

IAETS-2018



**International Conference on Industrial Applications,
Engineering Technology and Applied Sciences
The Howard Plaza Hotel Taipei, Taiwan
January 05-06, 2018**



ESRDB

CONFERENCE BOOK OF ABSTRACT PROCEEDINGS

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Engineering Science Research & Development Board



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***International Conference on Industrial Applications,
Engineering Technology and Applied Sciences
(IAETS-2018)***

Venue: The Howard Plaza Hotel Taipei, Taiwan

Conference Theme: Promoting research and developmental activities
through knowledge and ideas sharing.



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CONFERENCE TRACKS

- Basic Science
- ICT
- Electrical Engineering
- Mechanical & Industrial Engineering
- Civil Engineering
- Business and Management Studies
- Electric Drives and Control
- Electrical Machines
- Instrumentation Engineering
- Power Generation, Transmission and Distribution
- Power System Engineering

CONFERENCE CHAIR MESSAGE

Ms. Mei Shu Lai

“International Conference of Engineering Science Research and Development Board” is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences and applied sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let’s get over all sorts of discrimination and take a look at the wider picture. Let’s work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Ms. Mei Shu Lai

Conference Chair

Email: contact@esrdb.com



CONFERENCE SECHDULE

ESRDB-2018

Venue: The Howard Plaza Hotel, Taipei, Taiwan

Time: Registration & Kit Distribution (09:00 am - 09:30 am)

Day:Friday

Date: January 05, 2018

Venue: Room 1

09:30 am - 09:40 am	Introduction of Participants
09:40 am - 09:50 am	Inauguration and Opening address
09:50 am - 10:00 am	Grand Networking Session



DAY 01 (January 05, 2018)

Presentation Session 1 (10:00 am 11:15 pm)

Venue: Room 1

Track: Engineering, Computer Science and Applied Sciences

Presenter Name	Manuscript Title	Paper ID
Feng-Jen Yang	The Session Design of an Intelligent Tutoring System for Data Normalization	IAETS-JAN-TW101
Yung Kuan Chan	MRI Based Acoustic Neuroma Image Segmentation	IAETS-JAN-TW103
Dr. Yung Kuan Chan	Liquid-Based Cervical Cancer Cell Recognition Based on Hybrid Features	IAETS-JAN-TW105
Sun Lu	3D Printing Based Water Strider Robot with Superhydrophobic Legs	IAETS-JAN-TW106
Woranee Mungkalasiri	Simulation study of integrated biomass gasification with solid oxide fuel cell for power generation in Thailand	IAETS-JAN-TW102

DAY 01 (January 05, 2018)

Presentation Session 2 (11:15 am 12:00 pm)

Venue: Room 1

Track: Track B: Business Economics, Social Sciences & Humanities

Presenter Name	Manuscript Title	Paper ID
Min Gyung Kim	Effect of Message on Coasters and Social Density on Increasing Revenue: A Field Experiment in a Bar	TPSM-JAN-TW105
Meng-Hsin Chang	Preliminary Study of Elderly Neglect and Development of Screening Instrument for Hospitalized Community-dwelling Older Adults	TPSM-JAN-TW109
Maki Nakamura	Experimental Discussion about the Influence of the Proficiency in Tankendo on the Foot Posture	TPS-118-101

Lunch Break & Ending Note: (12:00 to 01:00 pm)

Participants Registered as Listener/Observer

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

Official ID:: TPSM-JAN-TW111A

Feberlina Sirait

National Taiwan Ocean University, Taiwan

Official ID:: TPS-118-101A

Kiyoshi Hoshino

Graduate School of Systems and Information Engineering University of Tsukuba
Japan

Official ID:: TPM-118-101

Ji Yeun Kim

University of Ulsan College of Medicine, Asan Medical Center Seoul, Korea

Official ID:: IAETS-JAN-TW109A

Wayne Chuang

Macauto USA Inc, USA

Conference Day 02 (January 06, 2018)

Second day of conference will be specified for touristy. Relevant expenses are borne by Individual him/herself.

TRACK A

***ENGINEERING, COMPUTER SCIENCE AND APPLIED
SCIENCES***

The Session Design of an Intelligent Tutoring System for Data Normalization

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Keywords: Intelligent Tutoring System, Intelligent Software Agent, Expert System, Data Normalization

Intelligent tutoring systems are commonly used for intensive knowledge acquisition in some particular subjects. In this paper, the design of tutoring sessions within an intelligent tutoring system for the knowledge domain of data normalization is addressed. As a primitive technology contrived along with the early network and hierarchical data modeling, data normalization is surprisingly not eliminated through the competitions of newer data modeling approaches such as entity-relationship and object-oriented data modeling but, instead, stands well under the test of time and still being used as a value-added technology to further test the resultant tables based on entity-relational data modeling. As a key module within this tutoring system, the session inventory module is maintaining tutoring sessions that are particularly designed in accordance with the bilateral tutoring protocol and the tutoring methods that are adopted in the system.

