

**ISBN: 978-969-9948-62-9**



# **ADEDAS 2019**

**International Conference on Applied Sciences, Data Mining  
Engineering, Design Smart Material (ADEDAS)**

**February 02-03, 2019 / Singapore**

# **Proceedings of International Conference on Applied Sciences, Data Mining, Engineering, Design & Smart Material (ADEEDAS)**

**Conference organized by:**



**Research Forum  
for Applied Sciences,  
Engineering & Technology**

This conference is dedicated to educators all over the world and to the members of the Research Forum for Applied Sciences Engineering and Technology (RFAET) whose passion for teaching, learning, research, and service are helping to transform the academy in many positive ways.

### **Mission, Vision, and Core Values**

Exploration of new research bits of knowledge and an intuitive stage for improving innovation and advancement

Lead the researchers through global communication and collaboration.

Scholastic Innovation, Excellence and Integrity, Insightful Research, Networking, Professional Leadership, Assorted Variety and Equity, Collegiality and Collaboration, Corporate Social Responsibility

### **Membership, Conference, Publishing, and Research Information**

If you are interested in serving as the volunteer reviewer for the next conference, please contact:

mail: [info@aet-forum.com](mailto:info@aet-forum.com)

Web site: [aet-forum.com](http://aet-forum.com)

## Research Forum for Applied Sciences Engineering and Technology

### Table of content

|  |    |
|--|----|
| Welcome Message . . . . .  | 5  |
| Scientific Committee . . . . .   | 6  |
| Conference Description . . . . .   | 7  |
| Conference Schedule . . . . .  | 8  |
| A Two-Stage Approach for Improving In-Store Experience to Form Attitude and Purchase Intention Toward Fashion Retail Store . . . . . | 14 |
| A Phenomenological Inquiry on the Devotees of the Miraculous Image of San Agustin De Tanza, Philippines . . . . .                    | 15 |
| Impact of R&D Internationalization on Innovation Competitiveness: Central European Countries under Focus . . . . .                   | 16 |
| Enhancing Copper Reduction in a Single Chambered Up-Flow Membrane-Less Microbial Fuel Cell . . . . .                                 | 18 |
| Analysis of Flexural Capacity of Fiber Reinforced Concrete Pavements . . . . .   | 19 |
| Effect of Polypropylene Fibers on Serviceability and Ultimate Limit States on Fiber Reinforced Concrete Behavior . . . . .           | 20 |
| Investigating the incidence of Endometrial Hyperplasia Among Woman Exposed PM10 . . . . .  | 21 |
| Upcoming Events . . . . .  | 22 |

## Welcome Message

The Research Forum for Applied Sciences Engineering and Technology (RFAET) welcomes you to the International Conference on Applied Sciences, Data Mining, Engineering, Design & Smart Material (ADEDAS).

We are happy you decided to join your colleagues from around the world to explore innovative technologies, pioneering pedagogical strategies, and a sampling of international collaborations that are being used to engage and retain students, researchers and Scholars in the new millennium.

## Scientific Committee

Jan Fook, International Centre for Higher Education Educational Research, Leeds Trinity University, UK  
Jennifer Bowerman, MacEwan University, Canada  
Jo Ann Rolle, Medgar Evers College, The City University of New York, USA  
John Davies, Victoria University of Wellington, New Zealand  
Julie Baldry Currens from Higher Education Academy, UK  
Lela Pumphrey, The British University in Egypt  
Lobna Ali Al-Khalifa, National Authority for Qualifications & Quality Assurance of Education & Training (QQA), Bahrain  
Jan Fook, International Centre for Higher Education Educational Research, Leeds Trinity University, UK  
Jennifer Bowerman, MacEwan University, Canada  
Jo Ann Rolle, Medgar Evers College, The City University of New York, USA  
John Davies, Victoria University of Wellington, New Zealand  
Imbarine Bujang, Universiti Teknologi MARA, Malaysia  
Jeff Ritter, Marketing Concentration Chair, Keiser University, USA  
Jennifer Bowerman, MacEwan University, Canada  
JP Spencer, Cape Peninsula University of Technology, Cape Town, South Africa  
Lobna Ali Al-Khalifa, National Authority for Qualifications & Quality Assurance of Education & Training (QQA), Bahrain  
ManojKumar Gandhi, Jaysingpur College of Arts, Commerce, Science and Computer Science, Maharashtra State, India  
Mudrajad Kuncoro, Gadjah Mada University, Yogyakarta, Indonesia  
Justin Henley Beneke, University of Winchester, UK

## Acknowledgements

The organizing committee would like to thank all those people who were involved in making the conference a success. A great amount of planning and organizing is required to hold a successful conference, so we are indebted to those who volunteered their time and energy.

