

Applying Kansei Words to Japanese Bread Store

Indri Hapsari, Linda H. Gunawan, Rendy Handoko

Industrial Engineering - Universitas Surabaya, Jl. Raya Kalirungkut, Surabaya, Indonesia
indri@ubaya.ac.id

ABSTRACT

Indonesia's consumers choose to eat bread rather than rice is because of lifestyle, instead of substituting rice. In Surabaya, there are some stores selling Japanese bread, however their stores' design is not been influenced by Japanese authentic style. The purpose of this paper is to discover the importance of Japanese bread store. A structured questionnaire has been developed to collect the data. Kansei words were used to identify what conditions the consumers need. Result of the study shows that consumers demand 'interesting store', 'suitable' and 'cleanliness' as the important factors. As a result, these Kansei Words will be converted into the store's physical design.

Keywords: Kansei Words, Store Design, Japanese

1. Introduction

The activity of shopping for this kind of public has moved on, for example, from 1945 when it was mainly buying a product or a commodity, to the 1960s and 1970s when the focus was on services, to the latter part of the 1990s when shopping was about going out and obtaining an experience (Coleman, 2006). Now, shopping is about transformation, or collecting a thought – about collecting aspects of a lifestyle or things that contribute to a person's mental well-being. Shopping expeditions are continuing to progress from providing experiences to transformations, for instance, by incorporating opportunities for the visitor to participate in a civic or cultural activity. Some of these activities would traditionally be found in historic town or city centers, which favorably suit the trend towards new integrated urban shopping environments in town center locations.

The activity of shopping now contains aspects of knowledge-giving, teaching and mind-changing that were previously remote or unconnected to it. The challenge for designers is how to make a shopping environment a memorable experience. This applies both to the shopping environment and to the individual units. Examples of shops providing knowledge have already been developed in New York and Tokyo, where goods are displayed as artifacts in contemporary environments, and where there is plenty of space for shoppers to walk around and look at the goods from different angles. There might also be informative explanations of the manufacturing process or the technologies involved, as in Nike Town and Sony stores. In these sorts of shops the purchasing is carried out in a separate dedicated area.

The challenge is how to bring this knowledge-making experience to a shopping environment. Shopping places will need to exploit this and make the visit memorable, even to the extent that the shopping trip becomes more important than the purchase. It will need to be a fulfilling experience and it should provide something that is unique and different to visiting another place. It should have a sense of place and this will require the architecture to be of sufficiently high standard to be memorable and fulfilling.

The quality of the environment of shopping amenities from arrival to departure has been improved, and will continue to be so, because people will vote with their feet and shop elsewhere if it is not right. As part of a shopping trip, attractive shopping places can double up to provide a civic destination space, which forms the hub to a center or town. The opportunity for creating a civic destination can be one of the most rewarding aspects of being involved in the design of retail environments.

The store's design can be assume same with product design. There are two different streams in product development, which are called product out and market in (Nagamachi, 2011). The former implies a philosophy of product development based on technology developed in a company or based on the company strategy, without attention to customers' wants and needs. Many inventions have merged from this approach. Another approach to product development is to focus on customer wants and needs. Nowadays people have many goods at home, and it is not easy to stimulate their purchasing behavior. But customer – oriented product development will be successful in selling a new product because the market-in philosophy leads to the development of a product that fits customers' feelings and emotions.

Surabaya as one of the big cities in Indonesia, offers many interesting stores to explore. Nowadays there are some modern bread stores in Surabaya, which the store chains from Jakarta either original from Surabaya. Japanese

bread store is one of the examples, since Surabaya's people are open-minded, they can easily adapt to the culinaries from countries, such as bread.

The weakness of existing bread store is about the taste. It is difficult to differentiate amongst all bread stores. To attract customers, the store must be attractive and convenience for the customers, so they will buy more and often. Of course, the taste must improve too. Various tasty bread, with a unique shape and warm fresh baked become the standard of every Japanese bread store. For the store design, it needs Kansei to interpret the psychological feeling of Surabaya's people about Japan. This is why Kansei-oriented development is needed in R&D activities because its orientation to human minds. This is why it is called human-oriented product development. Considering Kansei as a tool to understand customer's needs, will result in a good store design. (Nagamachi, 2011). This goal of this study is to answer the following questions: how is the design of Japanese bread's store that is transformed from Kansei Words of the customers?

