4th Virtual
International Undergraduate
Research Conference Proceedings

October, 3-4th 2023
Hosted by
International College of Engineering and Management (ICEM) affiliated with University of Central Lancashire (UCLan) and in cooperation with Institute of Mechanical and Manufacturing Engineering (IMME)

Muscat, Sultanate of Oman.

Preface

Welcome to the proceedings of the 4th Virtual International Undergraduate Research Conference,an event that exceeded geographical boundaries and academic disciplines. This preface serves asa reflection on the conference's purpose, significance, and the tireless efforts of all those involvedin making it a resounding success.

The primary aim of this conference was to create an environment that embodied inclusivity, impact, and collaboration, all dedicated to the essence of undergraduate research. We believe thatfostering these ideals is paramount in promoting academic growth and pushing the boundaries ofknowledge.

The 4th Virtual International Undergraduate Research Conference was proudly organized by the International College of Engineering and Management (ICEM), Muscat City, Sultanate of Omanin collaboration with the Institute of Mechanical and Manufacturing Engineering (IMME) of KFUEIT, Pakistan. This event, held on October 3-4, 2023, was themed "Breaking Boundaries: Collaborative Undergraduate Research across Disciplines and Borders." This theme encapsulated the spirit of innovation, unity, and cooperation that we sought to inspire.

Graduating students from around the world were invited to present their final projects, dissertations, case studies, surveys, and experiments, with a particular focus on the fields of Engineering and Management. The diversity and quality of the contributions showcased during the conference exemplified the dedication and passion of the participants and organizers alike.

We extend our deepest gratitude to our keynote speakers, presenters, attendees, moderators, volunteers, and management who played vital roles in making this event possible. Your enthusiasmand commitment to the pursuit of knowledge were truly commendable, and it is your collective efforts that have made this conference an unqualified success.

As we embark on this journey through the conference proceedings, we hope that the knowledge and inspiration shared during these two days of intellectual exchange continue to echo, go beyondboundaries, and further the cause of undergraduate research across the globe.

Thank you for being part of this remarkable journey.

Conference chair   Dr. Salem S. Abu Amr

(Salem.s@icem.edu.om)Co-Chair   Dr. Don Anton Balida

(don@icem.edu.om)

Co-Chair   Dr. P.S. Raju   (Raju@icem.edu.om)
The Organizing Committee/2023

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Impact of COVID-19 on Work Performance in Oman

Mahmood Al Kiyumi; Riyad Mahfud

Department of health, Safety and Environment Management, International College of Engineering and Management (ICEM), Muscat, Oman

Email; mahmood.alkiyumi@gmail.com; riyad@icem.edu.om

Abstract

The rapid emergence of the COVID-19 pandemic has had a significant influence on a great deal of different industries and enterprises all around the globe. As a direct consequence of this, the economic security of a great number of countries is disrupted to a significant degree. One of the primary industries in Oman that has a significant impact on the country's economic growth is the oil and gas industry. As a result, the COVID-19 pandemic had a detrimental effect on the general growth and development of the population. Since the epidemic has had an effect on all of the country's economic subsystems, doing a study on the issue is undoubtedly the best course of action at this point. This study focuses on determining the many obstacles that have arisen as a result of the COVID-19 epidemic in connection to the expansion of the country's economy.

Keywords: COVID-19, Pandemic, oil and gas industries, challenges, Country economic Development

A phytoremediation study on sustainable wastewater treatment byremoval of cadmium through azolla pinnata in muscat regional areas.

Safa Nasser Al-Mandhari; P.S. Raju

Department of health, Safety and Environmental Management, International College of Engineering and Management (ICEM), Muscat, Oman

Email: H18000067@icemoman.net; Raju@icem.edu.om

Abstract

The increasing water demand has led to a scarcity of fresh water in several countries in the MiddleEast. This led to a focus on treated wastewater and its reuse. This research focused on the Azolla plant and its ability to remove heavy metals from wastewater (element cadmium). Azolla Pinnatais a floating aquatic fern plant found in small surface ponds. The used for treating sewage water contributes to the irrigation of crops to relieve pressure on the available natural water resources. Wastewater contains many pollutants and risks that can harm the soil and the plants that feed on it because it contains large amounts of phosphorus and sulfur. So that in most cases, water treatmentmethods are not sufficient for its safety. Therefore, the world turned to wastewater treatment and used it in a number of areas such as agriculture, factory uses and many others. With all the changesthat have occurred, people are still seeking solutions and ways to treat wastewater in an environmentally friendly manner. This study was conducted in the Sultanate of Oman, Muscat, atSultan Qaboos University. Water samples were analyzed in different locations at different time intervals. Findings from the study showed that cadmium constituents in wastewater were drastically reduced when Aziolla was added. Due to its efficacy, water conservation experts mustembark on a full-scale production of Azolla and deploy it in wastewater treatment.

Keywords: Phytoremediation, Azolla, Wastewater, Cadmium Removal

The performance of combined coagulation and oxidation processesfor the treatment of stabilized landfill leachate

Muneer M.A. Ayash[a], Abbas F.M. Alkarkhi[b], Salem S. Abu Amr[c*], Muzafar Zulkifli[a,d]

[a]University Kuala Lumpur, Branch Campus Malaysian Institute of Chemical and BioengineeringTechnology, Taboh Naning, 78000 Alor Gajah, Melaka, Malaysia, emails: ayashmuneer@gmail.com (M.M.A. Ayash),

[b]Universiti Kuala Lumpur Business School (UniKL Bis), 50250, Kuala Lumpur, Malaysia,email: abbas@unikl.edu.my

[c]Health Safety and Environmental Management, International College of Engineering and Management, 111 St, Seeb, Muscat, Oman, email: sabuamr@hotmail.com

[d]Green Chemistry and Sustainability Cluster, Branch Campus, Malaysian Institute of Chemical and Bioengineering, Technology University Kuala Lumpur, Taboh Naning, Alor Gajah, Melaka78000, Malaysia, email: muzafar@unikl.edu.my

Abstract

The performance of combined treatment systems of coagulation and oxidation for the treatment ofstabilized landfill leachate was investigated. Three different combined treatment systems were selected in which aluminum sulfate (alum), zinc sulfate and ferric sulfate were used as cationic coagulants while sodium persulfate (SP) as an oxidant. The sample size and the optimum operating conditions of each treatment system in regard to the dosage (ml/100ml), pH, agitation speed (rpm)and retention time were preliminarily determined. Four operating variations of each combined treatment system were conducted in triplicate. In other words, both coagulant and oxidant were added simultaneously using the optimum operating conditions of the coagulant as one mode and the oxidant as the other along with the third and fourth modes where each treatment was followed by the other under the respective operating conditions. The treatment performance of each systemwas evaluated in terms of the removal efficiency of four responses namely; total suspended solids(TSS), color, chemical oxygen demand (COD) and ammoniacal nitrogen/ammonia (NH_3-N). The optimum removal efficiency was achieved by the combined treatment system of alum and SP in two different modes. Upon the addition of both alum and SP concurrently using alum operating conditions as the first operating mode besides SP followed by alum as the second

mode, the average percentage removals of TSS, color, COD and ammonia were (98-99), (95-98), (55-61)

and (21-22), respectively. Currently, the treatment performance of some organic coagulants are experimentally studied in order to assess whether chemical coagulants could be replaced.

Improvement in the washing principle of smart dishwasher usingoptimized heat and rotating double arm jet spray

Hammad Khalid[1], Atif Ali[2], Kafayat Ullah[3], Yasir Yasin[4], Muhammad Shayan[5], Suleman Mureed[6]

[1]Institute of Mechanical and Manufacturing Engineering Khwaja Fareed
University ofEngineering & IT Rahim Yar Khan, Pakistan
hkhalid@kfueit.edu.pk

[2]Institute of Mechanical and Manufacturing Engineering Khwaja Fareed
University ofEngineering & IT Rahim Yar Khan, Pakistan
atifshabbir323@gmail.com

[3]Kafayat Ullah Institute of Mechanical and Manufacturing Engineering Khwaja Fareed
University of Engineering & IT Rahim Yar Khan, Pakistan kkafayat957@gmail.com

[4] Institute of Mechanical and Manufacturing Engineering Khwaja Fareed University of
Engineering & IT Rahim Yar Khan, Pakistan yysin@kfueit.edu.pk

[5] Institute of Mechanical and Manufacturing Engineering Khwaja Fareed University of
Engineering & IT Rahim Yar Khan, Pakistan mshayanahmar@gmail.com

[6]Institute of Mechanical and Manufacturing Engineering Khwaja Fareed
University ofEngineering & IT Rahim Yar Khan, Pakistan
salmank465676@gmail.com

Abstract

Manual cleaning of dishes poses several challenges that can make the task frustrating and time- consuming. Stubborn food particles and grease can be difficult to remove, requiring extensive scrubbing and soaking. This not only increases the physical effort required for cleaning but also prolongs the overall cleaning process. Additionally, washing dishes by hand frequently results in water waste because it takes a lot of water to rinse and clean dishes with a running tab. Keeping this problem in mind, there is a need for clever solutions to this onerous work. Dishwashing has alot of cutting-edge commercial solutions. This research aims to enhance the dishwasher's washingperformance by incorporating enhanced heat and a double-jet water injector. The dishwasher's design takes into account how the water jet will affect the dishes and how much hot water will beused, resulting in a hygienic and thorough cleaning operation. A significant change is observed inthe dishwashing principle by incorporating two spray arms and heated filaments. In this experimental research work

the dishwasher uses a heating element to raise the water's temperatureand a pump to create a strong stream of hot water that sprays the plates in an efficient manner. Thewater used in this process is heated with the help of a thermocouple and a dishwashing experimentperformed at different elevated temperatures. The optimized value of heat is between 70°C to 75°C, to wipe out bacteria and other hazardous microorganisms effectively. The amount of detergent also reduces significantly by using hot water for cleaning and rinsing purposes. So, the dishwasher works more efficiently by enhanced heat and double jet water spray arm.