We want to thank all the members of the Research Forum for Applied Sciences Engineering and Technology (RFAET) who volunteered their time to help organize the conference.

## Conference Description

Research Forum for Applied Sciences Engineering and Technology (RFAET) provides an excellent venue for generating ideas. Conference participants will explore the latest trends, practices, and research in engineering technology and Applied Sciences tracks. The program will emphasize experimentation and pushing the boundaries of higher education.

## ENGINEERING TECHNOLOGY

Acoustical Engineering Aerospace Engineering, Agricultural Engineering Biological Engineering and Sciences, Biological Systems Engineering Biomedical Engineering, Bioprocess Engineering Biotechnology, Building Services Engineering Chemical Engineering, Industrial Engineering Information Engineering, Informational Technology Manufacturing Engineering and Technology, Materials Engineering Mechanical Engineering, Mechatronics Nanotechnology and Nanoengineering, Naval Engineering Nuclear Engineering, Technology for Cloud Computing Technology for Community, Technology for Digital Age Technology for Human Use, Technology for Learning Civil Engineering, Computer Engineering Current issues and challenges in Engineering, Electrical Engineering Electronic Engineering, Energy Engineering Environmental Engineering, Food Engineering Genetic Engineering, Geotechnical Engineering Ocean Engineering and Technology, Optical Engineering Petroleum Engineering, Power Engineering Process Engineering, Resource Engineering Sensing Technology, Structural Engineering Systems and Software Engineering, Technology for Big Data Textile Engineering, Thermal Engineering Transport Engineering, Web Engineering Vehicle Engineering

## APPLIED SCIENCES

Artificial Intelligence, Architecture, Astronomy, Biological Sciences, Botany, Chemistry, Design, Earth Science, Ecology, Marine Science, Physics, Space Sciences, Life sciences, Computer Sciences, Logic, Mathematics, Statistics, Systems Science, Electrical Engineering, Information, Technology, Industrial Engineering, Mechanical Engineering, Applied Physics, Health Sciences and Medicine, Ceramic Engineering, Computing Technology, Electronics, Energy, Environmental Engineering Sciences, Engineering physics, Environmental Technology, Fisheries Science, Forestry Science, Materials Engineering Micro technology, Nanotechnology, Nuclear, Technology, Optics, Zoology Transportation

## Conference Awards

### **Best Paper Awards**

The Organizing Committee will select the best paper considering the recommendations of the Scientific Review Committee based on the relevance to the theme, academic contribution, accuracy of the methodology, clarity of contents.

### **Best Presentation Awards Sessions**

The best presenter in each session will be selected considering the scientific quality, contents, time management, presentation style and level of interaction with the audience. The best presenter in each session will get a certificate.

### **Best Presentation Awards Students**

These awards will be awarded the best presenters selected from the PhD or Master level students' presenters. The selection criteria will be scientific quality, contents, time management and presentation style.

## Conference Schedule

### **International Conference on Applied Sciences, Data Mining, Engineering, Design & Smart Material (ADEDAS)**

Grand Pacific Hotel, Singapore  
February 02-03, 2019

|                     |                            |
|---------------------|----------------------------|
| 09: 00 am 09: 20 am | Registration and Reception |
| 09: 20 am 09: 30 am | Opening ceremony           |
| 09:30 am 09: 45 am  | Welcome Remarks            |
| 09: 45 am 10: 00 am | Tea Break                  |



## International Conference on Applied Sciences, Data Mining, Engineering Design & Smart Material (ADEDAS)

**Day 01: Saturday  
February 02, 2019**

**Session 01: (10:00 am 11: 00 am)**

**Session Chair: Soong Ju Oh**

**Track A: Business, Management, Economics, Social Sciences & Humanities**

Presenter Name: Astri Hapsari

Reference ID: FBMSH-FEB-005

Paper Title: A Two-Stage Approach for Improving In-Store Experience to Form Attitude and Purchase Intention toward Fashion Retail Store