2. Background

A good store design should be like a good story (Weitz and Levy, 2007). Every story has a beginning, middle, and end, usually in that order. The entrance sets up the story. It creates expectations and contains promises. A good entrance should entice, hint and tease. There should be mystery, inside the store comes the middle of the story. It should start slow. Customers need a few seconds to orient themselves after the entrance. A single message has a far greater chance of sticking than do a dozen products cluttering the way. Customers need to be led on a journey throughout the store. Using light, motion, and visuals, takes customers down a path of discovery. There should, for instance, be visual destinations at end of a long aisle. Finally, the cash wrap or checkout counter is the story's climatic finale. It is where retailers can convey subtle messaging without hard selling.

The present study dealt with the effects store atmosphere has on customers' satisfaction and purchasing behavior talking mood state as an intervening variable (Spies et al. 1997). As predicted, it could be shown that customers' mood improved with pleasant but deteriorated with less pleasant store to visit the café/restaurant. Atmospherics is the area that has received the most attention and can be described as relating to factors in the store environment that can be designed or manipulated in order to create certain emotional and behavioral responses in the consumer. Definitions of store atmosphere varies from exclusively including subtle aspects such as music, scents, and colors to also including aspects of the physical environment that constitutes the store, such as for example store decorations (Hoffman and Turley, 2002 in Bäckström and Johansson, 2006). Hoffman and Turley give a holistic view of the concept. Atmospheric are composed of both tangible elements (the building, carpeting, fixtures, point-of purchase decorations) and intangible elements (colors, music, temperature, scents) that comprise service experiences. The authors argue that positive store atmosphere is crucial in order to offer experiences rather than just products and services. They suggest that atmosphere is of great importance specifically in a service context due to its abstract nature. By consistently seeking to control and add substance to the atmosphere of retail stores, retailers may influence consumers when they are evaluating what type of service and what type of products are on offer. Research on atmospherics has been conclude to influence a wide variety of consumer behaviors (Turley and Milliman, 2000 in Bäckström and Johansson, 2006). It has been shown that a positive atmosphere can lead to approach behaviors, which implies that consumers stay longer in the store, spends more money or that the propensity for impulse buying increases. While atmospherics is commonly used to describe the rather intangible aspects of the store environment, store design is normally applied to signify the more tangible elements present in the interior store environment. Design has example to do with the overall style that is expressed through the store's interior decoration and architecture and may be used to reinforce the values associated with a specific brand name. Discussions on store design typically relate to store layout and display. Display is often described as the design of the way in which articles are presented in the store to facilitate and stimulate consumer purchasing behavior. When store layout is concern, many argue that positive experiences may arise if the store makes it easy for the consumers to find the product vary are looking for, when the layout of the store seems logical, when there are sufficient signs, etc.

Designing affective meaning into commercial products is not a new idea. In fact, many industrial companies have done this for a long time. Methods have been developed and applied in product development such as quality function deployment (QFD), brainstorming techniques, etc., aiming to integrate affective meaning into new products (Schiffenstein and Hekkert, 2008). Other methods gather, rate, and assemble the emotions the users have of certain products (e.g. focus groups, interview techniques, survey techniques, etc).

The role product designers play in using those techniques is to merge together the customers' and other stakeholders' demands, (new) technical solutions, and their own ideas into new innovative products. In most companies this is done based on the experience and preferences of the product development staff and their interpretations of the customers' desires. Often this process is considered more of an art than engineering or science. This is because no rules of 'how to do it' are documented and the result is not falsifiable. Worse, the product might be and economical failure if

this linkage is done based in wrong assumptions of the customers' desires. On the other hand, a number of products not selling well were later considered way before their time. This shows that the product developers failed to properly interpret the voice of the customers, rather than that technical specifications were incorrect.

