

International Conference on
Engineering & Technology, Computer,
Basic & Applied Sciences

ECBA-2015

Volume 24 Issue 3

SINGAPORE

CONFERENCE PROCEEDINGS

BOOK OF ABSTRACTS ECBA-2015

**International Conference on
“Engineering & Technology, Computer, Basic & Applied
Science”
(ECBA-2015) Singapore**

Book of Abstracts Proceedings

**International Conference on
“ENGINEERING & TECHNOLOGY, COMPUTER, BASIC &
APPLIED SCIENCE”
(ECBA-2015)
Singapore**

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Proceedings of the International Conference on
“Engineering & Technology, Computer, Basic & Applied
Science
(ECBA-2015)”

ISBN: 978-969-670-050-0

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**International Conference on
“Engineering & Technology, Computer, Basic &
Applied Science at Singapore”**

Venue: Grand Pacific Hotel Singapore

ORGANIZING COMMITTEE

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PROGRAM COORDINATOR MESSAGE

Ms. Ani Wahyu

International Conference on Engineering & Technology, Computer, Basic & Applied Science” serves as platform that aims to help the scholarly community across nations to explore the critical role of multidisciplinary innovations for sustainability and growth of human societies. This conference provides opportunity to the academicians, practitioners, scientists, and scholars from across various disciplines to discuss avenues for interdisciplinary innovations and identify effective ways to address the challenges faced by our societies globally. The research ideas and studies that we received for this conference are very promising, unique, and impactful. I believe these studies have the potential to address key challenges in various sub-domains of social sciences and applied sciences.

I am really thankful to our honorable scientific and review committee for spending much of their time in reviewing the papers for this event. I am also thankful to all the participants for being here with us to create an environment of knowledge sharing and learning. We the scholars of this world belong to the elite educated class of this society and we owe a lot to return back to this society. Let’s break all the discriminating barriers and get free from all minor affiliations. Let’s contribute even a little or single step for betterment of society and welfare of humanity to bring prosperity, peace and harmony in this world. Stay blessed

Thank you.

Ms. Ani Wahyu

Program Coordinator

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ECBA-2015

CONFERENCE PROGRAM

DAY 01 Thursday (December 17, 2015)

Welcome Reception & Registration

08:30– 9:00 am

Opening Ceremony (09:30 – 10:00 am)

Venue: Room 1

09:00 – 9:20 am	Introduction of Participants
09:20 – 9:30 am	Welcome Remarks – Felicia Chong –Conference Chair Academic Fora
09:30 – 09.45 am	Group Photo Session

Grand Networking Session and Tea Break (09:45– 10:00 am)



DAY 01 Thursday (December 17, 2015)

Session 1 (10:00 am – 12:00 pm)

Venue: Room 1

Session Chair: Alkhalief, Adeeb Abdullah

Track A: Business Management and Economics Studies

BCS-1215-114	Brand Extension: An Overview of the Concept and Research	Chin-Chiung Kuo
BCS-1215-123	Methodology To Study Sustainable Competitive Advantages For Ecotourism Development Of Phu Quoc Island	Pham Huy Hoang
BCS-1215-128	Comparative Analysis of Display Position in Smart Car among Countries	Hoonsik Yoo
BCS-1215-132	Web-based Analytic Hierarchy Process(AHP) Assessment Model for Information Security Policy of Commercial Banks	ShinaaMing Wu
BCS-1215-140	Low Cost Airlines Operating In The Ghanaian Airspace	Charles Andoh
BCS-1215-117	The Extent of the Internal Control Disclosure, the Executive Compensation, and the Timeliness Financial Reporting (A Case Study at Manufacturing Companies Listed at The BEI Jakarta 2013)	Julianti Sjarief
ECS-1215-126	A Case Study on Product Development Strategy in Consumption Value Structures	Soo Ah Cho

Lunch Break (12:00 - 1:00pm)

DAY 01 Thursday (December 17, 2015)

Session 1 (10:00am – 12:00 pm)