---

Presenter Name: Astri Hapsari

Reference ID: FBMSH-FEB-012

Paper Title: A Phenomenological Inquiry on the Devotees of the Miraculous Image of San Agustin De Tanza, Philippines

---

Presenter Name: Lorenzo Alvin T. Capio

Reference ID: FBMSH-FEB-005

Paper Title: A Two-Stage Approach for Improving In-Store Experience to Form Attitude and Purchase Intention toward Fashion Retail Store

---

Presenter Name: Paula Puskarova

Reference ID: FBMSH-FEB-008

Paper Title: Impact of R&D internationalization on Innovation Competitiveness: Central European Countries Under Focus

---

## International Conference on Applied Sciences, Data Mining, Engineering, Design & Smart Material (ADEDAS)

**Day 01: Saturday  
February 02, 2019**

Session 02: 11:00 am 12:00 pm

Session Chair: Soong Ju Oh

Track B: Engineering, Technology, Computer & Applied Sciences

Presenter Name: Chi-Wen Lin

Reference ID: ADEDAS-FEB-001

Paper Title: Enhancing Copper Reduction in a Single Chambered Up-Flow Membrane-Less Microbial Fuel Cell

---

Presenter Name: Shu-Hui Liu

Reference ID: ADEDAS-FEB-002

Paper Title: Investigating the Incidence of Endometrial Hyperplasia among Woman Exposed PM10

---

Reference ID: Salam Wtaife

Reference ID: ADEDAS-FEB-004

Paper Title: Effect of Polypropylene Fibers on Serviceability and Ultimate Limit States on Fiber Reinforced Concrete Behavior

---

Presenter Name: Salam Wtaife

Reference ID: ADEDAS-FEB-007

Paper Title: Analysis of Flexural Capacity of Fiber Reinforced Concrete Pavements

## Conference Attendees

The following scholars/practitioners/educationist who don't have any paper presentation, however they will attend the conference as delegates & observers.

Participant Name: Soong Ju Oh

Reference ID: ADEDAS-FEB-005

Country: Materials Science and Engineering Department in Korea University, Korea

---

**Closing Ceremony & Lunch (12:00 pm 01:00 pm)**

---



## **International Conference on Applied Sciences, Data Mining Engineering, Design & Smart Material (ADEDAS)**

**Day 02: Sunday  
February 03, 2019**

**Conference second day is reserved for participants own tourism activities.**



Research Forum  
for Applied Sciences,  
Engineering & Technology

## **Track A: Business, Economics, Social Sciences and Humanities**



# A Two-Stage Approach for Improving In-Store Experience to Form Attitude and Purchase Intention Toward Fashion Retail Store

Astri Hapsari <sup>1\*</sup>, Reza Ashari Nasution <sup>2</sup>

<sup>1,2</sup> School of Business and Management, Institut Teknologi Bandung, Bandung, Indonesia

**Corresponding email:** [astri.hapsari@sbm-itb.ac.id](mailto:astri.hapsari@sbm-itb.ac.id)

---

A retail fashion store in Indonesia experienced the competition of rapid online stores emergence. The in-store experience factors that consist of store brand perceptions, store characteristics, and marketing communications mix should be enhanced to overcome the challenge in order to capture the opportunities that are not available in shopping online. This research is aimed to examine the relationship of in-store experience factors in store brand perceptions, store characteristics, and marketing communications mix on attitude and purchase intention toward Indonesian fashion store. The survey was done through questionnaire using the purposive sampling method. The questionnaire was distributed to 364 consumers through mall intercept and e-mail. The research results indicated that various factors in store brand perceptions, store characteristics, and marketing communications mix have significant and positive influence on attitude and purchase intention toward Indonesian fashion store. Specifically, brand image, product assortment, and salespersons service have greater influence on attitude toward Indonesian fashion store. Meanwhile, perceived value, product display, store layout, atmosphere, advertising, and direct marketing have greater influence on purchase intention toward Indonesian fashion store. A two-stage approach is used to determine the recommendations to form attitude and purchase intention based on the factors that have greater influence on each stage. The findings of this research provide useful implications for fashion retailers on store brand perceptions, store characteristics, and marketing communications mix as the in-store experience factors to form attitude and purchase intention through two-stage approach. The recommendations for future research on fashion retail stores are discussed.