Numerical Analysis of Cross Axis Wind Turbine with EnhancedPerformance

Faheem Abbas[1], Usama Ali[1], Mumtaz A. Qaisrani[1,*], Adnan Rasheed[1], Muhammad Umar Farooq[1]

[1]Institute of Mechanical and Manufacturing Engineering, Khwaja Fareed University of Engineering and Information Technology, Rahim Yar Khan, Pakistan

*E-mail address: mumtaz.ahmed@kfueit.edu.pk.

Abstract

Wind energy is considered an expanding form of renewable energy, contrasting with finite fossil fuels that generate detrimental emissions. However, contemporary wind turbines, specifically horizontal axis wind turbines (HAWTs) and vertical axis wind turbines (VAWTs), possess notablelimitations that diminish their overall efficiency. To optimize wind energy generation, we have devised a solution known as cross-axis wind turbine (CAWT) to address these challenges. The CAWT's distinctive design stems from the cross-axis arrangement of its horizontal and vertical blades. In this study, the aerodynamic performance of CAWTs with NACA 0015 and FX 63-137airfoil shapes were analyzed using Computational Fluid Dynamics (CFD). The goal of this study was to determine which airfoil has the highest lift coefficient, as it is crucial for maximizing energyoutput from a wind turbine. The results indicate that the FX 63-137 airfoil had the best lift coefficient, allowing CAWTs to achieve maximum energy output when employing this airfoil shape

Key words: Numerical Analysis, Wind energy, renewable energy, emissions, wind turbines, horizontal axis wind turbines (HAWTs) and vertical axis wind turbines (VAWTs)

Utilizing Covid-19 Disposable Face Masks in the Production of Eco-Composite from Bamboo Fiber

Shamir Amani Bin Samrulzaman [1], Nur Izzaati Saharudin [1, 2*]

[1]Bioresource Technology Division, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
[2]Green Biopolymer, Coatings and Packaging Cluster, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
* Correspondence: nurizzaati@usm.my

Abstract

The overproduction and mass consumption of disposable face masks during the COVID-19 pandemic, coupled with inefficient waste management, imposes a substantial pollution burden on the environment and humans. The recycling of polypropylene, a significant component of non- woven disposable face masks, holds immense potential as a polymer matrix in the fabrication of composite materials. This study focuses on the application of recycled polypropylene (rPP) from disposable face masks for the production of eco-composite boards reinforced by bamboo particles. Four eco-composite boards were produced with a loading ratio of rPP to bamboo particles 100%:0%, 90%:10%, 70%:30%, and 50%:50%. Prior to the study, disposable face masks were treated to disinfect, and the properties of the treated disposable face masks were determined. The disinfection treatment showed no significant effect on the chemical and thermal properties of rPP from treated disposable face masks. The dimensional stability and mechanical properties of the board sample decreased in line with the increase in bamboo particle loading. Although the FTIR analysis showed that there was integration between the bamboo particles and the rPP polymer, the SEM micrographs revealed a weak interfacial bond between the bamboo particles and the rPP matrix. Nevertheless, the presence of bamboo particles increases the thermal stability of composite boards.

Keywords: Non-Woven Polypropylene; Disposable Face Masks; Bamboo Fibres; Eco-Composite

Physical and Mechanical Properties of Recycled High-Density Polyethylene (rHDPE) Composite Reinforced with Bamboo Particles.

Afiqah Binti Mohamad Noor [1], Nur Izzaati Saharudin [1,2]*

[1]Bioresource Technology Division, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
[2]Green Biopolymer, Coatings and Packaging Cluster, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
* Correspondence: nurizzaati@usm.my

Abstract

The application of recycled and waste thermoplastics in the production of wood plastic composites(WPCs) is the most effective way to reduce environmental impact by promoting it as a polymer for WPCs. This study highlights the use of recycled high-density polyethylene (rHDPE) plastic bottles as an alternative to polymers in the manufacture of bamboo plastic composites (BPCs). BPCs are fabricated according to different weight percentages of rHDPE and bamboo particles, namely 90%:10%, 70%:30% and 50%:50%. The goal for this project is to determine the effectiveness of rHDPE as a matrix for bamboo composites through the evaluation of the physicaland mechanical properties of the produced BPC. Fourier transform infrared spectroscopy (FTIR) analysis was also performed to identify functional groups in composite boards and raw materials in addition to chemical composition. Mechanical tests showed that increasing the bamboo contentof the composite reduced the bending strength from 6.929 MPa to 2.312 MPa, but the modulus ofelasticity increased from 153.052 MPa to 259.821 MPa. For internal bonding, the presence of bamboo content increases the interfacial bonding of composites. The physical properties evaluated revealed that a high percentage of bamboo content reduced the dimensional stability of the composite board. The composite with the highest bamboo percentage content showed the highest water absorption and thickness swelling which were 13.64% and 20.67% respectively.

Preparation Of Sustainable Scavengers From Banana Peel Activated Carbon Functionalized With N-Doped Carbon Dots ToRemove Pb(Ii) Ions

Nur Aishah Rosland [1], Mohammed Danish [1,2*]

[1]Bioresource Technology Division, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.

[2]Green Biopolymer, Coatings and Packaging Cluster, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.

* Correspondence: danish@usm.my

Abstract

This study investigated the use of banana peel as a scavenger to remove lead from aqueous solution. Before grinding, the banana peel of 'Pisang Raja' was cleaned with distilled water and dried at 105 °C in the oven to remove any remaining moisture. Banana peel was activated by KOHand NCD by two different methods, such as furnace and microwave heating methods. Instrumentaltechniques such as FTIR, TGA, SEM-EDX, BET Surface Area, and Raman spectroscopy were used to characterize BPAC. The effects of different dosages, contact times, temperatures, and initial concentrations on lead adsorption by BPAC were observed. The percentage adsorption willincrease as the dosage increases. The percentage of lead adsorption decreases as the initial concentration increases. The ideal time and temperature were found to be 180 min and 45 °C, respectively. The microwave-furnace BPAC showed a high percentage of lead ion removal from the aqueous solution throughout the adsorption experiment. Thermodynamic studies demonstratedthe endothermic nature of the adsorption. The Freundlich isotherm model and the pseudo-second-order kinetics model presented the best descriptions of the adsorption process. The study shows that activated carbon from banana peel can be effectively used as a potential adsorbent for the adsorption of lead.

Keywords: Adsorption; lead ion removal; banana peel; Mechanical Properties; Physical Properties

Occupational a health Risks in the cement Factory

Iman Masoud Ali Al Rahbi, Ali Imran

International College of Engineering and management, Health, safety and Environment Management Department. Email; imanalrahbi0@gmail.com; Ali.imran@icem.edu.om

Abstract

The study was about occupational health risks and illnesses in the cement factory with an exploration on the processes involved in the Oman cement factory, determination of occupationalhealth risks of the workers, and identification of occupational illnesses. A survey of 50 respondentswas conducted and the results indicated that a majority did not have illness complications while working in the cement factory. not even previous pulmonary or lung problems were a challenge among the participants. Interviews were also done whereby a majority of the respondents were confirming that safety measures were applied within their workplaces, which led to the good healthof the employees in the cement factory.