Venue: Room 2

Session Chairs: Dr Paramanatham & Deni Yasmara

Track D: Medical, Medicine & Health Sciences

MCS-1215-102	Design and Evaluation of AR-Based Serious Games with Clinical Knowledge for Promoting Health Fitness	Liao, Min-Wen
MCS-1215-103	Mitochondrial ROS manage the LPS-induced pro-inflammatory response in microglia cells by controlling MAPK and NF- κ B pathways	Un-bin chae
MCS-1215-104	Iron overload induces neuronal death via mitochondrial fission through Drp1-S637 dependent manner in HT-22 cells	Donggil Lee
MCS-1215-105	Peroxiredoxin/JNK axis regulate Stemness during neurogenesis from Embryonic stem cells	Jungbae Seong
MCS-1215-106	Depletion of mitofusin 2 is related to amyloid beta-mediated mitochondrial fragmentation and Cdk5-induced oxidative stress in neuron cells	Mi Hye Kim
MCS-1215-107	Peroxiredoxin 5 prevents amyloid-beta oligomer-induced neuronal cell death by inhibiting ERK-Drp1-mediated mitochondrial fragmentation	Bokyung Kim
MCS-1215-111	The influence of the knowledge about young women's cervical cancer screening who are doing physical activities on the screening attitude	Yun-Hwa Ko

Lunch Break (12:00 - 1:00pm)

DAY 01 Thursday (December 17, 2015)

Session 2 (01:00 – 02:30 pm)

Venue: Room 1

Session Chair: Hoonsik Yoo

Track A: Business Management and Economics Studies

BCS-1215-126	Discussion: Diversity in Malaysia New Media Art	Suhana Nordin
BCS-1215-147A	Factors Affecting Consumers Decision to Purchase Vietgap Vegetable in Hanoi, Vietnam	Nhung Thi Thai
BCS-1215-103	Labour Legislation And Performance Of Small Enterprises In Gauteng Province of South Africa	Akhabue A Okharedia
BCS-1215-152	Education Inequality in Indonesia: Using Education Gini Index Measurement	Lilik Sugiharti
BCS-1215-153	Accelerating Economic Development Strategy Through Trade Sector Development In Surabaya City	Nurul Istifadah
BCS-1215-154	Technical efficiency and productivity growth: case of Indonesia's food and beverage manufacturing sector	Martha R Primanthi
ECS-1215-130	The Study on the Structural Changes of the Supplier Value Chain in the Convergence Industry	EunYoung Park

Tea Break (02:30 – 02:45pm)



DAY 01 Thursday (December 17, 2015)

Session 2 (01:00 – 02:30 pm)

Venue: Room 2

Session Chair: Tzu-Wei Lin

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

ECS-1215-120	Influence of Irradiance of a Dental Curing Unit on the Hardness of Light-Activated Resin Composites	Decky Joesiana Indrani
ECS-1215-124	Design and Evaluation of Secure Digitally Signing Solutions for Hospital Consents	Wei-Cheng Wei
ECS-1215-134	Development of Miniature Planar Spring for Electrodynamics Vibration Energy Harvesting using Extra Thin Printed Circuit Board	Gandi Sugandi
ECS-1215-128	Application two-stage clustering method selected core functions of business and Recruitment and promotion of research	Jiun-Yi Li
ECS-1215-112	Design and Implementation of a Secure Cloud Platform for Protecting and Managing Healthcare Medical Information	Bo Yu Huang
ECS-1215-135	YII Framework Security Implementation On Application Study Of Energy Efficiency	Dewi Rosmala

Tea Break (02:30 – 02:45pm)

DAY 01 Thursday (December 17, 2015)

Session 3 (02:45 – 04:00 pm)

Venue: Room 1

Session Chair: Pheni Chalid

Track C: Social Sciences & Humanities

BCS-1215-110	An examination of Students' Attitudes and Opinions Toward Showrooming	Pola B Gupta
BCS-1215-122	Accreditation of Study Programmes and its Problem in New Emerging Countries	Putriesti Mandasari
BCS-1215-129	Comparative and Competitive Challenges of Active Learning in Indonesian University: What and How to Fix it	Pheni Chalid
BCS-1215-138	The Effects of Using Creativity-based Learning on develop Ability of writing learning management plan based of Teacher Students	Siriporn Srichantha
BCS-1215-124	Failed state and Threats to Human Security	Prihandono Wibowo
BCS-1215-137	Education and poverty: Case of Sri Lanka	Jeyapraha Suresh
BCS-1215-144	Socioeconomic and Demographic Determinant of Fertility Rate in Eastern-Indonesia	Achmad Sja'fii

