programming.

Paper ID: E007F

A DEA MODEL FOR SYSTEMATIC SCREENING OF SUSTAINABLE SUPPLIERS WITH UNCERTAINTY

*Trilok Mathur[1], Shivi Agarwal[2] and Srikanta Routroy[3]

[1,2]Department of Mathematics
[3]Department of Mechanical Engineering
Birla Institute of Technology and Science, Pilani, Pilani Campus (Rajasthan) – 333031, INDIA
tmathur@pilani.bits-pilani.ac.in

ABSTRACT

Manufacturing organizations are putting efforts to have a sustainable supply chain in place so that they can satisfy environmental regulations imposed by Government and project a better image among the customers in order to survive, sustain and excel in the competitive business environment while satisfying efficiently needs and requirements of the customers. Suppliers play a vital role in order to create sustainable and environmental friendly supply chain of manufacturers. The manufacturer must have a systematic screening of available sustainable suppliers along various dimensions including their environmental sustainability dimension so that they can take right outsourcing decision. It was observed that there are various factors involved in the screening which are both quantitative and qualitative in nature. Therefore, there is a great need for a systematic screening of sustainable suppliers which can handle qualitative and quantitative data with uncertainty. Considering the vagueness of experts' opinions and quantitative and qualitative nature of the factors involved, a modified integrated model of Data Envelopment Analysis (DEA) with the concept of fuzzy logic is proposed which has the capability to handle the above factors for studying, analyzing, comparing and screening the sustainable suppliers. A case study is developed in order to explain the salient features of the proposed model.

Keywords: Supply Chain, Green Supplier Evaluation, Fuzzy Data Envelopment Analysis

Paper ID: E008F

ELECTROLESS NI-P-TIO_2 (ENPT) COMPOSITE COATING: A REVIEW ON MICROSTRUCTURAL CHARACTERISTICS AND MULTIFARIOUS PROPERTIES FOR SURGICAL INSTRUMENTS.

Imtiaz Ahmed Shozib*[1], Azlan Ahmad[2], Ahmad Majdi Abdul-Rani[3] and Nuzhat Tasnim[4]

[1]Postgraduate research student, Mechanical Engineering Department, Universiti Teknologi PETRONAS, Malaysia.
2 Lecturer, Mechanical Engineering Department, Universiti Teknologi PETRONAS, Malaysia.
3 Associate Professor, Mechanical Engineering Department, Universiti Teknologi PETRONAS, Malaysia.
4 Lecturer, Pharmacy Department, Varendra University, Bangladesh.
imtiazshozib87me@gmail.com

ABSTRACT

The absorption and dissemination of bacteria on the surface of medical equipment raises the risk of human infections. The exterior surface of the surgical tools should have strong protection against an unpropitious atmosphere. In the health sector, it is imperative to achieve the desired durability and further ensure the safety and reliability of the surgical tools for surgery. The objective of this review is to evaluate various properties of electroless Ni-P-TiO_2 (ENPT) composite coating with applying numerous modifications so that we can know the suitability of the ENPT composite coating for the surgical tools properly. In this paper, ENPT composite coating has been modified in several ways, some of them are by adding surfactants, TiO_2 sol, and heat treated TiO_2 nanoparticles in the electroless plating solution. This review aims to make a comparative analysis of the surface morphologies of these applied modifications and can enlighten us on the mechanisms behind the changing behavior of the properties. The deposition characteristics of ENPT composite coating are evaluated by scanning electron microscope (SEM), X-ray diffraction (XRD) to study the surface morphology and crystal structure of the coatings respectively. The microstructure study of ENPT coatings using the SEM image reveals the surface characteristics and pictorial concept of the deposited surface. This review paper is aimed to summarize tribological properties, mechanical properties and corrosion resistivity of ENPT composite coating. After evaluating and analyzing the data, this article reveals which modification suits best for surgical tools applications.

Keywords: Electroless coating, Tribological properties, Corrosion resistance, Antibacterial activity, Surgical tools.

Paper ID: E009F

THE PROSPECT OF GREEN ENERGY AND TECHNOLOGY IN BANGLADESH

Md. Abu Hasan Al Askary[1], Md. Rafiqul Islam Ronok[2], Md. Abdul Kader[3], and Md. Tauhidur Rahman[4]

[1]Department of Mechanical Engineering, Chittagong University of Engineering and Technology, Bangladesh
[2]Department of Mechanical Engineering, International University of Business, Agriculture and Technology, Bangladesh
[3]Department of Urban and Regional Planning, Chittagong University of Engineering and Technology, Bangladesh
[4]Department of Petroleum Engineering, Universiti Teknologi PETRONAS, Malaysia
as.hasan45@gmail.com,

ABSTRACT

Green Energy comes from environmental natural resources and these are renewable. Green technology alludes that is earth neighborly, created, and utilized in a way with the goal that it does not irritate our condition and conserves natural resources Its uses are getting widespread in response to global warming fears and the increasing scarcity of many natural resources. This paper reviews the previous studies related to green energy and technology and shows the existing scenario, potentialities of using it in Bangladesh. Data identifying strategies are gathered from a literature review, relevant green energy, and technology policies, government documents, interview with experts. There are some challenges in using green energy and technology such as high initial investment cost, still not familiar with people, many of the products are at the research and development stage, lack of skilled human resources, etc. Besides, there are some problems in growing green energy and technology in the country such as lack of clear and specific policy, operation and maintenance, lack of technical assistance, etc. Based on problems, a strategic framework such as the formulation of integrated policy is recommended. Certainly, further research in this sector will help to create a sustainable environment.

Keywords: Green energy, Green technology, Problems, Recommendations.

Paper ID: E010F

PERFORMANCE COMPARISON OF COLOUR SPACES FOR SPECULAR HIGHLIGHTS SEGMENTATION

Atif Anwer[1], Nidal Kamel[1], Samia Ainouz[2], Syed Saad Azhar Ali[1]

[1] Centre for Intelligent Signal and Imaging Research, Department of Electrical and Electronic Engineering, Universiti Teknologi PETRONAS, Malaysia
[2] LITIS laboratory, INSA de Rouen, 76801, Saint-Etienne du Rouvray, France

ABSTRACT
Specular highlights in an image occur due to the interaction of light with the surfaces and materials of objects in the scene. These highlights are generally an unwanted feature in images since they lead to loss of colour information by saturating sensors and pixels. In this paper, the effects of specular highlight in RGB, HSV,Lab and YCbCr colour spaces are compared on different images. Based on the comparisons, a method based on the dichromatic reflection model is proposed for segmenting specular and diffuse intrinsic images using the Y-channel of the YCbCr colour space. Results show improved specular highlight segmentation in real-world images competing with state-of-the-art methods. The proposed method can segment out the areas that are strongly affected by specular highlights. The results are evaluated qualitatively and quantitatively using frequently used images by other works.