**Index Terms:** In-store Experience, Store Brand Perceptions, Store Characteristics, Marketing Communications Mix, Attitude, Purchase Intention, Two-Stage Approach



## A Phenomenological Inquiry on the Devotees of the Miraculous Image of San Agustin De Tanza, Philippines

Lorenzo Alvin T. Capiro <sup>1\*</sup>, Susana R. Reyes <sup>2</sup>

<sup>1</sup> De La Salle Medical and Health Sciences Institute, Philippines

<sup>2</sup> Asian Social Institute, Philippines

**Corresponding email:** [alvin.capio@yahoo.com](mailto:alvin.capio@yahoo.com)

---

Filipinos are considered significant missionaries in the world. This is because they bring with them their lively faith expressions. The phenomenal demonstration of the devotees devotion to San Agustin de Tanza has taken root in the local culture. This has become an instrument in drawing the faithful closer to God. The purpose of this paper is to have profound insights on the lived-experiences of one of the popular devotions in Cavite, Philippines, which can help clarify some misunderstanding between the Church officials and the churchgoers. Phenomenological approach is used in this study to describe, interpret and reflect on the devotees lived experiences in relation to the miraculous image of San Agustin which could give significance to our Catholic spirituality. This study found out that the devotees devotion to the miraculous image of San Agustin de Tanza is entirely their own God experience. This phenomenon, according to Aloysius Pieris (2007), is cosmic religiosity which is not a form of idolatry and animism. This study brings some light in the challenges that the church faces nowadays like growing number of churchgoers who are inactive in the church activities which facilitates a healthy and creative relationship between the churchgoers and the Church officials.

**Index Terms:** Religiosity, Devotion, Devotees, Phenomenology



# Impact of R&D Internationalization on Innovation Competitiveness: Central European Countries under Focus

Paula Puskarova \*

University of Economics in Bratislava

**Corresponding email:** paula.puskarova@euba.sk

---

The paper attempts to analyze the current situation in the internationalization of the Slovak research and development sector while comparing it to the economies close in terms of historic economic paths and location, namely the Czech Republic, Poland and Hungary. The internationalization of research and development is monitored through both inputs and outputs into the research and development process. Even though the selection of the appropriate proxies for the inputs and outputs remain a challenge, our set of selected measures might draw quite a comprehensive picture of the research and development in Slovakia and neighboring Central European countries. In conclusion, we provide an overview of the possible implications of the internationalization of research and development, and provide recommendations for escaping adverse trends

**Index Terms:** Research, Development, Challenge, Internationalization





Research Forum  
for Applied Sciences,  
Engineering & Technology

## **Track B: Engineering Technology & Applied Sciences**



# Enhancing Copper Reduction in a Single Chambered Up-Flow Membrane-Less Microbial Fuel Cell

Pei-Xuan Zhang <sup>1</sup>, You-Rong Chen <sup>2</sup> Chi-Wen Lin <sup>3\*</sup>

Department of Safety, Health and Environmental Engineering, National Yunlin University of Science and Technology, Taiwan

**Corresponding email:** [Linwen@yuntech.edu.tw](mailto:Linwen@yuntech.edu.tw)

---

Microbial fuel cells (MFCs) can directly convert chemical energy to electricity by the biodegradation of pollutants. When used in on-site pollutant treatment, MFCs facilitate both ecological rehabilitation and energy recovery. Therefore, they have considerable potential as a feasible emerging biological treatment technology. The purpose of this study is to develop a new type of material carbon pottery basin (CPB), which can be used as a cathode of membrane-less microbial fuel cell (ML-MFC) because of its porosity, adsorption and conductivity. The ML-MFC was then used to treat copper-containing wastewater and produce electricity. The main idea is to firstly adsorb a part of Cu<sup>2+</sup> in the wastewater by CPB to reduce the concentration of Cu<sup>2+</sup> to prevent inhibiting the microorganisms in the anode, and then copper compounds was formed through the ML-MFC system. The copper compound was partially adsorbed to the surface of the CPB and thus achieved the additional modification of the cathode. Results Higher power density (113.7 mW/m<sup>2</sup>), Cu<sup>2+</sup> recovery (96.5%) and chemical oxygen demand (COD) removal (80%) were observed after 7 days operation. Compared to ML-MFC with PB as cathode, a 30% internal resistance reduction was observed for ML-MFC with CPB as cathode under pH 7 condition. Cyclic voltammetry shows an increase of redox peak current at 1.11-5.45 times under pH 7 compared to other conditions. Conclusion This work establishes the feasibility of using a CPB cathode to increase the recovery of Cu<sup>2+</sup> and the generation of electricity by MFCs.