Closing Ceremony: 4:00 – 5:00 pm

DAY 01 Thursday (December 17, 2015)

Session 3 (02:45 – 04:00 pm)

Venue: Room 2

Session Chair: Sarala Joshi

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

ECS-1215-101	Application of WBS-RBS-OBS and ANP Methods in Engineering Project Risk Management	Jen-teng Tsai
ECS-1215-104	Optimizing ZnS Buffer Layer of Cu(In,Ga)Se ₂ Thin Film Solar Cell with Tri-Sodium Citrate	Jun Chul Shin
ECS-1215-107	Effect of Ag Thickness and Heat Treatment on the structure, electrical and optical properties of GZO/Ag/GZO Multilayer Films.	SungHee Cho
ECS-1215-108	Effects of Surface Texturing Size on the Screen Printed Si Solar Cell	Dae Sung Kim
ECS-1215-109	Federated Anonymous Identity Management for Cloud Computing	Tzu-Wei Lin
ECS-1215-115	GUI PID Self-tuning System for Quadcopters	Chiao Tzu Huang

Closing Ceremony: 4:00 – 5:00 pm

DAY 02 Friday (December 18, 2015)

City Tour and Shopping Day

All participants will be free to carry on their own tourism and shopping activities in Singapore is a free day for this purpose

LIST OF CONFERENCE ATTENDEES

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

Sr. No	Official ID	Name
1	BCS-1215-135A	Alkhaliel, Adeeb Abdullah
2	MCS-1215-109	Dr Paramanantham
3	BCS-1215-147	Dr. Kampanat Pensupar
4	MCS-1215-110A	Dong-Seok Lee
5	MCS-1215-102A	Chien-Lung, Hsu
6	MCS-1215-113A	Deni Yasmara
7	MCS-1215-114A	Sriyono



**TRACK A: ENGINEERING & TECHNOLOGY,
COMPUTER, BASIC & APPLIED SCIENCES**



Application of WBS-RBS-OBS and ANP Methods in Engineering Project Risk Management

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Abstract

With the increase of large scale engineering projects, risk management in such projects are inevitably becoming crucial in their success. This study intends to develop methods to manage engineering project risks. The goals of the methods are to 1. Identify potential factors which might lead to project risks; 2. Prioritize the significance of the identified potential factors; and lastly, construct a sequence of steps to prevent the risks from occurring. A number of methodologies are employed in the study: Work Breakdown Structure, (WBS), Risk Breakdown Structure (RBS), Organization Breakdown Structure (OBS) and Analytic Network Process (ANP). WBS enables the decomposition of an engineering project and helps the systematic expression of the entire project. In this study, a method based on RBS will be established to identify potential risk factors. Subsequently a method based on WBS will be developed to evaluate and arrange the risk factors in accordance with their estimated significance. A method based on OBS will then be constructed to assign related organization and manpower to prevent or eliminate the risks. In the meantime Analytic Network Process (ANP) is applied to compute the significance of risk in an engineering project in addition to WBS/RBS. Surveys will be conducted to accumulate expert input on potential risk factors. Weighted super matrix based on the surveys will be derived. In summary, this research develops a set of methods to evaluate, prevent and manage engineering projects' risks. It provides tools to identify and analyze potential risk factors. A case study is conducted to apply the methods developed. It shows that such methods are feasible in the aerodynamic component manufacturing company in Taiwan in the study.