Keywords: Specular highlights, colour spaces

Paper ID: E011F

E-WASTE RECYCLING MANAGEMENT IN ENHANCING SUSTAINABILITY

Prashanth Beleya[1], Chong Wee Ki[1], Ng Jack Yien[1], Geetha Veerappan[1], & Dr Anto Cordelia[1]

[1]*Universiti Tunku Abdul Rahman, Malaysia*

pbeleya@gmail.com

ABSTRACT

E-waste recycling rate has been very low in Malaysia despite the growing volume of e-waste produced while improper disposal methods harm the whole ecosystem. This research looks at therationale behind the low e-waste recycling rate among Malaysian households. By conducting a quantitative survey on 384 households in Ipoh, which is an urban city in Malaysia it has been concluded that facilities, awareness, incentive and government policy have significant impacts on e-waste recycling rate and awareness showed to be the most influential among other factors. Disparagingly, households in Malaysia have not cultivated the practice of e-waste recycling into their daily lives or are doing it selectively, causing the low e-waste recycling rate. The research proposes certain holistic recommendations to enhance e-waste recycling rate and future directions for further studies.

Keywords: E-waste; E-waste recycling in Malaysia; households; sustainability; electronic devices

Paper ID: E012F

BIO PLANT SYSTEM IN URBAN AREA: AN IDEAL MODEL

Muqit Farhan, Muhammed Rashik Mojid and Muhib Farhan

Rajshahi University of Engineering & Technology, 6204, Rajshahi, Bangladesh
Department of Petroleum Engineering, Universiti Teknologi Petronas.
Seri Iskandar, 32610, Perak, Malaysia
Department of Electrical and Electronics Engineering, Chittagong University of Engineering & Technology, 4349, Chittagong, Bangladesh
muqitfarhan@gmail.com

ABSTRACT

Bangladesh is an energy-starved country. Despite its large reservoir of natural gas, demand in the sectors like households and industries is too high to fulfill. Waste management in big cities also becomes a critical problem as more and more people are migrating to urban areas. Biogas can be a promising solution for both the energy crisis and waste management for countries like Bangladesh because of its simplicity, price, and efficiency. But the establishment of bio-plants in an urban area is not so common due to the lack of space, risk of leakage, and social taboos. This study represents an ideal urban system with an integral waste management and biogas production plant to evaluate system feasibility based on the economic benefits and associated risks from energy production. A modern bio-plant arrangement has been proposed for an ideal urban locality having 50 buildings with 10 families each. This study shows that gas usage of such an ideal locality can be fulfilled from the proposed bio plant system by up to 35% of the per day demand. Although the model requires some modification for its real field implementation, this study can pave the way for further research in this arena.

Key Words and Phrases: Biogas, Human excreta, Kitchen waste, Sulfur treatment, Urban area, Daily demand.

Paper ID: E013F

MULTI-OBJECTIVE SPOTTED HYENA OPTIMIZER FOR 3D WELL PATH OPTIMIZATION.

Kallol Biswas[1], Touhidul Islam,[2] Jewel Sikder Joy,[3] Pandian Vasant,[1]jose Antonio Gamez Vintaned,[4] Junzo Watada[5]

[1]Department of Fundamental and Applied Sciences, Universiti Teknologi Petronas, 31750 Tronoh, Perak, Malaysia.[2]Department of Electrical and Electronic Engineering International Islamic University Chittagong Chittagong, Bangladesh.[3]Institute of Energy Technology Chittagong University of Engineering and Technology, Chittagong, Bangladesh.[4]Department of Petroleum Geosciences, Universiti Teknologi Petronas, 31750 Tronoh, Perak, Malaysia.[5]Department of Computer and Information Sciences, Universiti Teknologi Petronas, 31750 Tronoh, Perak, Malaysia

Kallolbiseee@Gmail.Com

ABSTRACT

The optimized design of wellbore trajectory acts as a key factor in the industries associated with oil and gas. Optimization of three significant parameters i.e. true measured depth, torque, and well strain energy are required for optimum wellbore trajectory. As per the formulation of the problem, affiliated objective functions in this paper rely upon 16 different variables. Nowadays nature-inspired algorithm for optimization of trajectory has attained immense popularity. As this issue is dealing with a multi-objective problem, a multi-objective spotted hyena optimizer is introduced to execute the highly non-linear, complex, and contradictory optimization problems. To ascertain the significance, the introduced algorithm has been compared with other established and commonly employed algorithms. Besides, statistical tests like inverse generation distance and maximum speed have been performed to test the proposed optimization algorithm.

Keywords: Metaheuristic algorithm, spotted hyena optimizer, multi objective, wellbore trajectory, nature inspired algorithm

Paper ID: E014F

METAHEURISTIC APPROACHES TO OPTIMIZE SUPPLY CHAIN DESIGN PROBLEMS

Md Ashikur Rahman[1], Pandian M Vasant[2] and Rajalingam Sokkalingam[3]

[1,2,3]*department Of Fundamental And Applied Sciences Universiti Teknologi Petronas 32610, Perak, Malaysia*
rahman.ashik.eng@gmail.com.

ABSTRACT

Every manufacturing process in this industry booming world requires cost effective and precise design of supply chain. Eventually, the population demand as well as the sustainability issues have impacted on overall supply chain network system. As like as other optimization fields like energy, system, the supply chain network optimization has become an indispensable part of every industry. In this research authors will try to concentrate on an efficient optimization method in a supply chain planning (SCP). At first, authors would demonstrate a supply chain model consisting of suppliers, assemblers, distribution centers and retailers. This model would be expressed as MIXED INTEGER NON- LINEAR PROGRAMMING MODEL firstly and two widely used metaheuristic technique e.g. Particle Swarm Optimization (PSO) and Teaching Learning based Optimization (TLBO) have been implemented to optimize that model. Core objective of this optimization model concludes cost minimization with respect to the service level in every echelon of supply chain. In the comparison between PSO and TLBO, TLBO shows better optimality in this minimization problem.