Keywords: Occupational Hazards, Risks, Pulmonary Respiratory Infections

Preparation of sustainable adsorbent from banana peel activated carbon functionalizing with carboxylic groups using iminodiaceticacid (IDA) and carbon dots to remove zinc metal

Hoo Ya Wen, [1], Mohammed Danish [1,2*]

[1]Bioresource Technology Division, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
[2]Green Biopolymer, Coatings and Packaging Cluster, School of Industrial Technology, Universiti Sains Malaysia, Penang 11800, Malaysia.
* Correspondence: danish@usm.my

Abstract

In this project, banana peels activated carbon were modified with iminodiacetic acid and functionalized with carbon dots before (preactivated carbon) and after (post-activation carbon) calcination through hydrothermal process to remove heavy metal. The pre-activated and post- activated carbon were characterized by using Fourier Transform Infrared Spectroscopy (FTIR), Thermogravimetric Analysis (TGA), Scanning electron microscopy (SEM) and Energy dispersiveX-ray (EDX) analysis and Brunauer-Emmett-Teller (BET) surface area analysis. FTIR results show that post-activated carbon is more functionalizing with N-H (amide) whereas TGA shows aweight loss of about 18.92% for pre-activated carbon and 32.90% for post-activated carbon. Images from SEM show zinc attached to the surface of activated carbon whereas EDX show the elemental composition in activated carbon. The effect of the dosage of activated carbon, time interval, temperature and initial concentration of stock solution on the efficiency of the post- activated carbon absorbent were studied in this project by tracing zinc elements left after adsorption through atomic absorption spectroscopy (AAS). The isotherm, kinetic and thermodynamic parameters for adsorption reaction of heavy metal by the activated carbon were determined through a series of models. The experimental results are best fitted with a pseudo- second-order (PSO) kinetic model. The reaction is endothermic and spontaneous can be seen fromthe positive value of $\Delta H°$ according to the thermodynamic study. Furthermore, the negative value of $\Delta G°$ demonstrates the viability and voluntary nature of the adsorption process. Freundlich adsorption isotherm can best represent the adsorption equilibrium with coefficient R^2 closest to

1.0 indicating that multilayer adsorption occurs on the heterogeneous sites.

Numerical Simulation on Cutting Transport Behaviour of GO/ hBNReinforced WBM using Moore's Correlation

Zainab Al Jarehi, Asif Zamir

Department of Well Engineering, International College of Engineering and Management (ICEM), Muscat, Oman. Email: asif@icem.edu.om

Abstract

This paper is written to purposely discuss evaluating the cutting transport behavior of Smart NanoWater-Based Drilling Fluid for Better Hole Cleaning. Hole cleaning is a crucial subject when executing a drilling job. Drilling fluid plays an important role in ensuring the efficiency of the holecleaning process, hence numerous research and inventions of drilling fluid were formulated to improve the performance of the drilling fluid. The efficiency of the drilling fluids is highly dependent on the condition of the well and the type of flow regime. This paper discusses the cuttingtransport behavior in vertical wells with laminar flow in the annulus. The capability of the drillingfluid to lift the cuttings; the slip velocity of the cuttings and the minimum velocity to lift the cuttings were calculated using an excel template created based on the most recommended Moore'scorrelation. From the result of numerical calculation, it is concluded that the presence of nano hBNand GO has increased the cutting transport ability of the drilling fluid from 86.4% to 94.6%. It is also concluded that the GO has an almost consistent positive effect on the cutting transport ability of hybrid nano drilling fluid. However, the hBN with a lower concentration from 0.1gm to 0.3gmhas a negative effect on the cutting transportation because of the fact that the hBN reduces the friction between the solid particles in the drilling fluid which reduces the cutting holding capabilityinside the fluid layers. This ultimately increases the cutting slip velocity. But, as hBN concentration increases from 0.3gm to 0.6gm, the cutting transport ability of the fluid increases. This is because hBN also reduces the friction between the solid particle in the drilling fluid and the pipe body which increases the upward annular velocity of the fluid. This has ultimately increased the cutting slip velocity.

Keywords_: cutting transport, graphene, h-Boron Nitride, Nano drilling fluid, Moore's Correlation._

Evaluating Effectiveness of the Epoxy Resin and Modified DrillingFluid for Corrosion Inhibition on the Drill Pipe

Asif Zamir, Abdul Rahman Mouhammed Youssef

Department of Well Engineering, International College of Engineering and Management (ICEM), Muscat, Oman. Email: asif@icem.edu.om

Abstract

The oil and gas sector suffers from many problems that appear during drilling and production operations, the most important of which is the problem of corrosion, which has become a big problem in the oil and gas world today, as it affects the drill pipe commonly due to the environmentto which it is exposed and chemicals in the ground and their interaction and the interaction of drilling fluids in addition to pressure, temperature and acidity that increase the chance of this problem. Hydrogen sulfide (H2S), carbon dioxide (CO2) and water are the main causes of corrosion inside the pipes in the oil and gas sector. Microbiological activity can aggravate internalcorrosion. However, since the economic loss from corrosion in the energy sector is quite huge, thefight against corrosion in this sector is extremely important. Among the many available techniquesfor doing this, the use of corrosion inhibitors is one of the most effective and cost-effective. Manyresearch and studies have appeared, and many experiments have also been applied to find a suitablesolution to reduce the occurrence of this problem, but most of them ended in failure or according to what is known as imaginary success, which deludes engineers of the success of the experiment,but when applied after a very short period, the result becomes completely opposite. Therefore, in this report we discuss the positive results of the experiment centered on the protection of the drillpipe by adding inhibitors and coating the drill pipe with epoxy resin.

Keywords: Epoxy Resin, Corrosion, Corrosion Inhibition, Drilling Fluid, Drill Pipe

Lab Scale Studies: Effect of Cementing Material Concentration Effect on the Porosity of Synthetic Sandstone Cores

Asif Zamir, Al-Hassan Ali Nasser Al-Maqahami

Department of Well Engineering, International College of Engineering and Management (ICEM), Muscat, Oman. Email: asif@icem.edu.om

Abstract

In the oil and gas industry, petrophysical properties such as porosity and permeability are an essential set of parameters in the determination of the hydrocarbon in place. They are thefundamental resources to acquire in order to obtain a solution in the evaluation and analysis of hydrocarbon reserves and enhancing production operations during reservoir life. It is crucial to deeply research the petrophysical parameter of the producing formation to assess the hydrocarbonpotential and the ability to flow through the reservoir. The ability of the rocks to transmit fluid andthe tendency of liquid accumulation inside the sandstone formation relies mainly on the rock mechanical properties such as grain size and sorting, compaction pressure and cementing material concentration. Lithification process is accomplished after the cementation process where it is alsothe last stage in the formation of a sedimentary rock. Cementation process of forming sedimentaryrocks caused destruction to Porosity of the rock. The objective of this project is to determine the relationship between the Porosity of the rock formation and the cementing material concentrationacting on the formation and the ratio by which the cement concentration causes the Porosity to decrease. Mathematical models will be proposed to provide a simplified understand to therelationship with several constant mechanical properties.

Keywords: Synthetic Cores, Permeability, Porosity, Cementing Material

Analysis of the relationship between early kick detections and MPD(Managed Pressure Drilling)

Asif Zamir, Mahmood Zahir Al-Hinaai

Department of Well Engineering, International College of Engineering and Management (ICEM), Muscat, Oman. Email: asif@icem.edu.om

Abstract

Early kick detection is a very critical concern in drilling operations to control the kick and avoid any major incidents that can happen due to the kick in drilling operations as well as it is very important to protect the people and equipment by detecting the kick early. Managed pressure drilling within the early kick detection can detect the kick early by using the flow measurement in the closed system, the kick can be detected and controlled effectively. In the flow measurement model the mass flow meter is used which can promptly detect the kick and then reduce the kick at the detection time. The relationship between the early kick detection and managed pressure drilling is simulated numerically flow measurement. As well, the functionality of the managed pressure drilling is to manage the kick at early stages as it controls the kick size and keeps it at minimum to avoid any threat that could happen to the well. Managed pressure drilling controls the annular pressure profile to keep constant bottom hole pressure as well as can circulate the kick without the need of shutting the well. Managed pressure drilling has some tools which are designed to control the well better than the conventional system. These tools with its techniques improved the way of detecting the kick and the response to the kick to be controlled and kept at minimum. This research focuses on modeling of early kick detection with the mitigation plan in MPD operation, referring to different studies in relation to understanding the gas kick and modeling the control. Overview of managed pressure drilling and recent advancements, the principle of MPD, different early kick detection in MPD as well as reasons for kicks.

Keywords: Early Kick Detection, MPD, Well Control, Drilling Operations

Study on Construction Waste Recyclable Material and its Impact onthe Environment.

Nasser khalifa Ali Al -Hajri

Department of health, Safety and Environmental Management, International College of Engineering and Management (ICEM), Muscat, Oman. Email : 18201089@icemoman.net

Abstract

This study aims to investigate how recyclable building debris affects the environment. A detailedliterature research and a questionnaire survey of specialists in the building industry were used to identify the waste effect variables. Then, a five-point Likert scale research was conducted, and the responses of the 66 respondents were examined using descriptive statistics. Recycling is the mostwidely used method of waste treatment, according to the study, 64 of 66 respondents said their company uses waste management strategies, and the majority of respondents strongly agreed thatthey complied with government regulations regarding green building and environmental protection. They also agreed that by removing waste from landfills, there would be less demand togenerate fresh waste. It was suggested that stakeholders minimize construction waste and produce environmentally friendly construction projects by hiring waste management agents, making use of ready-made materials like prefab houses, forming solid garbage management procedures, reusingand recycling debris, raising green building standards, and instituting liabilities for poor waste management practices, also the findings revealed that in order to preserve natural resources and protect the environment, 56% of respondents agreed that recycling and reusing construction and demolition wastes is essential. 52% of respondents also agreed that doing so may make the environment more accommodating by reducing CO^2 emissions and converting trash into useable resources.