In order to avoid such failures, many companies seek for more reliable methods to grasp and translate the customers' affective understanding into concrete product solutions. Kansei engineering is a kind of technology that translates the customer's feeling into design specifications. The R&D team grasps the customer's feeling, namely the Kansei; analyzes the Kansei data using psychological, ergonomic, medical, or engineering methods; and designs the new product based on the analyzed information. Kansei/affective engineering is a technological and engineering process from Kansei data to design specifications (Nagamachi,2011). Measuring the Kansei is not easy and will always build on a subjective basis, since the measurement methods are dependant on the reactions of the humans. However, Japanese researchers, with Mitsuo Nagamachi as a forerunner, invented a method in the 1970s which was able to grasp the Kansei and translate it into concrete product design solutions (Nagamachi, 1997 in Schifferstein and Hekkert, 2008). In the beginning it was called Emotional Engineering, as one of the first companies, Mazda Motor Corporation, applied the new methodology in their product development in the early 1980s. In a speech delivered in 1986 by Mazda's Chairman in Detroit, he referred to the methodology as ' Kansei Engineering' (Nagasawa, 2002) and coined the new methodology.

Kansei Engineering started with humble steps, but today at least six different types exist. Nagamachi (1997) collected all these applications on Kansei Engineering, grouped them according to the tools included, and task areas. From these groups he identified so-called types of Kansei Engineering:

1. Type I: Category Classification. A product strategy and a market segment is identified and developed into a tree structure identifying the customer's affective needs. These affective needs or Kansei are then connected manually to product properties.
2. Type II: Kansei Engineering System. Type II is often a computer-aided system using interference engines and Kansei databases. The connections between Kansei and product properties are made using mathematical statically tools.
3. Type III: Hybrid Kansei Engineering System. Type III is also a computer database system similar to the second type. However, it can not only suggest suitable product properties from an intended Kansei, but also predict the Kansei that product properties elicit, e.g. by using a prototype or mock up.
4. Type IV: Kansei Engineering Modeling. The fourth type of Kansei Engineering focuses on building mathematical prediction models. These models are more strongly validated than the ones in the Types II and III.
5. Type V: Virtual Kansei Engineering. Kansei Engineering type V integrates Virtual Reality (VR) techniques with standard data collection systems. This type replaces the presentation of real products with VR representations.
6. Type VI: Collaborative Kansei Engineering Designing. In Type VI, the Kansei database is accessible via Internet. Such design supports group work and concurrent engineering.

The process of Kansei should include the following scheme: First, a Kansei engineer should think, who are the customers? Second, what do they want and need; that is, what is their Kansei? Third, the Kansei engineer should consider how to evaluate the customers' Kansei. After the Kansei evaluation, the engineer should analyze the Kansei data using statistical analysis or psychophysiological measurement, and then transfer the analyzed data to the design domain. The Kansei Words are adjectives, nouns, or verbs, and sometimes sentences. Open, cold, enjoyable, warm, simple, relaxing, clean, rude, easy, complicated, interesting, complex and so forth are all Kansei Words (www.kansei.ac.id). A Kansei Word is a word describing the product domain. Often these words are adjectives, but other grammatical forms are possible. In order to get a complete selection of words all available sources have to be used, even if the words emerging seem to be similar or the same. Suitable sources can be magazines, pertinent literature, manuals, experts, experienced users, related Kansei studies, etc. It is recommended that we first collect many Kansei words and then reduce these to a small number of very important and relevant words. To develop the product, it is needed to explain interpretation of the data to a designer. The Kansei/affective engineer should explain the analyzed data and the interpretation to the designer. Sometimes several suggestions are derived form data analysis. The engineer has to motivate and stimulate the designer to understand the final data interpretation and to draw out the designer's new design idea of emotional design beyond the data. Finally, the Kansei engineer should evaluate whether the newly designed product will fit the customer's emotion and whether it reveals the emotional design. If not, she motivates the designer to a better design idea.

3. Methods

Based on the preliminary survey, it can be concluded that Surabaya's people have chosen bread for food, besides rice. Currently there are some modern bread stores with the same concept. Therefore, it is necessary to develop a unique bread store design to compete with existing stores. We choose to develop Japanese Bread Store, because Japanese bread

is famous of its uniqueness taste and health. The store design must have Japanese accent and style in order to attract the consumers and get a positive experience.

Two questionnaires were distributed to the respondents. The first questionnaire is an open questionnaire; it was distributed to 50 respondents who are interested in Japanese bread. The result can be seen in Table 1.