Paper ID: E015F

TRAVEL BEHAVIOR AND HEALTH: INTERACTION OF ACTIVITY-TRAVEL PATTERN, TRAVEL PARAMETER AND PHYSICAL INTENSITY

Mujahid Ali[1]*, Dimas B.E. Dharmowijoyo[1], Indra S.H. Harahap[1], Anas Puri[2] and Liza Evianti Tanjung[1]

[1]Civil and Environmental Engineering Department, Universiti Teknologi PETRONAS, 32610, Seri Iskandar, Malaysia
[2]Department of Civil Engineering, Faculty of Engineering, Universitas Islam Riau, Pekanbaru 28284, Indonesia
**mujahid_19001704@utp.edu.my*

ABSTRACT
Health and transport are interlinked with each other at many stages such as, transport influence health whereas health influence transport options which show that health is a permanent constraint. This study aims to investigate the interaction between activity travel participation, built environment, leisure time physical activity and health parameters in Bandung Metropolitan Area (BMA) Indonesia, using simple regression analysis. Active transport is used, which may mediate the relationship between activity-travel pattern, built environment and health variables. In the current study, comprehensive panel data were collected at a household level, including detail travel behaviour variables and comprehensive in-home and out-of-home activities, the rate of physical activities, travel parameters, as well as health related quality of life (QoL) information in twenty-one consecutive days in 2013. A total of 400 respondents were recorded which represented 0.015% of the total population of Bandung, Indonesia. The data was analyzed through the Statistical Package for Social Sciences (SPSS version 26.0.0) software using descriptive and simple linear regression analysis. The analysis of the collected data indicated that those who demonstrate a propensity attached to use non-motorized transport were significantly correlated with better physical health and significant reduction in the use of motorized mode. Furthermore, undertaking discretionary out-of-home activities and spending more time on leisure, sports and grocery shopping tend to be positively correlated with better physical health condition. In addition, using auxiliary time in social activities was significantly correlated with better social health.

Keywords: Activity-travel participation, Built environment, Active transport, Physical health, Social health

Paper ID: E016F

Well Location Optimization Using Novel Bat Optimization Algorithm for PUNQ-S3 Reservoir

Jahedul Islam[1], Pandian M. Vasant[2], Ahshanul Hoqe[3], Tawhida Akand[4], Berihun Mamo Negash[5]

[1,2] Department of Fundamental and Applied Sciences Universiti Tektologi Petronas 32610 Seri Iskandar, Perak Darul Ridzuan, Malaysia
[3,4] Department of Electrical & Electronic Engineering Chittagong University of Engineering & Technology Chittagong, Bangladesh
[5]department of Petroleum Engineering Universiti Tektologi Petronas 32610 Seri Iskandar, Perak Darul Ridzuan, Malaysia

bmamo.negash@utp.edu.my

ABSTRACT

The complexity of optimizing well location poses a major challenge. Past studies have used classical and non-classical methods to solve this problem. However, the most metaheuristic techniques, which we consider to be the most effective algorithms in the field, present local optimization problems. This paper studies the application of the novel bat algorithm in finding the position of well locations to provide better net profit. It also provides a comparative study of the proposed method and the generally established methods that have been practiced to optimize well locations. The results of the study show that the novel bat optimization algorithm is effective compared to other existing technologies.

Key words: Metaheuristic Algorithm, Well Placement Optimization, Multimodal, QPSO, Gradient-free.

Paper ID: E018F

A BENCHMARKING APPROACH WITH MISSING VALUES USING DATA ENVELOPMENT ANALYSIS FOR NON-SYMMETRICAL FUZZY DATA

Shivi Agarwal and Trilok Mathur

Department of Mathematics, Birla Institute of Technology and Science, Pilani, Rajasthan-333031, India

ABSTRACT

Data Envelopment Analysis (DEA) is a non-parametric technique for benchmarking of a set of homogeneous decision making units (DMUs) with common crisp inputs and outputs. However, in real word applications, some data are missing which cannot be deal by traditional DEA models. The study proposed a benchmarking approach where the missing data can be represented as linguistic variable characterized by fuzzy numbers. This paper attempts to extend the traditional DEA model to a fuzzy framework, thus proposing a fuzzy DEA model to deal the benchmarking of the missing data which is associated with non-symmetrical fuzzy data. The proposed fuzzy DEA model is able for benchmarking of DMUs in terms of fuzzy efficiency. A numerical example is presented to illustrate the fuzzy DEA model. Finally, the study also ranks the DMUs based on the fuzzy efficiency.

Keywords: Data Envelopment Analysis, Efficiency, Fuzzy LPP

Paper ID: HS003F

COVID-19: A NOVEL FRAMEWORK TO GLOBALLY TRACK CORONAVIRUS INFECTED PATIENTS USING BLOCKCHAIN

Mohamed Rimsan[1,*], Ahmad Kamil Mahmood[1], Muhammed Umair[1], Farrukh Hassan[1], Fathima Asma[2]

[1]High Performance Cloud Computing Centre (HPC3), Department of Computer & Information Science, Universiti Teknologi PETRONAS, Seri Iskandar, Perak, Malaysia
[2]Unit of Siddha Medicine, Univerity of Jaffna, Sri Lanka
[1]mohamed_19000327@utp.edu.my

ABSTRACT

Since December 2019, COVID-19 is being spread in various forms. Nothing like this pandemic was previously seen in the world. Today, we must take a closer look at the reporting infrastructure available both in technology and regulation for communicable diseases, so that in the future, we do not have to face another pandemic such as this. The lack of detection of infected patients globally is very difficult, to prevent the coronavirus spreading to other countries. So, the main objective of this study is to propose a novel framework to track globally infected patients using Blockchain technology while using the methodology of design science research. Therefore, this paper has been organized into four sections such as introduction, literature review, methodology and a novel framework.

Keywords: Blockchain, CoVID19, Design science research, Coronavirus, Peer-to-Peer.

Paper ID: HS004F

FATIGUE ASSESSMENT OF OIL AND GAS TANKER DRIVERS: PSYCHOMOTOR VIGILANCE TEST (PVT-192)

Al-Baraa Abdulrahman Al-Mekhlafi [1*], Ahmad Shahrul Nizam Isha [2], Asrar Ahmed Sabir [3], Gehad Mohammed Ahmed Naji [4], Muhammad Ajmal [5], Abdo Hasan Al-Harasi [6]

*[*1, 2,3,4,5] Department of Management & Humanities Universiti Teknologi PETRONAS Perak, Malaysia*
[6]Faculty of Business and Management (UiTM) Universiti Teknologi MARA
albaraa901@gmail.com

ABSTRACT

Fatigue has seen as a major risk factor for transportation accidents. The purpose of this study is to assess the fatigue rates among oil and gas tanker drivers and provide workable advice that can recommend the transport companies. A purposive sampling technique was adopted to select 10 suitable drivers (5 of them worked at day shift and the other 5, at night shift) for the study. Through Psychomotor vigilance test (PVT-192), drivers' fatigue has been monitored to assess their fatigue status while driving for five days. Measurements had conducted before the drivers leave the company parking to oil and gas stations, then after their return. Results of this study show that those who drive very early in the morning are subjected to high fatigue risk, as observed in the number of lapses (RT>500ms). Interestingly, in the night shift, subjective alertness measurement results indicate less fatigue risk before the assumption of duty, as compared to after the return of the driver. Overall, the fatigue seemed to be at high levels in the day shift than the night shift. Therefore, a fatigue management system has been suggested to implement in the related company.