Keywords: Construction, Demolition, green buildings, garbage, solid Garbage management , recycling

The Level of Omani Female Employment in the Oil and Gas Sectorin the Sultanate of Oman

Raseel Mohammed Jaber Al Zahli

Department of Health, Safety and Environmental Management, International College of Engineering and Management (ICEM), Muscat, Oman. Email:
raseel_athuhli@outlook.com

Supervised by: Dr. Don Anton Robles Balida, Assistant Professor for PPD, ICEM

Abstract

The representation of women in the oil and gas industry is a concern at the global level, and in Oman, this issue is further complicated by cultural and traditional beliefs that influence female employment in these sectors. Despite the critical role of oil and gas as the world's primary energysource, these sectors remain predominantly male, with historical research underscoring their masculine-dominated workforces. This study seeks to identify the factors that either encourage ordiscourage the employment of Omani women within the petroleum industry. By examining the motivational and deterrent forces at play, the research aims to shed light on the current state of female participation in this crucial economic field. Additionally, the investigation will explore therange of job opportunities available to Omani women in the oil and gas sectors, aiming to assess their presence and roles in this traditionally male-dominated environment. Data for the analysis will be gathered through surveys distributed across Oman's oil and gas industries, with the findingspresented in a series of figures and graphs. These visual representations will not only illustrate thelevel of Omani women's employment in the sector but will also highlight the outcomes and trendsarising from the existing conditions. Ultimately, the research aims to provide a comprehensive overview of the employment landscape for Omani women in the oil and gas sectors, offering valuable insights into how cultural norms and industry practices might evolve to support greater gender diversity in this vital area of the Omani and global economy.

Keywords: Omani Cultural traditions, Oil and gas, Female Employment

Traffic Signs and Pavement Markings: Knowledge and Awarenessof Motorcycle Driver's in the Municipality of Calinog

Allaga, Alvin L., Alumbro, Reynold E., Baldemor, Jhoce C., Barranco,Joselyn A., Licera,

Evelyn S., Palma, Marelyn P., and Semilla, Christopher L., West Visayas State University-Lambunao Campus, Lambunao, Iloilo. Email: shielacasabuena4@gmail.com

Abstract

This descriptive-quantitative study aimed to describe and evaluate the motorcycle drivers' awareness and knowledge of different traffic signs and pavement markings on the road. The respondents were the fifty (50) motorcycle drivers aged 18-50 years old in the vicinity of CalinogPublic Market. The respondents were chosen through convenient sampling. The instrument used was a researchers-made questionnaire regarding traffic signs and pavement markings and was composed of forty (40) items of survey questions written in the local dialect of Hiligaynon and duly validated by University experts. The statistical tools used were mean, standard deviation, andKruskal Wallis test. The findings revealed that the level of awareness and knowledge of motorcycle drivers on different traffic signs and pavement markings in the Municipality of Calinogas an entire group and when classified as to age, social classification, and driver's license was Highly Aware and there is no significant difference in the level of awareness and knowledge of motorcycle drivers. The findings of the study recommend that the information can be used for creating programs that can integrate the learnings of motorcycle drivers such as seminars that focuson the attitude and behavioral development of motorcycle drivers towards rules and regulation oftraffic signs and pavement markings and provide a systematic review of the development of the land transportation system.

Key words: Driver's License, Motorcycle Drivers, land transportation, Awareness

Friction Stir Spot Welding of Ferrous to Non Ferrous Metal

Usman Ul Hassan Pirzada, Moazzam Ahmad Chishti

Institute of Metallurgy and Materials Engineering, University of the Punjab, Lahore
Email: usman19mmes1323@gmail.com

Abstract

Friction stir spot welding (FSSW) is gaining traction as a solid-state joining technique for creating spot welds between dissimilar metals, such as ferrous and non-ferrous alloys. Its application is particularly appealing in industries where the integrity of weld joints is of utmost importance, such as automotive and aerospace manufacturing. FSSW stands out due to its ability to produce weldments with superior mechanical properties, a factor crucial in environments subjected to extreme stress and conditions. This study presents a comparison of FSSW with traditional resistance spot welding (RSW) and innovative ultrasonic plus resistance spot welding (URSW). While RSW has been the industry standard for many years, it often encounters challenges with dissimilar metals, potentially leading to weak bonds and inferior weld quality. On the other hand, URSW is an advanced method that combines ultrasonic energy with electrical resistance to enhance the welding process. However, despite its advancements, it still presents limitations when applied to certain material combinations. The findings suggest that FSSW has a competitive edge over these conventional methods. The technique's intrinsic process parameters can be finely tuned to adapt to the specific thermal and mechanical properties of dissimilar metals, ensuring robust welds with improved structural performance. Additionally, FSSW does not require filler materials or fluxes, making it a cleaner and more environmentally friendly option. By highlighting the strengths of FSSW against the backdrop of RSW and URSW, the study underscores the potential of FSSW as an efficient and reliable alternative for industrial applications where the joining of different metals is required. The promising capabilities of FSSW could lead to its broader adoption in manufacturing sectors looking to enhance the durability and performance of their products.

Keywords: friction stir spot welding, dissimilar metals, ultrasonic plus resistance spot welding (URSW).

Acceptability of Cupcake Made of Taro (ColocasiaEscultenta) Flour

Altis, Jester L., Benson, NessaJey S.,Berganio, Trexzy Jean S., Doncillo, Shiela D., Japitana,Arlie T.,Quiro, Regine A., & Laman, Mary Jocerie C**.**

West Visayas State University,School Of Management Lambunao, Iloilo. Email: lamanmjclavel@gmail.com

Abstract

During the second semester of the academic year 2021-2022, a descriptive study assessed the acceptability of cupcakes made from taro flour. The research aimed to evaluate variations in aroma,taste, and texture across different taro flour formulations. Fifteen respondents from West VisayasState University Lambunao Campus were selected purposively to participate in the study. Utilizinga five-point Likert scale as the data collection tool, the study employed mean and frequency countsfor descriptive statistical analysis. The results indicated that in terms of aroma, cupcakes from Products A, C, and D were rated with a very high level of acceptability, while Product B achieveda high level of acceptability. When it came to taste, Products C and D were deemed to have a veryhigh acceptability. Products A and B, while not scoring as highly, still ranked within the high acceptability range. The study's investigation into texture found that Products A, C, and D scoredhigh in acceptability. However, Product D diverged, falling into the moderately acceptablecategory. It is noteworthy that the analysis revealed no significant difference in the aroma of the various taro cupcake products. In contrast, the differences in taste and texture among the products were statistically significant. These findings illuminate the potential for taro flour as a viable ingredient in cupcake production, with most formulations being well-received in all evaluated categories. The significant variances in taste and texture suggest that specific formulations could be further optimized for consumer preferences. This study paves the way for innovative baking with taro flour, promising for dietary diversification and the enhancement of culinary options.

Keywords: Taro Flour, Cupcake Acceptability, Aroma Evaluation, Taste Assessment, TextureAnalysis, Consumer Preferences, West Visayas State University

Behavioral Study Pattern among Hospitality Management Students

Cordada, Jonna A., Lindayao, John Dave L.,Luceño, RJ L.,Mandar, Jenny Rose D., &
Laman,Mary Jocerie C.

School of Management, West Visayas State University-Lambunao Campus , Lambunao,
IloiloEmail:lamanmjclavel@gmail.com

Abstract

The investigation aimed to identify prevalent study behaviors among Hospitality Management students in the context of the new normal. Conducted at West Visayas State University - LambunaoCampus in November 2022, thirty Bachelor of Science in Hospitality Management (BSHM) students were purposively selected to participate. The research employed a validated and reliableresearcher-made questionnaire to collect data, analyzing it using mean and rank as statistical tools.Results indicated that the most common study behavior pattern was Writing, signifying its centralrole in students' learning strategies. The study patterns observed spanned various activities, including the use of study aids and note-taking, reading and identifying core concepts, organizingand synthesizing information, and approaches to testing and handling test-related stress. Upon examining the collective behaviors, it was found that writing stood out, alongside motivational andattitudinal factors, and the ability to extract main ideas from texts. These were complemented by efficient organization and information processing techniques, as well as effective note-taking and study aid utilization. This analysis sheds light on the adaptive study strategies of Hospitality Management students facing the educational adjustments imposed by the new normal. Understanding these behaviors can inform the design of academic support programs and teachingmethodologies that cater to the evolving needs of students in the hospitality field.