Table 1. Questionnaire Results

1. Age		6. Store Design Expectation (some respondents)	
< 20 year	38%	Sakura Park	8
20 year	18%	Japan Culture Festival	8
> 20 year	44%	Japan Anime	1
2. Gender		Living room	1
Male	28%	Mountain	1
Female	72%	Japan accessories like kimono, doll and greet in Japanese	6
3. Occupation		Drinking tea ceremony	1
Student	2%	Clean, convenience with music	1
Univ. Student	78%	7. Important Factors	
Unemployed	4%	Convenience	21%
Employee	16%	Clean	23%
4. Other Bread Store		Cold	17%
Bread Talk	57,3%	Music	13%
Igor's Pastry	19,5%	Television	4,3%
Komugi	6,1%	Service	17%
Bread Life	1,22%	Decoration	0,6%
Bread Story	2,44%	Taste	1,8%
Holland Bakery	3,66%	Design	1,2%
Frollino	2,44%	8. Kansei Words (2 nd questionnaire)	
Savory	1,22%	<i>Suitable</i>	25%
Eaton	1,22%	<i>Clean</i>	21%
J-co	3,66%	<i>Cold</i>	9,9%
Suzana Bakery	1,22%	<i>Enjoyable</i>	9,3%
5. Japanese Taste		<i>Interesting</i>	27%
Wasabi	35%	<i>Warm</i>	1%
Sashimi	28%	<i>Elegant</i>	6,4%
Red Bean	13%		
Yakishoba Noodle	17%		
Dorayaki	1,7%		
Melon	1,7%		
Chicken yakiniku	1,7%		
Seaweed (nori)	1,7%		

After the observations against the competitors, we found out that there are 2-3 employees who work at cashier and clean the store, 3-6 chefs in the kitchen and one security guard in the store's yard to manage the parking. Therefore, the store must be at least 40-m2 space. From the first questionnaire, we converted the important factor to the Kansei Words, then we distributed 50 questionnaires to understand which Kansei Words can be the indication of consumers' perception about Japanese store design. The result can be seen in Table 1 number 8.

4. Model

Kansei domain is the separation of Kansei words into some levels and ended with the senses.

- Level 0, words in this level can represent all the Kansei Words.
- Level 1, we decided to use the five biggest options such as *interesting*, *suitable*, *clean*, *cold* and *enjoyable*.
- Level 2, transformation from Kansei Words to the physical store design. For example is temperature.
- The physical feature from the previous level will affect senses. For example, the amount of Air Conditioning will affect our sense to feel the desired temperature.
- *Physical domain* is a conversion from Kansei words to the physical store design, for example, temperature must be keep between 16-19° C.

For more information about Kansei mapping, we can see in Figure 1.