Keywords: *Fatigue, Oil and Gas Tanker Drivers, psychomotor vigilance test (PVT-192)*

Paper ID: BMH001

FULL-VERSION OR PARTIAL-VERSION OF THEORY OF PLANNED BEHAVIOUR FRAMEWORK? THE ROLE OF SALIENT BELIEFS' INFLUENCES ON MALAYSIAN ACADEMICS' INTENTION TO PUBLISH IN INDEXED JOURNALS

Mosharrof Hosen, Yee-Lee Chong, Lin-Sea Lau

Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Kampar Campus, Perak, Malaysia
jonycox74@gmail.com

ABSTRACT

To qualify for assessment and possible inclusion in world top universities ranking services, various incentives have been provided by private universities of Malaysia to improve one of the quantifiable performance indicators; research publications. However, publishing in indexed journals requires more focused endeavours and is still in embryonic stage. To develop a successful intervention strategy, the theory of planned behaviour (TPB) has been used to examine the antecedents of the participant's attitude, subjective norm (SN), and perceived behavioural control (PBC). In literature, confusion arises between the use of full-version versus the partial-version of TPB. Compare to the partial-version of TPB, a preliminary study to elicit and analyse the descriptors of salient beliefs; behavioural belief (BB), normative belief (NB), and control belief (CB) that can affect academics to form specific reactions towards TPB constructs needs to be carried out, prior to the main study. Detail discussions on the application of full-version of TPB however are not sufficiently covered in this body of knowledge. To fill up important research gap, this paper intends (i) to increase the understanding of what the full-version of TPB constructs measure; (ii) to discuss the procedure for eliciting the salient beliefs; and (iii) to understand how data on salient beliefs are to be analysed. The result shows that participants of the preliminary study appreciated the advantage descriptors more than the disadvantage descriptors of BB. Nevertheless, the result cannot be generalised yet. The important advantage and disadvantage descriptors that are elicited in the preliminary study needs to be further tested in the main study involving a larger pool of respondents. Upon confirming the significant effect of the respective advantage and disadvantage descriptors in the main study, the policymakers then only can strategize an intervention policy that can impede the negative beliefs (or disadvantage descriptors) and strengthen or facilitate the development of positive ones (or advantage descriptors). Similar argument applies for the use of detecting the NB and CB descriptors.

Keywords: Full-version of TPB model, behavioural belief descriptors, normative belief descriptors, control belief descriptors, Malaysia

Paper ID: BMH001F

A CONCEPTUAL FRAMEWORK FOR THE DETERMINANTS OF ORGANIZATIONAL AGILITY: DOES SAFETY COMMITMENT MATTERS?

Muhammad Ajmal[1]*, Ahmad Shahrul Nizam Bin Isha[2], Shahrina Md Nordin[3], Noreen Kanwal[4], Al-Baraa Abdulrahman Al-Mekhlafi[5], Gehad Mohammed Ahmed Naji[6]

[1-6]Department of Management and Humanities, Universiti Teknologi PETRONAS, Perak, Malaysia
**M.ajmal303@gmail.com*

ABSTRACT

Purpose – The purpose of this paper to develop a conceptual framework to explore the relationship between organizational agility determinants (safety training, safety rules and procedures, safety communication) with mediating effect of safety commitment on safety performance. The idea behind this study is to highlight the organizational agility determinants to improve safety performance, particularly in the oil and gas industry of Malaysia. The outcome of this study will provide strategic plans to reduce the accidents, injuries and near misses. **Design/methodology/approach** – in this study, population will be employees from the oil and gas industry, and the sample will be selected from the manufacturing and operation department from the oil and gas industry. The cross-sectional strategy will be used to collect data. **Findings:** -- Initial objective of the paper is to establish the relationship among organizational agility determinants to improve safety performance. The second objective is to develop a conceptual framework for the oil and gas industry to reduce accidents, injuries and near misses. Furthermore, this study build relationship among relevant constructs of safety performance. This paper can assist employers and safety officers in having a deeper understanding of the importance of organizational agility factors and safety commitment to improving safety performance and its impact on the oil and gas industry.**Originality/value:** -- The clear worth of this paper is to develop a conceptual framework for the oil and gas industry. This study will be beneficial for safety managers and policymakers who are interested in reducing the cost of safety management performance. In future, this study will be tested empirically on the basis of constructs from the literature.

Keywords: -- Organizational Agility, Oil and Gas industry, Safety commitment

Paper ID: BMH002F

IMPACT OF SAFETY CULTURE AND PSYCHOSOCIAL HAZARD ON SAFETY PERFORMANCE AMONG UPSTREAM EMPLOYEES IN MALAYSIA AT OIL AND GAS INDUSTRY

Gehad Mohammed Ahmed Naji[1], Ahmad Shahrul Nizam Isha[2], Mohammed Alzoraiki[3], Al-Baraa Abdulrahman Al-Mekhlafi[4], Osama Sharafaddin[5] And Muhammad Shoaib Saleem[6]

[1,2,5,6] Faculty of Management & Humanities, Universiti Teknologi PETRONAS (UTP), Malaysia,[3]Faculty of Petroleum engineering, Universiti Teknologi Malaysia (UTM), Malaysia, [4]Faculty of Leadership and Management, Universiti Sains Islam Malaysia (USIM),

gehadnaji.utp@gmail.com

ABSTRACT

Purpose: This research work focuses to develop and initiate a significant framework proposal for staff and employees who work in petroleum industry mainly in Malaysia upstream sector. The research work investigates the dimensional effects of safety culture and psychosocial hazard on employee's safety performance at the workplace. **Methodology:** A questionnaire will be conducted for data collection. Using an administrated questionnaire approach, questionnaires will be sent to staff who work at oil and gas upstream sector. To distribute the questionnaires, a stratified sampling with a Likert 5-point scalewill be used. Subsequently, proposed model will be evaluated using the structural equation modelling, along with (PLS-SEM) the partial least squares. **Findings:** The magnificent outcome of this research study will be beneficial as a supportive tool that can guide employees in conducting more safety training that will eliminate or reduce incidents incident while working. The goal of any organisation is to prevent accidents during work. **Practical Implications:** This review is mainly concerned with the improvement of safety performance and its impact on psychosocial hazard and safety culture. The actual culture of safety should play a significant role in safety performances at the workplace. The effectiveness of safety culture among workers and leaders will surely assist in reducing the risks of psychosocial hazard. **Value of originality:** Few literatures have concentrated deeply concentrated on employees' safety culture that examined and studied the impact on better safety performance. Therefore, there is a deficiency in overcoming occupational psychosocial hazard. This study focuses and evaluates the effects of psychosocial hazard and safety culture on employees' safety performance at the workplace.