**Index Terms:** Microbial fuel cells (MFCs), recovery of copper, wastewater treatment, electricity generation



# Analysis of Flexural Capacity of Fiber Reinforced Concrete Pavements

Salam Wtaife <sup>1\*</sup> Ahmed Alsabbagh <sup>2</sup> Taleb Eissa <sup>3</sup>  
Emad Alshammari<sup>4</sup>, Alaa Shaban<sup>5</sup>, Nakin Suksawang<sup>6</sup>

<sup>1</sup>Lecturer at University of Misan/Iraq

<sup>2</sup>Lecturer at Civil Engineering Department/College of Engineering/University of Babylon/Iraq

<sup>3</sup>Lecturer at Civil Engineering Department/ Faculty of technical sciences of Sabha/ Libya

<sup>4</sup>Lecturer at University of Hail/Kingdom of Saudi Arabia. <sup>5</sup>Lecturer at Civil Engineering Department Engineering College/University of Kerbala/Iraq

<sup>6</sup>Associate Professor at Mechanical and Civil Engineering Department/College of Engineering and Science/Florida Institute of Technology/United States.

**Corresponding email:** [swtaife2014@my.fit.edu](mailto:swtaife2014@my.fit.edu)

---

The utilization of concrete pavements has been grown over the last decades because it has high durability and longer structural life compared with asphalt pavements. Cracks in concrete pavements present the main factor of pavement failure, and the major cause of appear cracks is the weak tensile and flexure properties of the concrete material itself. Therefore, utilizing discrete fiber in concrete is one option to decrease the weakness of concrete. This paper using the cylinder and beam specimens to understand the effect of two different types of discrete fibers and various volume on mechanical properties of concrete. Additionally, the experimental results were simulated by Finite Elements Method (F.E.M) through ANSYS software program. The mechanical properties for seven cases used in this study related to Fiber Reinforced Concrete (FRC) included compressive strength, modulus of elasticity, break strength, modulus of rupture, and flexural toughness. The outcome of the study indicated that low volume fraction of the steel and polyvinyl alcohol (PVA) fibers have little effect on the flexural capacity of concrete pavement, but steel fibers provide improvements that are more significant in toughness and residual strength than PVA fibers.. Adding 0.4 and 0.6% steel fibers to concrete pavement provided flexural toughness up to 82 and 94 N.m, which is about 137 and 156 times, respectively. The analytical analysis by ANSYS software provided results which are close to experimental work with more safer design.

**Index Terms:** Concrete Pavement, FRC, Steel Fiber, PVA Fiber, and Modulus of Rupture.



# Effect of Polypropylene Fibers on Serviceability and Ultimate Limit States on Fiber Reinforced Concrete Behavior

Salam Wtaife <sup>1\*</sup> Ahmed Alsabbagh <sup>2</sup> Taleb Eissa <sup>3</sup>  
Emad Alshammari<sup>4</sup>, Alaa Shaban<sup>5</sup>, Nakin Suksawang<sup>6</sup>

<sup>1</sup>Lecturer at University of Misan/Iraq

<sup>2</sup>Lecturer at Civil Engineering Department/College of Engineering/University of Babylon/Iraq

<sup>3</sup>Lecturer at Civil Engineering Department/ Faculty of technical sciences of Sabha/ Libya

<sup>4</sup>Lecturer at University of Hail/Kingdom of Saudi Arabia. <sup>5</sup>Lecturer at Civil Engineering Department Engineering College/University of Kerbala/Iraq

<sup>6</sup>Associate Professor at Mechanical and Civil Engineering Department/College of Engineering and Science/Florida Institute of Technology/United States.