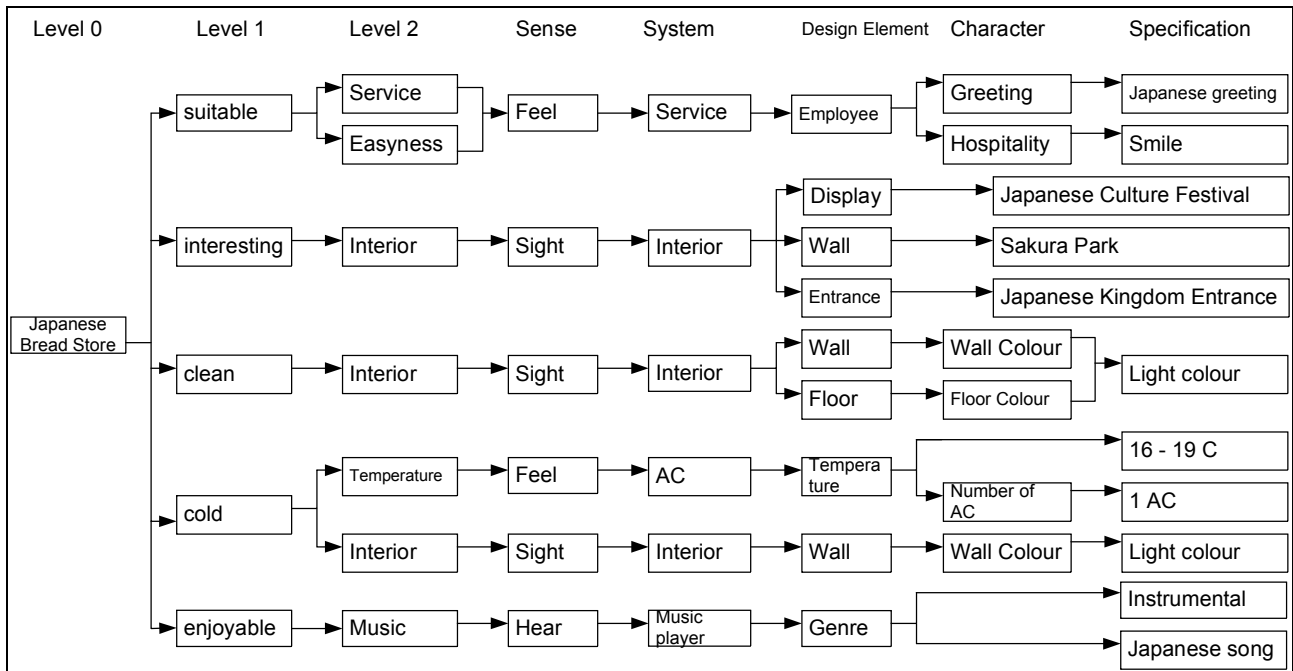


Figure 1. Kansei Domain & Physical Domain

5. Store Design

The store's design is based on customers' needs, such as Sakura Park, Japanese Culture Festival and Japanese kingdom. Sakura Park become the store's background in figure 2.a, Japanese culture festival can be adapted by using the small stands, which are always there when the festival is held in Figure 2.b. While store entrance is like a kingdom entrance in figure 2.c. There is Japanese kingdom well inside the store, which is a common in Japanese temples.

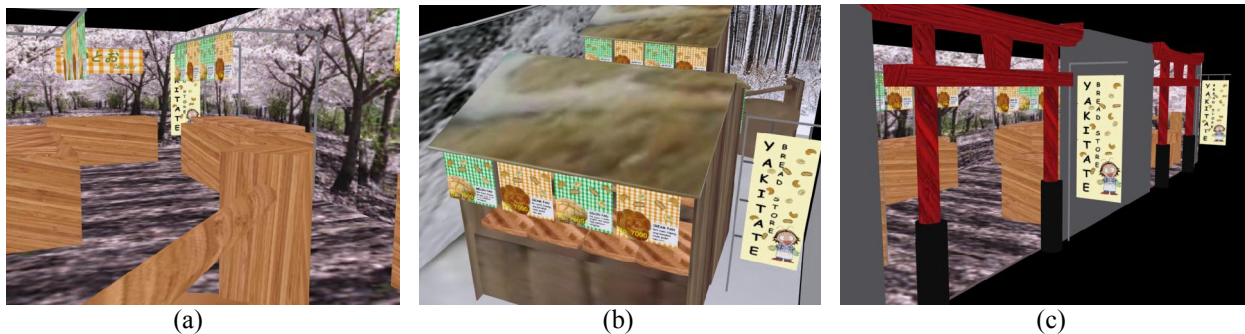


Figure 2. Store design from any angle

The Sakura Park is more sophisticated than the others to give a sense of the Sakura Park. Besides designing the store, we also designed a 54cm x 134 cm banner. Banner will be put on inside and outside the store. The installation will use the Japanese style. Display and cashier table will follow the stand's concept. For the complimentary design, it is needed to design the display with the pictures, ingredients, besides the existing ones like price and bread's name. The bread tray need to be a specialized design too in order to attract customers. After payment, to pack the bread we need an unique wrap. And the last is the kimono, must be adopted from Japanese style without disturbing the flexible movement of the waitress. The bread taste is very unique to follow respondents' needs, such as Melon-pan, Cream-pan, An-pan, Taiyaki, Turtle Japan, Nori-pan, Sui-han Japan, Wasabi dinner bread, Castella Japan, and Microwave Japan.