Paper ID: BMH003F

GAUTAM VASUDEV MENON: TRAVELLER, TOURIST AND A TOUR GUIDE: A STUDY ON TRAVEL REASONS, MOTIVES AND PLACEMENT IN HIS FILMS.

N. Sriganeshvarun and Jayaprakash D

Department of Visual Communication, Meenakshi Academy of Higher Education and Research (Deemed to be University), Chennai, India
srivarun6@gmail.com

ABSTRACT:

Many western literature have studied the impact of films on travel motives, product placement of countries in films such as Lord of the rings in New Zealand, Brave heart for scot land and Vicky cristina Barcelona for Spain and many more. This paper tries to find out whether the films Directed by Gautam vasudev menon over the year have created any impact on the minds of the people. This paper tries to figure out the travel motives, of the director and its reflection on the films that he has made using textual analysis method and an indepth interview method was used to understand the audience perception from the songs which had travel placements as part of the story. The result show that the director vision of storytelling and this visual literacy on creating travel oriented concepts was verified through participants answer. Director does create a world of fascination for travel through his films and encourage people to be a traveler or a tourist through his films.

Keywords: Film Induced Tourism, Travel Motives, Gautam Vasudev Menon

Paper ID: BMH004F

AN INTERCONTINENTAL COMPARATIVE FINANCIAL ANALYSIS OF CIVIL AVIATION BUSINESS

Pramod Kumar Srivastava[1], Pushpendu Rakshit[2], Yogender Kumar[3], Vishal Kumar[4], C.K. Singh[5], Mohd. Afjal[5]

[1]Associate Professor, Galgotias University, Faculty of IT & Management, ABS, Mumbai,
[2]Assistant Professor, Vinayak Vidyapeeth, Meerut, Ghaziabad,
[3]Assistant Professor, Faculty of Commerce, MKR Govt. College, Ghaziabad,
[4]Faculty of Arts, Humanities & Communication, Dean, CSMU, Navi Mumbai,
[5]Faculty of Finance, Amity University, Navi Mumbai, Mumbai.
afzalmfc@gmail.com

ABSTRACT

This study tries to measure the financial analysis of the airline business taking the top two Indian airlines companies, only SpiceJet and IndiGo are considered from India and companies operating in the similar model in the international scenario, such as Southwest Airlines, Delta Air, Air Asia and Singapore Airlines are compared together with focus on making the analysis better. For achieving the objectives of this study, return on equity has been calculated using DuPont analysis. The DuPont analysis measures operational ability of a firm (Sheela & Karthikeyan, 2012). Thus, the financial statements indicate the profitability and sustainability of the business. The analysis shows that in terms of operating profit percentage of sales, IndiGo has outperformed even its international peer, with the ratio at 34-40% in 2015-2018 as compared to next better company, Air Asia, which has ratio between 15-30%. Even in year 2019 where the ratio has declined in all the companies and IndiGo has remained at 24%, again the highest.

Keywords*:* Profitability and Sustainability of the business, Return on Equity and DuPont Analysis.

Paper ID: BMH005F

IMPACT OF COVID-19 ON INDIAN ECONOMY, E-COMMERCE, EDUCATION AND EMPLOYMENT

Alka Sharma and Sushma Kumari*

School of Business, Galgotias University, Greater Noida
**Sushmakumari8256@gmail.com*

ABSTRACT

Corona virus entered in India from China. The lockdown started in India from 25th March to 3rd May to slow down its effect compared to other countries. Our environment was very clear in 40 days lockdown, but stock market fell down. Our government had initiated many programmes for the "Aam-janta" to tackle the problem of covid-19. In our country 3 days infant to 95 years old person had found in positive, our government had initiative programmes like lockdown whose appreciated by the all over the world and government shows the respect for health workers by the Janta curfew on 22 March. It shows the great respect for health workers like a nurses, doctors and police. This Pandemic has disturbed the every field of life as business, economy, employment and education. This pandemic reduced the Indian trade market and increases the dependence on China for import. China is ruling on our e-commerce by their investment. We are expecting that after July everything would be short out, if not then this pandemic will be spread out the tsunami of corona. Many industries are cutting down the employees' salaries and terminate the employees, so Government should be taking the initiative steps; if not it will be lead to the unemployment in India. Indian industries through e-commerce is expanding, and it is expecting that our country will be become world second market up to 2034. Educational institute condition also is not very good after pandemic, because schools and colleges were closed on 17th March 2020. School and colleges are working on digitalization and Government is taking an advice by teacher, students and experts, how to manage study and exams. So these Research papers explore the effect of covid-19 and also find out the different ways to tackle the unpredictable situation in different aspects from economy to employment and commerce to education.

Keywords: - corona, lockdown, economy, education, unemployment, e-commerce, Aam Janta, Government, pandemic, employment.

Paper ID: BMH007F

AN ANALYSIS OF THE FACTORS AFFECTING THE INDIAN RUPEE VOLATILITY

B. Ramesh[1] and Savina A Rebello[2]

[1]Professor, Former H.O.D and Dean, Faculty of Commerce and Management, Goa Business School, Goa University, Goa

[2]Research Scholar, Department of Commerce, Goa Business School, Goa University, Goa

Brames@refiffmail.com

ABSTRACT

Exchange rates connects the domestic and the international markets for goods and services. It signals competitiveness of a country's exchange power with the rest of the worlds in a global market. It has the potential to have an impact on the economic welfare of the nation. The study of exchange rate and its relationship with different variables gained considerable importance in the last few decades. It becomes a important issue for professionals and researchers mostly for developing countries. From 1972many developing countries bought a shift in their exchange rate policy from a fixed system to a floating exchange rate regime as a measure to control exchange rate volatility. This study would help in a thorough understanding of the sources of fluctuations of the exchange rate which is essential to design a more effective macroeconomic policy. This paper gives a brief view of the Indian Rupee in terms of fluctuations in the Indian Rupee against various currencies such USD, EURO, Japanese Yen and Pound, Foreign exchange reserve, and foreign exchange market turnover in India. The paper tries to analyze the factors affecting the Indian rupee volatility. Monthly data from April 2013 to March 2020 has been used for the study. From the graphical and trend analysis it is found that rising crude oil prices, increasing current account deficit, decreasing interest rates, increasing withdrawals by Foreign Institutional Investors, decrease in Foreign Direct Investments and decreasing Gross Domestic Product growth rates have contributed to the depreciation of the rupee against the US Dollar.