Keywords: Project Risk Management, Work Breakdown Structure

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Optimizing ZnS Buffer Layer of Cu(In,Ga)Se₂ Thin Film Solar Cell with Tri-Sodium Citrate

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Abstract

CdS buffer layer has several disadvantages such as toxic material and less response of short wavelength than other materials due to the low band gap of 2.4 ~ 2.5 eV. In order to alternate CdS buffer layer, zinc sulfide (ZnS) thin films were prepared by chemical bath deposition (CBD) using the mixed aqueous solutions of zinc acetate, thiourea, ammonia. Tri-sodium citrate was used as the complexing agent. ZnS thin films were deposited on ITO glass substrates at 70°C. This work was performed in the thiourea molarity range of 0.2M~1M, ammonia solutions molarity range of 3M~7M and tri-sodium citrate molarity range of 0.05M~0.6M. The structural and optical characteristics of films were investigated by XRD, FE-SEM and UV/VIR Spectrometer. The molarity increase of tri-sodium citrate leads to an improvement of the uniformity of the ZnS thin films and decrease in the grain size. As a result, thiourea 1M and ammonia solution 3M has the best uniformity and high transmittance in the visible region. The band gap of ZnS was estimated to be about 3.8 eV with optimum conditions.

Keywords: CIGS Solar Cell, Buffer Layer, Chemical Bath Deposition, Zinc Sulfide

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Effect of Ag Thickness and Heat Treatment on the Structure, Electrical and Optical Properties of GZO/Ag/GZO Multilayer Films

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^{3,4} Dept. of Electronic Engineering, Korea National University of Transportation, Korea

Abstract

In this study, the GZO/Ag/GZO films were investigated as a high quality transparent conductive electrode. The GZO and Ag films were deposited by RF magnetron sputtering and electron beam evaporation at room temperature, respectively. The effects of Ag thickness and heat treatment on the structural, electrical and optical properties of these multilayer films were investigated. We inserted Ag of 10 ~ 20 nm between GZO films to improve electrical properties. A resistivity of $3.0 \times 10^{-5} \Omega\text{-cm}$ and an optical transmittance of 85.2% was obtained with Ag thickness of 16 nm. To improve optical properties, we annealed GZO/Ag/GZO films in the temperature range of 0 ~ 400 °C for 20 min in vacuum. It was possible to obtain GZO/Ag/GZO films having very low resistivity and high transmittance by heat treatment. An optical transmittance of 91.2% and a resistivity of $2.46 \times 10^{-5} \Omega\text{-cm}$ was obtained by the annealing temperature of 400 °C.

Keywords: GZO, Sputtering, electron beam evaporation, Multilayer, GZO, Heat Treatment

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Effects of Surface Texturing Size on the Screen Printed Si Solar Cell

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Abstract

Texturing of crystalline silicon has been adopted for the development of high efficiency crystalline silicon (c-Si) solar cells. Texturing is used in order to reduce the light reflectance of the silicon surface, increase the light trapping. In contrast, the solar cell textured by Ag-catalyzed etching exhibited the lowest efficiency of 12.7%. The solar cell with the nano-size textured surface, which showed the lowest surface reflectance, also had the lowest efficiency. This was due to the higher series resistance of the cell textured on the nano-sized scale. The cause of the higher series resistance was found to be poor contact between the front electrode and the Si surface due to the particle size of the silver paste. \square m) and Ag catalyzed etching (texturing size of about 90 nm) have been utilized. The reflectances of the textured surfaces ranged from 10.53% (KOH chemical etching) to 2.17% (Ag catalyzed etching) at wavelengths between 400 and 1000 nm. However, Among the three different texturing sizes of the solar cells, the solar cells textured by KOH chemical etching showed the best efficiency of 17.8%. It exhibited the Jsc of 37.28 mA/cm², Voc of 0.62 V, FF of 77.5 %, and Rs of 0.556 \square m), reactive ion etching (texturing size of about 0.2 \square m) In this paper, we report an investigation into the effects of the texturing size of silicon surface on the efficiency of a screen-printed Si solar cell. To figure out the effect, various texturing techniques of c-Si solar cells such as KOH (texturing size of about 3

Keywords: Texturing, Reflectance, Screen Printing, Crystalline Si Solar Cell

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Federated Anonymous Identity Management For Cloud Computing

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³Graduate Institute of Business and Management, Chang Gung University