After the three dimensional store's design has done, we interviewed some people to know how they feel about this new design. They are student, employee and university student. These were their comments:

- Hengli: Design is very interesting; I wish this design will be implemented.
- Yenny : This is a cute design, I want to get into this store.
- Catherine : I feel like in the middle of Sakura Park, I want to that store

6. Conclusion

7. Reference

[1] A. S. Malik, O. Boyko, N. Atkar and W. F. Young, "A Comparative Study of MR Imaging Profile of Titanium Pedicle Screws," *Acta Radiologica*, Vol. 42, No. 3, 2001, pp. 291-293.

Tirtobisono, Yan, *Bahasa Jepang hanya 1 hari*, Apollo, Surabaya, 2001

Taniguchi, Goro, *Kamus Standar Bahasa Jepang-Indonesia*, Dian Rakyat, Jakarta, 1999

www.kansei.ac.id



THE PROCEEDING

Grha ITS, December 6, 2011



3rd

APTECS

2011

International Seminar on Applied Technology, Science, and Arts



“Resources Optimization Based on Science and Technology for Nations’ Self-Reliance ”

IPTEK

The Journal for Technology and Science



The UNIVERSITY
of NEWCASTLE
AUSTRALIA



UNIVERSITI
TEKNOLOGI
PETRONAS



LPPM - ITS



PROCEEDING

**3rd INTERNATIONAL SEMINAR
ON APPLIED TECHNOLOGY, SCIENCE AND ARTS -
APTECS 2011**

THEME

**RESOURCES OPTIMIZATION BASED ON
SCIENCE AND TECHNOLOGY FOR NATIONS'
SELF-RELIANCE**

GRHA SEPULUH NOPEMBER, 6 December 2011

**Organized by :
Institute of Research and Public Services (LPPM)
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
2011**

**PROCEEDING OF INTERNATIONAL SEMINAR
ON APPLIED TECHNOLOGY, SCIENCE, AND
ARTS
3rd APTECS 2011**

Edited by APTECS TEAM

Copyright © 2011 and published by Lembaga Penelitian dan Pengabdian kepada Masyarakat (LPPM), Institut Teknologi Sepuluh Nopember. *All rights reserved. No part of this book may be reproduced in any form, nor may it be stored in a retrieval system or transmitted in any form, without written permission from the publisher.*

ISSN 2086-1931

3rd INTERNATIONAL SEMINAR ON APPLIED TECHNOLOGY, SCIENCE, AND ARTS (APTECS 2011)

HONORARY COMMITTEE

PROF. TRIYOGI YUWONO

PROF. I NYOMAN SUTANTRA

GENERAL CHAIRMAN

M. SIGIT DARMAWAN, PH.D.

TECHNICAL PROGRAM COMMITTEE

DR. AULIA SITI AISJAH, PROF. I KETUT ARIA PRIA UTAMA, PROF. IMAM ROBANDI, PROF. NOOR
ENDAH MOCHTAR, PROF. SARWOKO MANGKOEDIHARDJO, PROF. MAURIDHI HERY PURNOMO,
PROF. GAMANTYO HENDRANTORO, PROF. ADI SUPRIYANTO, PROF. DJATMIKO IHSANI,
PROF. SUTARDI, PROF. ALI ALTWAY, PROF. PERRY BURHAN, PROF. TRIWULAN,
PROF. ENDANG TITI SUNARTI, PROF. NUR IRIAWAN, PROF, DANIEL M. ROSYID, PROF. HAPPY RATNA,
PROF. UDI SUBEKTI, PROF. BASUKI WIDODO, DR. RIA ASIH ARYANI SOEMITRO,
DR. BAMBANG LELONO, DR. BAMBANG SAMPURNO, DR. A.A. MASROERI, DR. I MADE YULISTYA
NEGARA, DR. PRABOWO, DR. WAHYUDI, ENDAH WAHYUNI, PH.D, PROF. KHAIRURRIJAL (ITB),
PROF. HANGTUAH SALIM (ITB), PROF. RIZAL Z. TAMIM (ITB), PROF. BENYAMIN KUSUMOPUTRO
(UI), PROF. MOHAMMAD NASIKIN (UI), DR. THOMAS SRI WIDODO
(UGM), PROF. WAHYUDI BUDI SEDIAWAN (UGM), DIRAYAH HUSAIN, PH.D (UNHAS),
DR. ATHANASIVS P. BAYUSENO (UNDIP), PROF. BAMBANG PRAMUDONO (UNDIP),
RUKMI SARI HARTATI, PH.D (UDAYANA), DR. AGOES SOEGIANTO (UNAIR),
PROF. MARIMIN (IPB), DR. M. FADHIL B. NURUDDIN (UTP, MALAYSIA),
PROF. MARK G. STEWART (NEWCASTLE UNIV. AUSTRALIA),
PROF. CARLOS KENICHI SUZUKI (CAMPINAS UNIV. BRAZIL), DR. V. P. SHARMA
(RANCHI UNIV. INDIA), SHUICHI TORII, PH.D (KUMAMOTO UNIV. JAPAN), PROF. NOBUMASA
SEKISHITA (TUT, JAPAN), PROF. CHENG-HSIN CHUANG (SOUTHERN TAIWAN UNIV.),
PROF. RICHARD BIRMINGHAM (NEWCASTLE UNIV.OF UK), PROF. TOSHIHARU KAGAWA
(TOKYO INSTITUTE OF TECH.)