Keywords: Hospitality Management, hospitality management study aids and note taking,reading and, organizing and processing information, test strategy and test anxiety

Occupational Causes and Effects of Inspection Vehicle Workshopsin Ghala Industrial Area

Alla Suleiman Al-Nabhani

Department of Health Safety and Environmental Management, International College of Engineering and Management, P.O. Box 2511, C.P.O Seeb, P.C. 111, Sultanate of Oman,Alaaalnabhani@outlook.sa

Abstract

This study focuses on assessing occupational hazards within vehicle inspection workshops in Ghala Industrial Area and developing strategies to ensure worker health and safety. It examines the various risks inherent to the environment of vehicle inspection workshops and explores methods to achieve an accident-free workplace while enhancing the health and safety culture. Data were gathered through interviews and questionnaires distributed to workers, aiming to pinpoint thespecific dangers they encounter on the job. The findings indicate that employees are exposed to several risks, notably those associated with handling heavy and sharp machinery, among other occupational hazards. The research reveals that systematic training and regular monitoring of workers play a crucial role in mitigating these risks. Such preventive measures are instrumental incultivating a safe work environment, significantly diminishing the potential for accidents and enhancing overall safety in vehicle inspection workshops. By highlighting the occupational risks and underlining the importance of safety training and monitoring, the study serves as a basis for advancing workplace safety protocols, thereby contributing to the well-being of workers in the automotive service industry.

Keywords: occupational risks, vehicle inspection, workshops occupational hazards and theircauses

Traffic Signs and Pavement Markings: Knowledge and Awarenessof Motorcycle Drivers

Allaga, Alvin L., Alumbro, Reynold E., Baldemor, Jhoce C., Barranco,Joselyn A., Licera,Evelyn S., Palma, Marelyn P., and Semilla, Christopher L.,

West Visayas State University- Lambunao Campus, Lambunao, Iloilo, June 2022.
EMAIL: shielacasabuena4@gmail.com

Abstract

This descriptive-quantitative study aimed to describe and evaluate the motorcycle drivers' awareness and knowledge of different traffic signs and pavement markings on the road. The respondents were the fifty (50) motorcycle drivers aged 18-50 years old in the vicinity of CalinogPublic Market. The respondents were chosen through convenient sampling. The instrument used was a researchers-made questionnaire regarding traffic signs and pavement markings and was composed of forty (40) items of survey questions written in the local dialect of Hiligaynon and duly validated by University experts. The statistical tools used were mean, standard deviation, andKruskal Wallis test. The findings revealed that the level of awareness and knowledge of motorcycle drivers on different traffic signs and pavement markings in the Municipality of Calinogas an entire group and when classified as to age, social classification, and driver's license was Highly Aware and there is no significant difference in the level of awareness and knowledge of motorcycle drivers. The findings of the study recommend that the information can be used for creating programs that can integrate the learnings of motorcycle drivers such as seminars that focuson the attitude and behavioral development of motorcycle drivers towards rules and regulation oftraffic signs and pavement markings and provide a systematic review of the development of the land transportation system.

Keywords: motorcycle drivers, awareness, knowledge of different traffic signs and pavement markings

Effects of Chemical Exposure on the Health and Safety of Pharmaceutical Workers in Sohar, Oman

Maryam Mohammed Rashid Khalifa Al-naaimi

Health, Safety and Environmental Management, International College of Engineering and Management, 111 Stm Seeb, Muscat, Oman.Email: mmral-naaimi@uclan.ac.uk

Abstract

The global importance of the pharmaceutical industry cannot be overemphasized due to the growing spate of diseases in humans and animals. Despite this, the pharmaceutical industry has always focused on consumers' health without paying much attention to the effects of hazardous substances and chemicals on drug manufacturing workers. Therefore, this research work was conducted to investigate the impact of pharmaceutical substances and chemicals on the health of workers in the industry. The information was collected using an electronic questionnaire addressed to Drug Manufacturing Company (DMC) workers in Sohar, Oman. The data analysis was subsequently performed using Microsoft Excel. The results showed that workers in the company's quality and production department are exposed to chemicals and substances that could cause asthma and cancer. The most common symptoms deduced from the workers were breathing difficulties, eye and skin irritations. In conclusion, the study observed that more robust occupational health measures, safety guidelines, and protective equipment are required to protect workers from the impacts of toxic chemicals and substances.

Keywords: Health Effects, Chemicals, Pharmaceutical Workers, Sohar.

Evaluate the Impact of Oil Spills on Seabirds in the Strait of Hormuz.

Fawziya Marzouq Mohammed AL Dhuhuri.

International College of Engineering and Management, Health, Safety and Environmental Management Department. H18000121@icemoman.net

Abstract

The oil spills in the Strait of Hormuz had an impact on the marine environment and the limitation of seabirds. This study was conducted to evaluate the external and internal damages resulting from the oil pollution of seabirds. Data was collected using a questionnaire distributed to a group of fishermen and an interview conducted with the director of the Pollution Control Center. The data was collected and analyzed by the Excel program. It was found that a small percentage of seabirds were affected, as some were found dead, while others were damaged externally in feathers. It was found that seagulls and Socotra feces are the most affected by the oil slicks.

Keywords: Seabirds, Oil spill, Health Effect, Strata of Hormuz.

Optimization of Biodiesel Production from Waste Cooking Oil Using Immobilized Bacillus pumilus Lipase onto Amine-Functionalized SBA-15 Derived from Rice Straw: A SustainableApproach for High Yield and Reusability

Abdallah R. Ismail[1]*, Abdelrahman M. Rabie[1], Salem A. Abu Amr[2], Kwang-Hyun Baek[3], andNour Sh. El-Gendy[1,4]

[1]Egyptian Petroleum Research Institute (EPRI), Nasr City, Cairo, Egypt, PO 11727

[2]Health Safety and Environmental Management Department, International College of Engineeringand Management, 111 Seeb, Muscat, Oman, PO 2511

[3]Department of Biotechnology, Yeungnam University, Gyeongsan, Gyeongbuk 38541, Republicof Korea

[4]Center of Excellence, October University for Modern Sciences and Arts (MSA), 6th of OctoberCity, Giza, Egypt, PO 12566

*Correspondence to: Email: abdo82004@hotmail.com   Tel.: (+) 201273179509

Abstract

The immobilization of lipase has garnered significant interest in the biodiesel production field. The utilization of green-synthesized nano-materials as supports for lipase immobilization offers advantages such as increased enzyme loading, enhanced mass transfer rate, excellent dispersibilitycriteria, stability, long-life time and reusability of the biocatalyst. Consequently, this study focuseson optimizing the transesterification process for biodiesel production using immobilized lipase embedded into an amine-functionalized SBA-15 prepared from rice straw as a sustainable, readilyavailable, and cost-effective resource for silica. The loading ratio and leaching rate of the preparedbiocatalyst were assessed to achieve optimal catalytic activity and ensure stability. Response surface methodology based on a face centered composite design (FCCD) of experiments was applied to optimize and predict a model describing the transesterification reaction between the readily available and cost-effective domestic waste cooking oil (WCO) and methanol, using the green synthesized nano-biocatalyst. The interrelationships between the obtained results, includingbiodiesel yield (wt%) and conversion (%), and the tested operating conditions; methanol-to-oil molar ratio, biocatalyst concentration (wt.%), reaction temperature (°C), reaction time (h), and mixing rate (rpm), were elucidated by statistically validated quadratic model equations derived from multiple regression analysis. By applying the optimized values of the

tested operating conditions; M:O molar ratio 3.02, biocatalyst concentration 8.15%, 52.12°C, 3.29 h, and 464.65 rpm, a highly purified biodiesel yield of 97.62 wt% with a conversion rate of 96.3% was obtained.Notably, the immobilized enzyme reusability test in the optimized batch biodiesel production process demonstrated successful performance for five successive cycles, proving the stability andlong-life time of the biocatalyst.

Phenolic xenobiotic nanobiodegradation using Bacillus nealsonii decorated by macroalgal-synthesized magnetic nanoparticles

Hussein N. Nassar[1,2,3]*, Howaida M. Abd El Salam[4], Ahmed F. Al-Sadek[5,6], Salem A. AbuAmr[7], Nour Sh. El-Gendy[1,2]

[1]Processes Design and Development Department, Egyptian Petroleum Research Institute (EPRI),Nasr City, Cairo, Egypt, PO 11727.

[2]Center of Excellence, October University for Modern Sciences and Arts (MSA), 6th of October City, Giza, Egypt, PO 12566.

[3]Biochemistry Program, Basic Sciences Department, Faculty of Physical Therapy, October University for Modern Sciences and Arts (MSA), 6th of October City, Giza, Egypt, PO 12566.

[4]Analysis and Evaluation Department, Egyptian Petroleum Research Institute (EPRI), Nasr City, Cairo, Egypt, PO 11727.

[5]Research and Development of Expert Systems Department, Climate Change Information Center,Renewable Energy and Expert System (CCICRES), Agricultural Research Center (ARC), Giza, Egypt, PO 12111.