Keywords: Exchange Rates Fluctuations, Macroeconomic Variables,

Paper ID: BMH008F

ALTERNATIVE SKILLS ASSESSMENT UTILISING COLLABORATIVE DESIGN INSTRUMENTATION IN ENHANCING DIGITAL LEARNING SYSTEMS

Soon Eu Hui[1], Nur'azah Abdul Manaf[2], Sabariah Baharun[3] and Mohd Naz'ri Bin Mahrin[4]

[1]Faculty of Business, Communication and Law (FOBCAL), INTI International University (IIU), Negeri Sembilan, Malaysia
[2,3]Malaysia-Japan International Institute of Technology (MJIIT), Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia
[4]Razak Faculty of Technology & Informatics, Universiti Teknologi Malaysia, Kuala Lumpur, Malaysia
eddiesoon@gmail.com

ABSTRACT
The adaptation of digital instruments geared for sustainable development in online education has continued to evolve significantly over the years, which highly reflects the shift to the Fourth Industrial Revolution (IR4.0). The technicalities that supports these online learning methodologies redefines the importance in mediating effective measurement processes, in order to support the increased usage of digital learning systems (DLS). In reflection of the industry shifting its focus towards skills education and vocational education (TVET), particularly in a post-pandemic ecosystem, the dependency of digital learning systems have exponentially increase, bearing heavy weightage in supporting online communication among learners that transcends conventional practices. However, there is no standardized recognition in measuring the learner's attainment upon successful completion of any online modules. This is mainly due to the fact that there is no universal governing education policy that defines achievements through digital learning systems. This study executes a quantitative approach to look at possible acceptance of a secondary online instrumentation that functions to establish progressive skills development for a sample group of digital literate learners in Malaysia. The outcome contributes greatly to manifest innovative design ideas that can enhance skills assessment methods that conforms to skills education and TVET across the globe.

Keywords: Alternative Skills Assessment, Digital Learning System, Digital Literate Learners, Skills Education and TVET.

Paper ID: BMH011F

STRATEGIC FINANCIAL PERFORMANCE EVALUATION AND BANKRUPTCY PREDICTION OF INDIAN PETROLEUM INDUSTRY

Mohd Afjal[1] and Sandhyarani Das[2]

[1]Faculty of Finance, Amity Business School, Amity University, Mumbai.
[2]Associate Professor, Department of Economics, Berhampur University, Berhampur, Odhisha
srd1407@gmail.com

ABSTRACT

The Indian Petroleum Industry plays a vital role in the economic development of the country. This industry displays and helps the economy to enhance the level of production, employment, foreign exchange earnings, foreign exchange savings, providing a base to the other industries, promoting smooth transportation facilities, etc. In the modern age of progress, this industry has a great utility in transforming the country from a developing country to a developed country. Furthermore, the petroleum product demand has increased tremendously over the years. To fulfil such a huge demand of the country, this industry has to carry out their operations for a long. For this determination, the petroleum companies must have a sound efficiency and financial position. However, the available literature makes it confirms that there are various studies conducted on financial performance aspects of the petroleum companies. The present study tries to evaluate the financial performance, ranking of the financial performance and bankruptcy prediction of the petroleum companies. For this purpose, six petroleum companies selected which account for the major portion of India's total oil and gas production. The companies are BPCL, HPCL, IOCL, ONGC, IOCL and RIL. The data have been collected from the Prowess database and annual reports of the selected companies and it coversa period of 27 years, i.e., from 1991 to 2017. The present study may play a significant role for its different external and internal users in their top decision making policy.

Keywords: petroleum industry, performance evaluation, bankruptcy prediction, JEL Classification: D22, L2, L25, G33

Paper ID: BMH012F

A CRITICAL STUDY TO COMPREHEND AMENDMENTS IN INDIAN EDUCATION SYSTEM POST COVID-19

Mohd Afjal[1] and Pushpendu Rakshit[2]

[1]Assistant Professor, Amity Business School, Amity University Mumbai.
[2]Visiting Professor, Amity Business School, Amity University Mumbai.
afzalmfc@gmail.com

ABSTRACT

India as a youth nation had 37.4 million learners enrolled in higher education in year 2018-19. The nation has turn out to be the second foremost marketplace for e-learning after the US. The segment is anticipated to reach US$ 1.96 billion by the year 2021 with estimated 9.5 million users. Owing to the pandemic edification has transformed dramatically, with the distinctive increase of e-learning, whereby education is accepted remotely and on digital podia. Even previously COVID-19, there was already high advancement and adoption in education technology. Whether it is software based, cybernetic tutoring, video conferencing paraphernalia, or e-learning software, there has been a noteworthy surge in practice since COVID-19 in thenation. There is a need for a gear swing in our thoughts about educating and learning to create an enabling atmosphere for learning with technology. Teacher capacity is key, but we must also change our mindset about teaching and learning as just a same time, same place activity. This study is based on primary data and explorative in nature, which outcomes assertively to the paradigm shift in Indian education system amid &post covid-19 era.

Keywords: COVID-19, education system, blended learning, virtual learning.

Paper ID: ITCS006

COVID-19 FOOTPRINTSWORKING OF INFORMATION TECHNOLOGY AND SUPPORT

Sharda Jha* and Alka Sharma

School of Business, Galgotias University, Greater Noida
**missshardajha@yahoo.co.in*

ABSTRACT

IT Sector always has an important role in the growth of the Indian Economy and to other sections also like the financial sector, defense, education, marketing, human resource, etc. Today most of us due to COVID -19 are dependent on the IT sector as the almost whole world is working from home and the kids are taking their classes through an online process. Keeping this, here we will have some review of how was the IT system in India before this virus entered and what is the scenario at present. We all know that India is a developing country, talking 1990 there was a beginning of Economic Liberalization including the privatization of enterprises which were state-owned, industrial deregulation, and reduced the control on foreign investments and trade. Today we can say that India's IT sector is diverging in different units i.e., E-commerce. This paper will focus, how the IT Industries are helping out with normal life, staying healthy, and stop COVID-19 from spreading.

Keywords: COVID-19, IT industry, economy, education.