Simulation study of integrated biomass gasification with solid oxide fuel cell for power generation in Thailand

^{1*} Woranee Mungkalasiri,² Woranee MungkalasiriJitti Mungkalasiri

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Keywords: Biomass gasification, Overall system efficiency, Power generation, Solid oxide fuel cell

Biomass is the best source for renewable energy production in Thailand. Therefore, an integrated biomass gasification with solid oxide fuel cell (SOFC) is studied in this work via process simulation using Aspen Plus program. The objective is to study the effect of important parameters on total power generation and overall system efficiency. Biomass in Thailand are considered such as corncob, empty fruit bunch, cassava rhizome, rice straw, rice husk, bagasse and palm shell. The important parameters are gasifier temperature, air to biomass ratio, steam to biomass ratio, fuel cell temperature and fuel cell pressure. The simulated results revealed that all biomass have great potential for the gasification with SOFC power generation. Total power generation will be increased in case of increasing air to biomass ratio, steam to biomass ratio, fuel cell temperature and fuel cell pressure. Moreover, overall system efficiency will be increased when fuel cell temperature and fuel cell pressure are increased.

MRI Based Acoustic Neuroma Image Segmentation

^{1*} Yung Kuan Chan,² Meng-Hsiun Tsai

³ Ming-Chien Chen,⁴ Ming-Hui Cheng

^{1,2} National Chung Hsin University,^{3,4} National Chung-Shan Institute of Science & Technology Aeronautical System Reserch Division

Corresponding Email: ykchan@nchu.edu.tw

Keywords: Acoustic Neuroma, Magnetic Resonance Image (MRI), Image Segmentation, Edge Detection, Region Growing

In this research, an MRI based acoustic neuroma image segmentation system is proposed to extract the acoustic neuroma. The goal of this research is to solve great amount of waste in medical resource and time consuming in traditional acoustic neuroma detection. ACM and LSM are used to investigate the performance of the proposed method. In order to quantitate segmentation results, four commonly used segmentation error measures (ME, RAE, MHD, and RDE) are used in this research. The results show that the proposed method is better than other two methods with regards to segmentation accuracy

Liquid-Based Cervical Cancer Cell Recognition Based on Hybrid Features

^{1*} Dr. Yung Kuan Chan,²Dr. Jia-Hong Zhang

³ Mr Po-Hsuan Hsiao,⁴Prof Yung-Fu Chen

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² Metal Industries Research & Development Centre

⁴ Central Taiwan University of Science and Technology

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Keywords: Cervical cancer, Cervical smear, Squamous epithelium cell, Image segmentation, Image recognition

In this study, we develop an image based Liquid-based smear diagnosis system (ILSD system). The size, shape, color depth and internal texture of the cytoplasm and nucleus have a close relationship with the cervical cells which are normal or not. Segment the cytoplasm and nucleus region accurately from the cervical smear image is the most important technology in the automatic screening cervical smear system. Many scholars have proposed relevant research and methods. Therefore, this study proposed an image based Liquid-based smear diagnosis system (ILSD system) which focuses on cell identification. Cervical smear cells may be superficial squamous cell (S Cell), intermediate squamous cell (I Cell), parabasal squamous cell (P Cell), Low-grade squamous intraepithelial lesion cell (LSIL Cell), or high-grade squamous intraepithelial lesion cell (HSIL Cell), etc. The ILSD system used pathological features of the cervical smear, such as shape of cell, the ratio of nucleus area to the cytoplasm area, the regularity of the nuclear membrane, the content of the chromatin and distribution of the chromatin to provide information of treatment to doctor as a reference. Furthermore, a genetic algorithm is proposed to achieve the best performances to determine the most appropriate parameters in the each task. Although this study can accurately identify single cervical smear images, some of the cervical cancer can not be determined purely from the characteristics of a single cell. It needs to combine the cell cluster to determine the situation

3D Printing Based Water Strider Robot with Superhydrophobic Legs

^{1*} Sun Lu, ² Dongsu Lee

³ Gahyun Shim, Eunji Choi, ⁴ Heesue Cho, ⁵ Kyunghan Chun, Bonghwan Kim

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Keywords: Strider, 3D Printing machine, Microprocessor

Water striders are one of the most interesting and enjoyable aquatic creatures to observe. Water strider is slender, dark colored, and generally more than 5 mm (0.2 inch) long. Water strider is also called pond skater or skimmer and can be often seen running or skating in groups over the surface of a pond or stream. Water striders legs are covered in thousands of microscopic hairs scored with tiny groves. These groves trap air, increasing water resistance of the water striders legs and overall buoyancy of the insect. The water striders legs are so buoyant they can support fifteen times the insects weight without sinking. Even in a rainstorm, or in waves, the strider stays afloat. These organisms have attracted attention in recent years because they have many advantages such as reducing resistance when walking on the water, not falling into water, and moving quickly. Especially, the analysis of the superhydrophobic structure of the water strider legs and the research for realizing it are proceeding most actively. The purpose of this study is to make a biomimetic water strider robot with legs of superhydrophobic structure. To do this, we design and make a body of water strider robot with 3D printing machine. In order to be capable of buoyancy above the calculated weight, the legs are formed into various shapes by using 3D printing machine. A superhydrophobic coating is applied to legs to compare the bearing capacity against water surface. Finally, we attach circuits, driving motors, and microprocessor and then observe the movement of the water strider robot on the water surface.