[6]Computer Science Department, Faculty of Computer Science, October University for Modern Sciences and Arts (MSA), 6th of October City, Giza, Egypt, PO 12566.

[7]Health Safety and Environmental Management Department, International College of Engineeringand Management, 111 Seeb, Muscat, Oman, PO 2511.

*Correspondence to:

Dr. Hussein N. Nassar, a Researcher of Environmental Biotechnology, Egyptian Petroleum Research Institute (EPRI), and October University for Modern Sciences and Arts (MSA)

E-mail: hessen_nasar@hotmail.com; humohamed@msa.edu.eg; Tel.: +20-1119-466-630.

Abstract

As a promising technique for environmental reclamation, nanobioremediation has recently attracted more attention. In this research, a novel bacterium, *Bacillus nealsonii* strain HN9 (NCBIGene Bank Accession No MZ081627), which can degrade elevated concentrations of *para-* nitrophenol (*p*NP) via the hydroquinone pathway, was isolated using a selective enrichment approach. In a one-pot batch process, sustainable *Turbinaria triquetra* hot aqueous extract (TAE)acted as reducing, stabilizing, and capping agent and successfully produced ecofriendly, crystalline, non-toxic, polydispersed, multi-shaped, highly stable

Fe3O4 NPs with average size, specific surface area, and magnetic saturation of 26.31 nm, 82.48 m^2/g, and 57.57 emu/g,respectively.

TAE-synthesized MNPs-coated HN9 was successfully used to decorate HN9. Response surface methodology (RSM) and artificial neural network (ANN) were used in a cutting-edge way to model and optimize the batch pNP nanobiodegradation process using the TAE-synthesized MNPs-coated HN9. At the projected ideal operating parameters of 12,900 mg/L salinity, 30ºC, pH7, 0.38 g/g MNPs to biomass ratio (M/B), 170 RPM, and 400 mg/L pNP concentrations, nearly full pNP removal was accomplished in 48 hours. In addition to the benefit of magnetic separation, the MNPs-coated cells demonstrated a five-fold increase in pNP biodegradation rate relative to the free cells, with improved storage and operational stability. Moreover, recorded a long time, whereas, the capacity to be utilized was five times without losingtheir activity relative to the free cells, which can be utilized once a time. Upon the ground-breakingapplication of TAE-synthesized MNPs-coated HN9 for the biotreatment of refinery wastewater, the deduction rates of BOD, COD, TPH, PAHs, and phenols documented 12.15 mg/L/h, 12.10 mg/L/h, 1.68 mg/L/h, 4.27 mg/L/h, and 8.84 mg/L/h, respectively. That was approximately three times greater than that documented in batch bioreactors inoculated by free HN9.

Keywords: Brown algae Nano factory; Magnetite nanoparticles; Statistical and computational modeling and optimization; Nano-bioremediation; *para*-Nitrophenol polluted water, Refinery wastewater.

Development of the Pyrolysis Reactor for the Conversion of PlasticWaste into Fuel and its Feasibility in Diesel Engine.

Umair Khalid[1], Danish Saleem[1], Hashir Abdullah[1], Rahman Farooq[1], Umer Farooq[1]

[1]Department of Mechanical Engineering, Khwaja Fareed University of Engineering and Information Technology Rahim Yar Khan. Email;mumairkhalid777@gmail.com

Abstract

The depletion of fossil fuels and stringent emission regulations have intensified the search for viable alternative fuels. Waste management policies have encouraged the conversion of waste materials, particularly plastics, into alternative fuels through pyrolysis. This study focuses on usingwaste plastic oil (PPO) combined with biodiesel as an alternative fuel for diesel engines, specifically compression ignition (CI) engines. The research encompasses fuel characteristics, engine performance, combustion attributes, and exhaust emissions. Experimental tests spanvarious engine speeds (1000 to 3500 rpm) at a constant 25% load, with different blend compositions (D100, D95PPO5, D90PPO10, and D85PPO15). Findings indicate that the D85PPO15 blend achieves superior brake thermal efficiency and lower brake-specific fuel consumption compared to pure diesel. Emissions of NOx and HC are lower at low RPM but increase with higher RPM, albeit still favorable compared to diesel. The D85PPO15 blend exhibitsthe highest energy and exergy efficiency across all engine speeds. Thermo-economic analysis highlights its strong thermos-economic performance, and sustainability ratings confirm its environmental sustainability, emphasizing its potential to reduce environmental impacts.

Keywords: Renewable energy; Plastic Waste; Plastic pyrolysis oil; Diesel engine; Managingsolid waste; Waste-derived energy; Emission characteristics

Enhancing Robotic Arm Control: EMG-Based Precision and Safety

Hammad ul Hassan[1], Dua Zainab[2] ,Muhammad Furqan Zafar[1], Maroof Afzal[1] , MuhammadArqum Razzaq[1,3]

[1]Department of Mechatronics Engineering, University of Chakwal, Punjab,

Pakistan[2]Department of Electronics Engineering, University of Chakwal,

Punjab, Pakistan [3]Department of Mechatronics Engineering, Air University

Islamabad, Pakistan Email: hammadulhassan752@gmail.com

Abstract

In response to the increasing demand for automated assistance in challenging and dangerous environments, such as data collection in volcanic areas or the disarming of explosives, we have developed a robotic arm that is controlled through a novel Electromyography (EMG)-based system. This cutting-edge technology harnesses the power of EMG sensors to interpret the electrical signals from muscle movements in a human operator's arm. These signals are translatedinto precise movements of the robotic arm, allowing it to execute tasks with high accuracy and responsiveness. The EMG sensors, affixed to the operator's arm, enable the detection of muscle activity, which is then processed in real time. This system allows the robotic arm to mirror humanmovements, providing an intuitive interface that feels natural to the operator. As a result, the robotic arm can perform complex tasks in hazardous situations safely, reaching remote areas and handling heavy or dangerous materials with a remarkable precision margin of error of just ± 0.5 centimeters. Through extensive testing and analysis of the arm's six degrees of freedom (6 DOF),we have not only fine-tuned its accuracy but also demonstrated its adaptability. The control mechanism we have developed shows promise beyond this single application, offering a method that could be applied to a variety of robotic systems. This project has successfully bridged the gapbetween human motion and robotic execution, presenting a significant advancement in the field ofrobotic automation with vast potential for various high-stakes applications.

Keywords: Robotics, Kinematics, Control, Applications

The Use of Zinc Oxide and Aluminum Oxide Nanoparticles for theFlow Assurance of Heavy Crude Oil

Shamsa Al Balushi and Girma T. Chala

International College of Engineering and Management (ICEM), Muscat, Oman

h18000120@icemoman.net

Abstract

Advanced technologies, especially in the oil and gas field, are used to solve problems associated with the transportation of crude oil, such as the use of chemicals and other methods. The method of using chemicals is one of the most widespread methods, as it is harmful to the environment andhas many effects on the environment. Therefore, the use of nanoparticles has been applied to solvethis problem and work to reduce its viscosity and improve rheological properties. This study aimsto evaluate the effect of nanoparticles on heavy crude oil flow properties. The experiment is divided into three categories. The first category aims to investigate the impact of temperature on the viscosity of crude oil without nanoparticles, and the second category aims to understand the effect of the concentration of zinc oxide nanoparticles at different temperatures on the viscosity ofcrude oil. As for the third category, it aimed to use another type of nanoparticles, which is aluminum oxide, size 10-30 nm, to find out the effect of its concentration at different temperatureson the viscosity of crude oil. A mixing device was used to mix the nanoparticles with the crude oil. A viscometer was used to accurately measure the viscosity at different temperatures. A greater decrease in viscosity was observed when aluminum oxide, size 30-45 nm, concentration 0.2, wasused at a temperature of 50 °C. Whereas nanoparticles are better than chemicals, as they have lessimpacts on the environment and are environmentally friendly

Keywords: zinc oxide nanoparticles, different temperatures, rheological properties

Detection of Diseases in Human by using Image Processing and Machine Learning

Moazam Zulfiqar, Mahrukh Nasim, Mamoona Tahir

Mirpur University of Science and Technology (MUST) Mirpur AJK,Pakistan, Department ofComputer Systems Engineering.

moazma625@gmail.com

Abstract

In the realm of healthcare, early and accurate disease detection plays a pivotal role in effective treatment and prevention. Several studies have reported detection of disease using image processing and machine learning but have been limited by the dearth of suitable datasets and the substantial variability inherent in images available online. To counter these limitations, this research presents a pioneering Computer Aided Diagnostic (CAD) platform, empowering users with rapid and accurate disease identification through a single-click interface. The primaryobjective of this project is to utilize advanced technologies to create an effective disease detectionmechanism that serves medical professionals, patients and researchers in an efficient manner. Unlike previous work concentrating on single diseases, this research introduces a holistic model detecting four different diseases. Employing Convolutional Neural Networks (CNN), an accuracyof 93% was achieved. For Acne, hair loss, nail fungus, skin allergy and normal skin, precision andrecall scores of 0.87, 0.91, 0.94, 0.97, 0.94 and 0.96, 0.95,0.97, 0.82 0.97 were respectively attained, indicating potential for improvement through further refinement. This research's importance lies in creating a dependable foundation for scalable disease detection. By addressing various diseases through one platform, it shows the viability of advanced image processing and machine learning for precise medical diagnostics. As healthcare advances, this work can significantly impact disease detection and treatment.