Paper ID: ITCS005F

A CRITICAL STUDY TO UNDERSTAND PRIVACY CONCERNS WITH COVID-19 PATIENT DATA

Pushpendu Rakshit[1], Dr. Pramod Kumar Srivastava[2], Dr. Shailendra Kumar Srivastava[3], Yogender Kumar[4] and Vishal Kumar[5]

[1]Faculty of IT & Management, ABS, Mumbai, [2]Associate Professor, Galgotias University.
[3]Associate Professor, Galgotias University, [4]Assistant Professor, Vinayak Vidyapeeth, Meerut, Ghaziabad, [5]Assistant Professor, Faculty of Commerce, MKR Govt. College, Ghaziabad
Pushpendu_rakshit@yahoo.com.

ABSTRACT

Pandemic COVID-19 has increased our dependencies being on virtual world. Our nation has also marched ahead showing its presence on virtual world during these days of lockdown. The Digital India is a daydream to certify that government facilities are made available for all citizens electronically by filtering online infrastructure to produce nation forward digitally and economically during COVID-19 pandemic. Indeed, digital podia are found to be best suitable at modern times. As per Digital rights anxieties over details of Covid-19 quarantined people being shared on social media platforms, is called as breach of privacy. This research is naive by nature and holds pilot studies at present. Information concealment mentions to the craving of individuals to rheostat or have some influence over data about themselves. In this paper, we learn about the existing conditions of information privacy and conserving private details of patients or people under quarantine thus deliberates information privacy as a key construct. Privacy concerns to be a primary global worry and must be dealt strictly. Lack of cyber literacy leads to spread of fake news or misinformation about corona victims. The assessment of the literature reveals that information privacy is a diverse concept, but seldom studied for families, patients, corona worriers in the reality of the COVID-19 pandemic. This is an explorative study on secondary data to identify the ways to maintain data privacy of corona patients in India amid pandemic era.

Keywords: Digital India, COVID-19, data privacy, information privacy, cyber literacy, laws.

Paper ID: ITCS007F

Extension of TAM Explaining the Determinants of I-Banking Adoption: Bangladesh Perspective

[1]Mohamaad Rokibul Kabir*, [2]Md. Aminul Islam

[1]Post-Doctoral Research Fellow, Universiti Malaysia Perlis, Malaysia and Associate Professor, East Delta University, Bangladesh
[2]Professor, Universiti Malaysia Perlis, Malaysia
rokibul.k@eastdelta.edu.bd

ABSTRACT

The advancement of technology and rapid growth in the number of internet users throughout the world has been pushing people to do all sorts of transactions online. This move towards digitization requires banking services to be automated and online. With its dream to become a digital nation by 2021, Bangladesh is striving hard to enter into the world market online. Hence, though late, banks in Bangladesh have started their i-banking services. However, the acceptance level of users is essential to understand before its full-fledged implementation. Thus, this study aims at explaining the determinants of internet banking with extended technology adoption model (TAM) as the base. Though a good number of studies have already been undertaken throughout the world using TAM, the study is justified in the sense that it would mitigate the research gap considering two country specific variables like security and privacy risk on the backdrop of the absence of a strict regulation for the use of internet and a much talked issue of internet speed and quality in Bangladesh. A questionnaire survey has been conducted among the internet users to identify the determinants of the intention to use i-banking (IUIB) and hence the adoption of it. A total of 200 questionnaires have been administrated using three different forms called in person survey, postal mail and google form. Out of 200 questionnaires, 150 fully completed and usable questionnaires have been received with a success rate of 75%. All the independent variables called perceived usefulness, perceived ease of use, perceived enjoyment, access to information, security and privacy (SP) and quality of internet connection (QIC) are found to be significant in explaining the users' IUIB. The IUIB is also found to be highly significant to explain the i-banking adoption by the users. Country specific variable like the SP has a negative impact on i-banking adoption while the QIC found to have a positive impact in Bangladesh context. Hence, the study recommends the policymakers of Bangladesh to initiate strong laws for protecting the security of data over internet with a special urge to the telecommunication regulatory authority and telecom companies to ensure technology infrastructure for high speed and smooth internet services.

Keywords: Internet Banking, Determinants, Extended TAM, Bangladesh.

Paper ID: ITCS008F

TOWARDS GREEN IT USING CLOUD COMPUTING FOR SUSTAINABLE ENVIRONMENT

Jeya Mala[1*], Vidya[2] and Pradeep Reynold[3]

[1]Director of MCA, Fatima College, Madurai
[2]Fatima College, Madurai.
[3]Environmental Engineer, Hubert Envirocare Systems Pvt.Ltd., Chennai
**djeyamala@gmail.com*

ABSTRACT

In this pandemic period, the importance of online resources sharing, teaching-learning, even scheduling meetings in high-level decision making and high volume research even this COVID-19 databases and data processing has increased tremendously. In most of these applications, they are all executed from a remote cloud server. The reason behind using these kinds of remote virtual servers is that, they provide a high level advantage of access the same resources by several hundreds and thousands of people at the same time. Now, if the same resource is provided as a dedicated one in one's own premise, then all these thousand people should have their own instance of same application which will in turn increases the processing power, resource wastage and high power consumption for their individual working. This has tremendously affected the environment by means of high level carbon emission, and so the cloud virtualization phenomenon helps reduce such power consumption by providing a resource sharing environment and only one remote server will do the process and all others which are accessing these resources are only using the service on demand-basis. This highly reduces the carbon emission in the environment and helps to have a sustainable and safe environment.

Key words: Green IT, Software Development, Cloud Computing, Sustainable Environment.

Paper ID: ITCS009F

A SURVEY OF SOFTWARE COMPLEXITY METRICS

Meshach Ponraj

Associate Professor, Department of Computer Science, Madurai Kamaraj University, Madurai-625021 India
ponrajcomputer@gmail.com

ABSTRACT

Reducing the complexity of a program is one of the major objective of software engineering paradigm. It is not possible to control the complexity of a program without measuring them as a metric. From the stand point of understanding a piece of code given by the developer, by the tester and maintenance engineer various complexity measures were introduced in the recent past. In this work, various softwere complexity measures were introduced along with their merits and demerits. A unified method is required in the further research in software metrics. In the further research direction, a new complexity metric called MESHA. It is an acronym for Metrics based on Eigenvalues of Source code Hierarchiel Adjacency Matrices. While contructing the Adjacency Matrices we consider both the data and the control flow graphs of the modules in the hierarchy.