**Corresponding email:** [swtaife2014@my.fit.edu](mailto:swtaife2014@my.fit.edu)

---

Polypropylene fibers have a significant role in serviceability and ultimate limit states of flexural test for fiber reinforced concrete (FRC). The serviceability limit states behavior is divided into two stages, before and after peak load, and one stage for ultimate limit states behavior. In this study, four-volume fractions of FRC were 0.5, 0.8, 1.5 and 2%, as well as two concrete mixes, with and without aggregate were investigated to determine the improvement of concrete fracture behavior during the three stages of the flexural test. The Polypropylene fiber was determined for each stage by using the ACI equation of toughness ratio. The results show Polypropylene fiber has improved toughness performance in all stages. Thus, the Polypropylene fiber at serviceability limit states could improve the toughness ratio more than 10 and 25 times for volume fraction less and more 1%, respectively, of plain concrete. The results show Polypropylene fiber has improved toughness performance in all stages. Thus, the Polypropylene fiber at serviceability limit states could improve the toughness ratio more than 10 and 25 times for volume fraction less and more 1%, respectively, of plain concrete. Moreover, the toughness ratio of the ultimate limit states for Polypropylene fiber has improved more than 7.5 times for volume fraction less than 1% and 57.7 and 63.1 times for volume fraction 1.5 and 2%, respectively, of plain concrete.

**Index Terms:** Polypropylene, Toughness Ratio, Serviceability



# Investigating the incidence of Endometrial Hyperplasia Among Woman Exposed PM10

Shu-Hui Liu<sup>1\*</sup>

Department of Health Care and Social Work, Yu Da University of Science and Technology, Taiwan, Center for General Education, Yu Da University of Science and Technology, Taiwan

**Corresponding email:** [bamy680606@gmail.com](mailto:bamy680606@gmail.com)

---

**Problem statement** The health effects of air pollution have been widely known in the world. Many studies showed that exposed environmental pollutants would promote diseases changes of internal mechanisms including infections, hormonal changes, and angiogenesis. That related to development and severity of endometrial hyperplasia (EH). In Taiwan, the indicator pollutants of poor air quality are usually particulate matter (PM). **Methods** This study used the average PM10 concentration of the EPA air quality monitoring data from 2000 to 2013 as the exposure concentration, and patients with EH were based on the health insurance data from 2002 to 2013. We also used one case to match one similar age control. During the study period, there were 1769 cases of EH and 1769 controls. We compared the difference between case and control group. **Results** Compared with the control group, the case group had significantly higher mean age ( $p < 0.001$ ), higher PM10 exposure concentration ( $p < 0.001$ ), and significantly higher rate of diabetes, hyperlipidemia, hypertension ( $p < 0.001$ ), and significantly higher proportion of living Southern Taiwan and low monthly income ( $p < 0.001$ ). Higher PM10 exposure concentration group also had significantly lower average age ( $p < 0.001$ ), higher morbidity ( $p < 0.001$ ), lower monthly income ( $p < 0.001$ ), and significantly higher proportion of living in the Southern Taiwan ( $p < 0.001$ ). **Conclusion** Exposure to high concentrations of PM10 will increase the incidence of endometrial hyperplasia and increase the risk of comorbidity, especially living in the Southern Taiwan. It is important that improvement of air quality and prevention of disease should be paid attention and made effort to safeguard the people health.

**Index Terms:** Air pollution, endometrial hyperplasia (EH), particulate matter (PM), exposure



## Upcoming Events

---

<http://aet-forum.com/cbeia-march-2019/>

---

<http://aet-forum.com/iecaet-march-2019/>

---

<http://aet-forum.com/iaib-april-2019/>

---

<http://aet-forum.com/spps-april-2019/>

---

<http://aet-forum.com/snait-may-2019/>

---

[http://aet-forum.com/teese-may-2019](http://aet-forum.com/teese-may-2019/)

---

<http://aet-forum.com/sisa-june-2019/>

---

<http://aet-forum.com/ctsam-june-2019/>

---

<http://aet-forum.com/eeee-august-2019/>

---

<http://aet-forum.com/tiac-august-2019/>

---

<http://aet-forum.com/cean-september-2019/>

---