⁴Department of Information Services, Academia Sinica

Abstract

In this paper, we proposed a federated identity management for cloud computing. Cloud service providers can forge an alliance via the agreement we proposed, and users can use all providers' services in the alliance. The maintenance and management of the alliance is be in charge by the third-party cloud trust center. On the other hand, we also provide mutual authentication for verifying users' and providers' identity legitimacy. In addition, in the cloud computing environment, users' personal data is stored in different storages of providers and will be difficult to guarantee that the data is not being disclosed or stolen. This paper is based on cloud security guideline by CSA that users are anonymous in cloud computing environment, and it can decrease the probability of disclosing data about personal privacy. Our scheme has some features below. (1) Federated identity management can make users log into cloud services through single sign-on. (2) Using mutual authentication to verify each other's identity legitimacy. (3) It can decrease the probability of disclosing and being stolen of personal data by accessing service anonymously. (4) The issuer can trace user's real identity.

Keyword: Federated Identity Management, ID-based, Mutual Authentication, Anonymous

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GUI PID Self-Tuning System for Quadcopters

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Abstract

In this paper, we developed a PID auto-tuning system to optimize the attitude stability of the quadcopter. The tests utilized quadcopter with 18 inch propellers, first we obtained the data from MAVLink by LabVIEW, then designed an algorithm to control the throttle by the reacting of attitude in order to auto-tune the PID parameters. Self-tuning method will search the optimized PID parameters through the reacting of attitude in real time. The self-tuning system could extend to other quadcopters for future developing and the LabVIEW GUI facilitated the tuning progress.

Keywords: Quadcopter, PID, Self-Tuning

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Influence of Irradiance of A Dental Curing Unit on the Hardness of Light-Activated Resin Composites

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Abstract

For polymerizing restorative resin composites, the previous research has constructed a dental curing unit with the use of a high power LED to produce high light irradiance and a pulse width modulation to reduce associated light temperature within 20 seconds exposure time. A prototype dental curing unit was constructed, based on the previous study, mainly using an ATmega328 microcontroller with a pulse-width modulation designed with two modes to produce 10 seconds light exposure. The prototype also contained an LED driver and a light guide located at the front. The prototype curing unit was then used to polymerize a light-activated resin composites that were already packed in a stainless steel mold (diameter of 6 mm; depth of 2 mm). The data were analyzed using One-Way ANOVA and LSD test. Results showed that the prototype curing unit has produced a lower and a higher irradiance level of $900 \pm 10 \text{ mW/m}^2$ and $1000 \pm 10 \text{ mW/m}^2$, as expected based on the PWM modes, whereas the off-the-shelf curing unit was noted to have 900 mW/cm^2 . These values were significantly different ($p < 0.05$) when compared to those of resin composites polymerized using the irradiance of 1000 mW/cm^2 . However, all microhardness of the resin composites were within the standard range for resin composite tested. The prototype curing unit having the irradiance of 900 and 1000 mW/cm^2 with time exposure time of ten seconds can be used to polymerize resin composites.

Keywords: Curing Unit, Pulse-Width Modulation, Irradiance, Resin Composite, Microhardness

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Design and Evaluation of Secure Digitally Signing Solutions for Hospital Consents

Chien-Lung Hsu^{1*}, Chung-Mei Fan², Wei-Cheng Wei³

Chang Gung University, Taiwan

Abstract

Electronic medical record systems have been developed and used for many years, but people still use paper consents in hospitals. There are several problems of using paper consents, such as inconsistent version, illegible handwriting, difficult for reviewing and saving, etc. We investigated many cases from related international literature and standards, including ISO/IEC 19794:2013 and ISO/IEC 24761:2009. We inventoried and classified the paper consents used in hospitals and discussed the related important factors of digitally signing. After doing what we mentioned previously, we analyzed several signing procedures and situations to make a design of solution. Finally, we designed five feasible solutions which include certificate and non-certificate mechanisms, and we adopted TELOS (technical, economic, law, operational and security) method to evaluate that if these solutions meet the needs of hospitals.