TRACK B

***BUSINESS ECONOMICS, SOCIAL SCIENCES AND
HUMANITIES***

Effect of Message on Coasters and Social Density on Increasing Revenue: A Field Experiment in a Bar

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Keywords: Hustle-Bustle, Encouraging, Social density

This study aims to explore a sensory marketing strategy in a real bar setting using a visual cue, applying different types of coasters that will be placed under beverages ordered and tests if coasters with consumption encouraging comments can increase the sales. Considering a desirable atmosphere at a bar should be fun, elevated, or hustle-bustle, this study also tests the role of social density as an important element to encourage customers to consume more along with providing fun coasters. Consequently, the purpose of this study is 1) to examine single effect for a specific coaster and social density, and 2) to test if there is any interaction effect between the two. The field experiment will be conducted with a 2 x 2 (two types of coasters and two levels of social density) between-subjects design. Data including POS data will be analyzed through Ordinary Least Squares. The current study will contribute to the sensory marketing literature as it uses field settings and examining the interaction between vision and spatial concept for the first time. The findings would also provide managerial implications emphasizing the importance of careful designing and implementing sensory marketing strategies can increase sales in a cost-effective way in a service environment.

Preliminary Study of Elderly Neglect and Development of Screening Instrument for Hospitalized Community-dwelling Older Adults

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National Cheng Kung University, Taiwan
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Keywords: Elderly, Neglect, Screening, Parameter

Neglect is one of the common forms of elder abuse. Compared to the elderly without neglect, the mortality rate is two to three times higher. Neglect is a risk factor of disability and results in higher readmission rates, earlier screening and interventions of neglect is necessary to conduct. Due to the characteristics of social isolation among the frail elderly, it is difficult to conduct screening at home or in the community. Therefore, medical facilities might be the only connection to the outside world for the elderly. Currently, the issue of neglect has not caught much attention at the medical facilities, and there is no screening tool available. Because the presentations of neglect are easily confused with other conditions, it is often treated as the symptoms of common diseases. This study aims: (1) to develop a screening tool of neglect applicable in medical facilities; (2) to understand the percentage of neglect among the hospitalized community-dwelling elderly assessed by the screening tool; and (3) to investigate the signs and related factors of neglect.

Experimental Discussion about the Influence of the Proficiency TANKENDO on the foot Posture

^{1*} Maki Nakamura,² Maki NakamuraKiyoshi Hoshino

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Keywords: Tankendo, Foot posture, Favorite jump distance, width between right and left feet, temporal and spatial timing of attacking an opponent; correlation analysis

In material-art plays using a weapon, the length and weight of the used weapon determine the timing of attacking the opponent and playing strategies, which may be in turn reflected on the body posture and foot posture of a player. The objective of this study is to analyze the features of the food posture of a skilled player in Tankendo, in which players play using a short and light bamboo knife-like sword in order to consider an effective playing strategy. In our experiment, the subjects were asked to take the foot posture at the temporal and spatial timing kept to measure and quantify kinematic feature quantities, weight distribution between both the feet placed in the front and rear, respectively and favorite jump distance of them, In addition questionnaire forms were used to record and quantify their physical constitutions and favorite jump distances. Then, one-to-one correlation analysis was conducted among all the feature values. Fifteen subjects, who have an experience in any of three-types of plays, Tankendo, Tankendo + Jukendo and Tankendo + Kendo, were included in this study. The result of the analysis demonstrated that a strong negative correlation was observed between the number of years of experience in Tankendo and the favorite jump distance. However, no significant correlation was observed among the feature quantities of foot posture. Similarly, a strong negative correlation was observed between the number of years of experience in Jukendo and favorite jump distance. On the other hand, in case of Kendo, a strong negative correlation was observed between the number of years of experience in Kendo and the width between the feet placed on the right and left sides. A series of results obtained from the study suggests that in Tankendo and Jukendo, players have such a tendency that they first would take a position near the opponent and then jump there up to strike the opponent. In contrast, in case of Kendo focusing on a thrusting technique, such a tendency was observed that with a narrow width between both the feet, players stroke their opponent so that speedy footwork might be achieved, despite of easily losing body balance.

UP COMING EVENTS

You can find the details regarding our upcoming events by following below:

<http://esrdb.com/irestm/>

<http://http://esrdb.com/citas/>

<http://http://esrdb.com/aecit/>

<http://http://esrdb.com/icta/>

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Vision

Invests in creation of 21st century engineers and discovery of technologies through transformational center-based research, research in education and inclusion, and research opportunities for students and teachers.

Mission

To increase the diversity of the scientific and engineering workforce by including all members of society, regardless of race, ethnicity, or gender, in all aspects of the centers' activities. Because ESRDBs play critical roles in academe by integrating research, education, diversity, outreach, and industrial collaboration.



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