Keywords: Computer Aided Diagnostic (CAD) platform, Convolutional Neural Networks (CNN),disease detection

Enhancing Industrial Automation with the Pick and Place RoboticArm

Abdullah Ans[1] , Abrar Younus[1] , Muhammad Arqam Razzaq[1, 2]

[1]Department of Mechatronics Engineering, University of Chakwal, Punjab, Pakistan

[2]Department of Mechatronics Engineering, Air University Islamabad,

PakistanEmail: abdullahansmughal@gmail.com

Abstract

The Pick and Place Robotic Arm (PPRA) combines advanced automation techniques with roboticsto enhance operational efficiency in industries like manufacturing and logistics. Integrating computer vision and machine learning, the PPRA streamlines the task of transferring objects between locations, promoting productivity and precision while reducing reliance on manual labor.Central to the PPRA's design are its sensors, robotic arm, and grippers, all orchestrated by a sophisticated control system. The arm employs servo motors for movement and is equipped with ultrasonic sensors for object detection. Calibration ensures the system operates from a standardizedreference point. Following this, the PPRA continuously cycles through detection, picking, and placing processes. The sensors guide the Arduino-controlled servo motors to position the arm, and objects are handled with the precision of the grippers. The control system, based on Arduino, is the brain of the operation, assimilating sensor data and dictating action sequences to execute tasksautonomously. This setup has proved adept at automating complex pick-and-place tasks with remarkable accuracy and consistency. Despite its success, the current system lacks feedback on gripping force, limiting its ability to adapt to objects of varying weight and fragility. Future improvements could include force sensors in the grippers and more complex control algorithms, potentially enhancing the PPRA's versatility. This project demonstrates significant strides in robotic automation, showcasing a system capable of intuitive object manipulation, and paving the way for advancements in robotic dexterity and adaptive functionality.

Keywords: Automation, robotic arm manipulation, advanced algorithms, machine learning techniques, arduino, ultrasonic sensor.

The Novel Thyroid Disease Prediction Using Machine Learning

Gibran Said Tatari

Mirpur University of Science and Technology (MUST), Mirpur, AK, Pakistan.
Department ofComputer System Engineering. gibrantatari04@gmail.com

Abstract

Thyroid disease is one of the most common medical conditions and can result in various health problems. According to recent studies, 200 million people worldwide suffer from thyroid diseases. Thyroid hormones cause thyroid diseases such as hypothyroidism and hyperthyroidism. Important thyroid test parts are used to dig how thyroid hormones, including TSH, T3, and T4, act, and manual analysis of these parameters on enormous databases is time-consuming and difficult to diagnose and predict. In the proposed system, multiple machine learning algorithms are tested, such as KNN, SVC, Decision Tree Classifier and Random Forest; then, we compared the results of every algorithm and found that the Random Forest-based machine learning technique achievedthe best accuracy and F1-score across all classifiers; thus, we dumped the RM classifier in pickle format and integrated it with the backend API, which is made in a flask; we deployed our model on a website that will be used to help people determine whether they are suffering from thyroid ornot, and if they are suffering from it what is the type of thyroid, and we have also included the medication mean when the user will enter its readings, the model will also prescribe them medicines if they are suffering from thyroid. We used two medicines to determine if the user is suffering from hyperthyroidism, then the model would recommend the user to take antithyroid drugs, and if the user is suffering from hypothyroidism, then the model would recommend the userto take thyroxine.

Keywords: hypothyroidism, thyroxine. KNN, SVC, Decision Tree Classifier

Factors Influencing Career Choice Of Male Students Of EducationCourses

Devina Mhae M. Valdez, Johanna D. Lachica, Charlene Lanuza, Jemaima A. Bait, Joshua T. DelRosario, Maricris D. Serquillos

Urdaneta City University, Urdaneta City

Abstract

Based on the findings that personal interests and passions, along with positive role models and influences, significantly affect the career choices of male students in the field of elementary education, a multifaceted plan of action can be proposed. This plan would first involve creating aframework within the university to offer exposure to a broad range of subjects and pedagogical styles. Workshops, guest lectures, and interactive seminars could be integral to this, allowing students to engage with diverse educational content and age groups. These activities aim to ignitetheir personal passions and help them identify specific areas within education that resonate with them deeply. Additionally, the implementation of a structured mentorship program would connectmale students with seasoned male educators. These mentors would act as tangible role models, illustrating the impact and opportunities available within the profession. Regular interaction between students and their mentors, such as job shadowing, guided discussions, and collaborativeprojects, would provide a real-world context and showcase the day-to-day rewards and challengesof the teaching profession. In essence, this plan would not only help to guide male students in theircareer choices but also aim to cultivate a support system where personal interests are nurtured, andprofessional aspirations are shaped by positive examples within the field of elementary education.

Keywords: Career Choice, Influence, Career, Male, Student

Horizontal and Vertical Wave Compression to Enhance the Potential of Clean Energy Production from Wave Energy

Al Hussain Al Hadrami and Girma T. Chala

Department of Well Engineering, International College of Engineering and Management (ICEM), Muscat, Oman. Email: Girma@icem.edu.om

Abstract

This paper presents the potential of wave energy in the Sultanate of Oman to simulate the designsof wave converters and measure their effectiveness for electricity production using the SolidWorksprogram. It was under conditions similar to the environmental conditions in the Sultanate of Oman and considered whether this design was suitable for use in these conditions. In addition, this research aims to compare the designs in terms of endurance and the extent of its energy production.It included the types of turbines that can be used in wave power converters and the types of wavesto which the designs would be exposed. This design has the ability to produce energy from the horizontal and vertical movement of the wave exploiting approximately 80% of the wave motion,which makes this design capable of exploiting the simplest details of the wave movement and converting it into. This design was compared to other designs such as the rm5 and rm6, and the comparison was in terms of the carrying capacity and quality of converting waves into electricity,and finally the performance of each design's ability to produce energy. After all these comparisonswere made, it became clear that the new design was significantly superior to the rest of the previousexisting designs. The energy production capacity was more than 5 times that of other designs.

Keywords: wave energy, electrical energy, wave motion, energy production

Conference Agenda

Time	Opening Proceeding	Presenters
1ˢᵗ day 03 October 2023		
Time	**Opening Proceeding**	**Presenters**
8:30 – 9:00 am	Registration (Opening MS Teams and attendance	Organizing Team
9:00 – 9:02 am	Oman National Anthem	
9:02 – 9:05 am	ICEM Anthem	
9:05 – 9:15 am	Reading of the Holy Quran	**Mr. Eldar Abdullayev**
9:15 – 9:30 am	Welcome Address	**Dr. Yingkui Zhao** The Dean of ICEM
Keynote Speakers Session		
9:45 – 10:15 am	Research Trends of Biomass Based Carbon Technology	**Dr. Mohammed Danish** Universiti Sains Malaysia Danish@usm.my
10:20 – 10:50 am	Environmental Challenges	**Faye Centeno** Focal person for Disaster Risk Management for a local government. centenodorothyfaye@gmail.com
10:50 – 11:10 am	**Break**	
11:10 am – 11:40 pm	A clean and sustainable environment via the recruitment oflingo cellulosic wastes and artificial intelligence for the green synthesis of value-added products, clean fuels, and wastewater treatment	**Prof. Dr. Nour El-Gendy** Egyptian Petroleum Research Institute (EPRI), Egyptnourepri@yahoo.com
11:45 – 12:15 pm	Health and Safety in Workplace	**Prof. Dr. Rashmi Mishra** Noida Institute of Engineering & Technology (NIET) dr.mishra.rashmi@gmail.com
12:20 – 12:50 pm	The Current State of Tourism in Oman Post Pandemic	**Mr. Badar Al Dhuhli** Oman Tourism College badar.al-dhuhli@otc.edu.om
Guest Speakers		