Keywords: Design, Hospital consents

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Development of Miniature Planar Spring for Electrodynamics Vibration Energy Harvesting Using Extra Thin Printed Circuit Board

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Institute of Sciences (PPET-LIPI), Bandung – Indonesia

Abstract

This paper presents the design, fabrication and characterization of printed circuit board (PCB) based planar spring as mechanical resonator component for electrodynamic vibration energy harvesting. This harvester converts the ambient vibrating energy into electrical energy based on the electromagnetic conversion mechanism. There are three main components in this harvester namely; coil, magnet permanent and mechanical resonator. The resonator is an important part to produce power efficiency, therefore the resonant frequency behavior of planar spring has been focused investigation. In this study, we compared two different planar spring components, PCB-based planar spring with and without copper layer. PCB planar spring with copper layer produce resonant frequency in 53 Hz, while planar spring without copper layer in 34 Hz. Although planar spring without copper layer shows low frequency resonant compared to with copper layer but this component cannot resist in vibration input as high as for first planar spring.

Keywords: Vibration Energy Harvesting, Electrodynamic Transducer, PCB-Based

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Application Two-Stage Clustering Method Selected Core Functions of Business and Recruitment and Promotion of Research

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Management,

⁴Department of Computer Science and Information Engineering Providence
University

Abstract

Construction of functions in an enterprise or organization to be a trend .In the future , enterprise opt personnel will be a standard based on functions. Use studying Integrated Competency and Application Platform(ICAP) of Labour and knowledge development not only construct domestic functional development system but also improve labor quality and performance furthermore strengthen domestic and international exchanges and activities of labour functions and development also improve the quality of all walks of life to establish labor and personnel training development. This program through the company's every highest level competent and corporate functions counsellor to set important company functions. The internal company to get assessment score and then get that is more significant differences than the other project in assessing information. That divided into executive-level, expert level and new level of functions that have. And then use confirmatory compare and the correctness of the information, two-stage clustering method (that is, "self-organizing map (SOM and K-means algorithm)" by Back propagation Neural. Finally, find five items have ability important functions at different levels between groups .So it accomplish research's analysis of the selected target and verify relatively results of comparative rating scores. To improve enterprise's basis effectively when it opt the personnel or promotion.

Keywords: Clustering, Recruitment, Promotion

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Design and Implementation of A Secure Cloud Platform for Protecting and Managing Healthcare Medical Information

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Taiwan

Abstract

In present medical environment, hospitals purchase physiological measuring devices from different manufacturers because of multiple factors. However, protocols of physiological measuring devices are variety and are insecure for protect healthcare medical information. This study aims to design and implement a mobile application to measure and collect healthcare medical information from variety of medical devices which meet ISO/IEEE 11073 or Generic Attribute Profile (GATT) standards, and a cloud platform to manage such data sent from the proposed healthcare mobile application for healthcare. Since the healthcare medical information is sensitive for users, this study further designs a secure cryptographic protocol to protect the healthcare medical information from being disclosed. Contributions of this study are the cloud platform is an integration one to collect and manage healthcare medical information from variety of medical devices. (ii) A cryptographic key management mechanism is proposed for cryptographic protocols used in the healthcare systems. (iii) The healthcare medical information is transmitted in a secure channel from being disclosed. (iv) A secure and efficient password-based user authentication protocol with key agreement is proposed.

Keywords: Physiological measurement, ISO/IEEE 11073, GATT, Cryptographic protocols

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Yii Framework Security Implementation on Application Study of Energy Efficiency

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Bandung, Indonesia

Abstract

A study on Energy Efficiency are soil energy infrastructure planning with observing aspects of natural sources, natural sources processing, energy supplying, energy demand each sector, and energy distributing sector. In this research, already developed application which stored important data which mean inflict application owner, such as National Energy Corporation Criminal act using internet (cyber crime) domination by deception case using internet, and data looting. In 2011 cyber crime reach 520 cases and 2012 reach 600 cases in entire Indonesia. There are three types of cyber crime such as application side, infrastructure side, and server side. In this research kind of attacks will be research are XSRF, XSS, and SQL injection. Yii are website general programming framework that can be use for developing all kind of application website. Yii have features can be settle of attack such as Cross site request forgery (XSRF), Cross site script (XSS), and SQL Injection. Main target this application is to help National Energy Corporation to study on energy efficiency. Implementation YII Framework in a study on energy efficiency application fulfil the aspects of security, such as XSRF attack, XSS attack, and SQL Injection.

Keywords: XSRF, XSS, SQL injection, Yii framework, A study on Energy Efficiency

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