Paper ID: ITCS010F

COMPARISON OF ASSOCIATION RULE MINING ALGORITHMS IN DATA MINING: A SURVEY

R.Smeeta Mary[1], K.Perumal[2]

[1]Assitant Professor, Dept of Computer Applications, Fatima College, Madurai, India
[2]Professor, Department of Computer Applications, School of Information Technology, Madurai Kamaraj University, Madurai, India
smeetamaryr@gmail.com

ABSTRACT

Data mining is process of mining or extracting knowledge from large volume of data. Frequent patterns are item sets, substructures, or subsequences that appear repeatedly in a data set. Frequent Item set mining mainly used in financial, retail and telecommunication industry. The main aim of these industries is faster dealing out of a very large amount of data and finding out the items which occur frequently. So for this purpose various types of algorithms are used. Frequent Item set mining can be performed Apriori, MAFIA, FP-growth, Eclat and MFIPA algorithms. For finding frequent patterns the algorithms are widely analyzed and the purpose of finding out how these algorithms are used to find frequent patterns over very large database. A comparative study on various algorithms such as Apriori, Frequent Pattern (FP) Growth, Rapid Association Rule Mining (RARM), ECLAT and Maximal Frequent Itemset using Prime Algorithm (MFIPA). It mainly focuses on the advantages, disadvantages and various limitations for identifying the patterns among the large item in database systems

Keywords: Data mining, Frequent patterns, Maximal Frequent Itemset

Paper ID: ITCS0011F

BLOOD CELL CLASSIFICATION ON MEDICAL HYPERSPECTRAL IMAGERY FOR MULTI-GRAPH CONVOLUTION NEURAL NETWORK

Thangaselvi. P, T. Arumuga Maria Devi

Centre for Information Technology and Engineering, Manonmaniam Sundaranar University Abishekapatti, Tirunelveli - 627012, TamilNadu, INDIA.
Assistant Professor, Centre for Information Technology and Engineering Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli - 627012, Tamil Nadu, India.
Selvibsc1994@gmail.com

ABSTRACT

Cell Kind, in particular that of White Blood Cells (WBCS), Performs a totally critical characteristic inside the problem of prognosis and manipulate of essential sicknesses. Compared to standards of optical microscopic imaging ie., Hyperspectral imagery, blended with each spatial and spectral facts, affords more wealthy information for recognizing cells. This Proposed Research work emphasizes a completely unique blood-mobile classification framework which mixes a modulated Gabor wavelet and deep Convolutional Neural Network(CNN) kernels named as Multi-Graph Convolution Neural Network (MGCNN) is proposed primarily based on clinical Hyperspectral imaging. For each convolution layer, multi-scale and orientation Gabor operators are taken dot product with preliminary CNN kernels. The importance of the work is to transform the convolution kernels into the frequency vicinity to research competencies. By combining characteristics of Gabor wavelets, the capabilities determined through modulated kernels at one in all a type of frequencies and orientations are extra consultant and discriminative. Experimental consequences display that the proposed version can achieve better class usual overall performance than traditional CNNs and broadly-used resource is as Support Vector Machine (SVM) techniques, particularly in education small-pattern-length situations. There are currently numerous classification methods for the CNN using Hyperspectral Imaging can easily build up an end-to-end model, and there is no need to design complicated hand-crafted features and its performance is competitive to some traditional methods, such as Support Vector Machine.

Keywords: Hyperspectral imaging, Convolutional Neural Network(CNN) , Support Vector Machine (SVM), Multi-Graph Convolution Neural Network (MGCNN

Paper ID: ITCS0015F

ADOPTION OF MOBILE BANKING FOR FINANCIAL INCLUSION IN BANGLADESH: AN EMPIRICAL STUDY USING EXTENDED TAM

1Mohammad Rokibul Kabir*, 2Md. Ibrahim, 3Mohammad Burhan Uddin Khondker

[1]Post-Doctoral Research Fellow, Universiti Malaysia Perlis, Malaysia and Associate Professor, East Delta University, Bangladesh
[2]Postgraduate Scholar, Universiti Malaysia Perlis, Malaysia and Assistant Professor, International Islamic University Chittagong
[3] Vice President, Bank Asia Limited and PhD Candidate, Universiti Malaysia Perlis, Malaysia
rokibul.k@eastdelta.edu.bd,

ABSTRACT
Technology innovation and rapid growth in the number of smartphone users across Bangladesh has been pushing people to get interested in smartphone financial transactions. Financial inclusion is a must to sustainable economic development. Though late, Bangladesh's banks have started their m-banking services to include large untapped rural people in banking services along with the urban people. However, it is important to understand the acceptability level of users in every part of the country before its full implementation. The purpose of this study is, therefore, to explain the determinants of mobile banking with extended technology adoption model (TAM) as the basis. Although a good number of studies have already been conducted worldwide using TAM, the study is justified in the sense that it would reduce the research gap considering two country-specific variables such as the cost of mobile banking and the easy availability of mobile devices and banking in Bangladesh. A survey to identify the determinants of m-banking adoption has been conducted to explain the determinants. A total of 450 questionnaires were administered using three separate forms called in-person survey, postal mail, and google form. Of the 450 questionnaires, 372 fully completed and functional questionnaires were received with a success rate of 82.67%. Perceived usefulness, perceived ease of use, trust and security, cost of service, and easy availability are found to be significant in explaining the m-banking adoption by the users while risk and security issue is found to be statistically insignificant. Country specific variable called service charge has a negative impact on m-banking adoption while the easy availability has found to most influencing positive factor in Bangladesh context. Hence, the study recommends the policymakers of Bangladesh to ensure easy availability of mobile devices and service providers ensuring a lower and justifiable service charge.

Keywords: Mobile Banking, Determinants, Extended TAM, Rural People Bangladesh.

Paper ID: HS009

INTERPRETATION, INTERVENTION TO THE RIGHT TO LIFE AND DEATH WITH DIGNITY DURING COVID 19

Biranchi Narayan P Panda

Assistant Professor, Xavier law School, Xavier University Bhubaneswar
bnppanda2019@gmail.com

ABSTRACT

The current Covid- 19 outbreak created a huge havoc and builds a national security concerns across the country by challenging to the geopolitical, social, economic structure and especially jeopardies the common human lives. To restore the situation, awareness & restrictions are in numbers while implementations and executions are rare or insufficient in nature, despite several initiatives by International organizations, Indian government, and non-governmental organizations continuously. However, the unprepared lockdown in the initial phase had destabilized the core eco-system of our nation. As a result, Industries were shutdown & perished; economy faced slowdown; education system became paralyzed and most importantly common people lost their jobs, lives and shelters within few days. It seems the common human being affected the most and seems their lives and rights are less important than anything and everything. During this period of pandemic in India, constitutional rights were faded and abrogated from the reach of common man. Covid-19, the unprecedented virus had attacked the roots of human lives by keeping away their basic fundamental rights; rights to life and dignity. The paper will analyze the core values of our constitutional rights by investigating its approaches and applicability during this pandemic to restore human rights and dignity.

Keywords: Right to Life, Death with Dignity, Constitution, Covid 19