1:00 – 1:20 pm	Phenolic xenobiotic Nano biodegradation using Bacillusnealsonii decorated by macroalgal-synthesized magneticnanoparticles	**Prof. Dr. Hussein N. Nassar** Egyptian Petroleum Research Institute (EPRI), Nasr City, Cairo,Egypt hessen_nasar@hotmail.com humohamed@msa.edu.eg
1:20 – 1:40 pm	Optimization of Biodiesel Production from Waste Cooking Oil Using Immobilized Bacillus pumilus Lipase onto Amine-Functionalized SBA-15 Derived from Rice Straw: A Sustainable Approach for High Yield and Reusability	**Prof. Dr. Abdallah R. Ismail** Egyptian Petroleum Research Institute (EPRI), Nasr City, Cairo, Egypt abdo82004@hotmail.com
1:40 – 2:00 pm	**Discussion and Recommendations**	
2:00 pm	**1st day closing**	
2nd day 4th October 2023Parallel Presentations		
Breakout Room 1		
9:00 – 9:20 am	The performance of combined coagulation and oxidationprocesses for the treatment of stabilized landfill leachate	**Muneer M.A. Ayash** University Kuala Lumpur, Malaysian Institute of Chemical and Bioengineering, TechnologyUniversity Kuala Lumpur, ayashmuneer@gmail.com
9:20-9:40 AM	Utilizing Covid-19 Disposable Face Masks in TheProduction of Eco-Composite from Bamboo Fiber	**Shamir Amani Bin Samrulzaman Nur** Technology Division, Universiti Sains Malaysia, Penang Malaysia **nurizzaati@usm.my**

Time	Title	Presenter
9:40 – 10:00 am	Physical and Mechanical Properties of Recycled High- Density Polyethylene (rHDPE) Composite Reinforced withBamboo Particles.	**iqah Binti Mohamad NoorNur** Technology Division, Universiti Sains Malaysia, Penang Malaysia nurizzaati@usm.my
10:00 – 10:20 am	Preparation Of Sustainable Scavengers From Banana PeelActivated Carbon Functionalized With N-Doped Carbon Dots To Remove Pb(Ii) Ions	**Nur Aishah Binti Rosland**Universiti sains malaysia, esharosland@gmail.com

10:20 – 10:40 pm	Break	Break
10:40 – 11:00 am	Preparation of sustainable adsorbent from banana peel activated carbon functionalizing with carboxylic groups using iminodiacetic acid (IDA) and carbon dots to removezinc metal	**Hoo Ya Wen** University Sains Malaysia Schoolof Technology Industry Bioresource Technology Yawenhoo@hotmail.com
11:00 – 11:20 am	Improvement in the washing principle of smart dishwasherusing optimized heat and rotating double arm jet spray	**Hammad Khalid** Fareed University of Engineering& IT Pakistan hkhalid@kfueit.edu.pk
11:20 – 11:40 am	a phytoremediation study on sustainable wastewater treatment by removal of cadmium through azolla pinnata inmuscat regional areas	**Safa Al Mandhari** International College of Engineering and Management(ICEM), Muscat, Oman H18000067@icemoman.net
11:40-12:00 am	Impact of COVID-19 on Work Performance in Oman	**Mahmood Al Kiyumi** International College of Engineering and Management(ICEM), Muscat, Oman H05010669@icemoman.net
12:00 – 12:20 am	erical Analysis Of Cross Axis Wind Turbine With Enhanced Performance	**Faheem Abbas** University of Engineering and Information Technology, RahimYar Khan, Pakistan mumtaz.ahmed@kfueit.edu.pk
12:20 – 12:40 pm	Break	

12:40 - 1:00 pm	Occupational a health Risks in the cement Factory	**Iman Masoud Ali Al Rahbi,** International College of Engineering and Management(ICEM), Muscat, Oman imanalrahbi0@gmail.com

1:00 – 1:20 pm	Numerical simulation of cutting transport ability of water- based drilling fluids with Nano-particles in horizontal wells	**Zainab Al Jarehi** International College of Engineering and Management(ICEM), Muscat, Oman H18000282@icemoman.net
1:20 – 1:40 pm	Evaluating Effectiveness of the Epoxy Resin and ModifiedDrilling Fluid for Corrosion Inhibition on the Drill Pipe	**Abdul Rahman** Mouhammed Youssef International College of Engineering and Management(ICEM), Muscat, Oman H17000181@icemoman.net
1:40 – 2:00 pm	**Break**	
2:00 – 2:20 pm	Lab Scale Synthesis of Sandstone and Shale Cores	**Al-Hassan Ali Nasser Al-Maqahami** International College of Engineering and Management(ICEM), Muscat, Oman H18000056@icemoman.net
2:20 – 2:40 pm	Analysis of the relationship between early kick detections and MPD (Managed Pressure Drilling)	**Mahmood Zahir Al-Hinaai** International College of Engineering and Management(ICEM), Muscat, Oman

		h06013127@icemoman. net
2:40 – 3:00 pm	Influencing Career Choice of Male Students InEducation Courses	**Valdez, Devina Mhae M. Valdez& Johanna D. Lachica** Urdaneta City University, Collegeof Department Education devinamhaevaldezmerlin .04@gmail.com
3:00 – 3:200 pm	**Discussion and Recommendation**	
3:20 – 3:40 pm	**Closing**	

	Breakout Room 2	
9:00 – 9:20 am	Traffic Signs and Pavement Markings: Knowledge and Awareness of Motorcycle Driver's in the Municipality ofCalinog"	**Marelyn P.Palma &Evelyn S. Licera** West Visayas State University- shielacasabuena4@gmail.com
9:20 – 9:40 am	ability of Cupcake Made of Taro (ColocasiaEscultenta Flour	**Jessa M. Segura** School Of Management West Visayas State University, lamanmjclavel@gmail.com
09:40 – 10:00 am	Behavioral Study Pattern among Hospitality Management Students: An Approach to Enhance Academic Performanceduring New Normal. Unpublished undergraduate thesis,	**Jonna A. Cordada & John DaveLindayao & Jenny Rose Mandar** School Of Management West Visayas State University, lamanmjclavel@gmail.com
10:00 – 10:20 am	Friction stir spot welding of ferrous to nonferrous metal.	**Usman Al Hassan Al Pirzada, ,** Institute of Metallurgy and Materials Engineering, Universityof the Punjab, Lahore usman19mmes1323@gmail.com
10:20 – 10:40 am	Occupational causes and effects of inspection vehicleworkshops in Ghala industrial	**Alla Suleiman Al-Nabhani** International College of Engineering and Management (ICEM), Muscat, Oman Alaaalnabhani@outlook.sa
10:40 – 11:00 am	**Break**	

11:20 – 11:40 am	Effects of Chemical Exposure on the Health and Safety of Pharmaceutical Workers in Sohar, Oman	**Maryam Mohammed Rashid Khalifa Al-naaimi** International College of Engineering and Management(ICEM), Muscat, Oman mmral-naaimi@uclan.ac.uk
11:40 – 12:00 pm	Evaluate the impact of oil spills on seabirds in the Strait of Hormuz	**Fawziya Marzouq Mohammed AL Dhuhuri.**
		International College of Engineering and Management(ICEM), Muscat, Oman H18000121@icemoman.net
12:00 – 12:20 pm	Development of the Pyrolysis Reactor for the Conversion ofPlastic Waste into Fuel and its Feasibility in Diesel Engine	**Umair Khalid** Khwaja Fareed University of Engineering and Information Technology RahimYar Khan mumairkhalid777@gmail.com
12:20 – 12:40 pm	Robotic Arm Control: EMG-Based Precisionand Safety	**Hammad ul Hassan** University of Chakwal, Punjab, Pakistan hammadulhassan752@gmail.com
12:40 – 1:00 pm	The Use of Zinc Oxide and Aluminum Oxide Nanoparticlesfor the Flow Assurance of Heavy Crude Oil	**Shamsa Al Balushi** International College of Engineering and Management(ICEM), Muscat, Oman h18000120@icemoman.net

1:00 – 1:20 pm	ndustrial Automation with the Pick and PlaceRobotic Arm	**Abdullah Ans** University of Chakwal, Chakwal,Pakistan abdullahansmughal@gmail.com
1:20 – 1:40 pm	on of Disease in humans using Machine Learningand Image Processing	**Moazam Zulfiqar** Mirpur University of Science AndTechnology (MUST), Mirpur, AK, Pakistan moazma625@gmail.com
1:40 – 2:00 pm	hyroid Disease Prediction Using MachineLearning	**Gibran Said Tatari**

		Mirpur University of Science AndTechnology (MUST), Mirpur, AK, Pakistan. gibrantatari04@gmail.com
2:00 – 2:20 pm	y on Construction Waste Recyclable Material and itsImpact on the Environment.	**Nasser Khalifa Ali Al - Hajri** International College of Engineering and Management(ICEM), Muscat, Oman H18201089@icemoman.net
2:20 – 2:40 pm	The Level of Omani Female Employment in the Oil and Gas Sector in the Sultanate of Oman	**Raseel Mohammed Jaber AlZahli** International College of Engineering and Management(ICEM), Muscat, Oman raseel_athuhli@outlook.com
2:40 – 3:00 pm	Horizontal and Vertical Wave Compression to Enhance thePotential of Clean Energy Production from Wave Energy	**Alhussain Ali Alhadrami** andGirma T. Chala International College of Engineering and Management(ICEM), Muscat, Oman alhussainalhadrami@outlook.com
3:00 - 3:20	**Discussion and Recommendations**	
3:20 – 3:40	**Closing**	