ORGANIZING COMMITTEE

DR. HARUS LAKSANA GUNTUR, INDRA SIDHARTA, MSc., HENDRA CORDOVA, MT., RIDHO BAYUAJI,
PH.D., TATAS, MT., HERMANTO, MSc.

SECRETARIAT DIVISION

SUYANTO, MT., DR. KARTIKA NUSWANTARA, SITI KAMILIA AZIZ, MT., HERI SUDARSONO, INDAH
PURWATI, SUCIPTO, RIVAI WARDHANI, MSc., ATRIA WARDHANI, MT., PUTU SUWARTA, MSc.,
ANDINI PRASTIWI, AMD., PUTRI NURINA RISMAWANTI, AMD, DEVINA PUSPITASARI, ST., RIYAN
PRISDIANTO

OPENING SPEECH OF THE RECTOR OF ITS

Assalamu'alaikum Wr. Wbr.

Praise and grateful are always prayed to Allah SWT, for all his grace to us so that we can establish a proud achievement by convening **“The Third International Seminar on Applied Technology, Sciences and Arts (APTECS)”** in Campus of Institut Teknologi Sepuluh Nopember (ITS), which at the same time this seminar is also to commemorate the 51st anniversary of ITS.

I would like to give a highest appreciation to all guests especially from abroad, welcome to Indonesia and welcome to ITS – Surabaya. Also, I would like to give a sincere gratitude to the organizing committee, for their efforts to provide everything for this international seminar.

In accordance with the vision and mission of ITS; to become an international research university, this international seminar is one of the efforts to achieve the vision and mission. **APTECS** is an annual seminar organized by the ITS as a forum of knowledge sharing in a very wide and global research area. APTECS covers diverse issues in science, technology and arts. It implies that ITS would be active in the development of science, technology and culture, not only in Indonesia, but also in the world.

The main theme of the 3rd International seminar on APTECS is **Resources Optimization based on Science and Technology for Nations' Self-Reliance**. This theme is very relevant with the present condition, where resources diminish very rapidly while the demands increase significantly.

Finally, I would like to express my deepest appreciation to Professor Zuhul Abdul Kadir (Head of National Innovation Committee of Indonesia) and Professor Mark G. Stewart (Director of Center for Infrastructure and Performance and Reliability University of Newcastle Australia) for their willingness to attend the seminar and to deliver their outstanding lectures.

To all of our distinguished guests and participants, thank you for being here and enjoy the seminar.

Thank You.

Wassalamu'alaikum Wr. Wbr.

Surabaya, December 6, 2011

Rector of ITS

Prof. Dr. Ir. Tri Yogi Yuwono

OPENING SPEECH OF THE CHIEF OF INSTITUTE OF RESEARCH AND PUBLIC SERVICES

First of all, let us praise God whose blessings have enable us to band together, to meet friend and colleagues from various speciality areas here in the 3rd International APTECS that will be held at December 6, 2011. On behalf of Research and Public Services Institute, I welcome you all experts and profesional researchers either from abroad or all over Indonesia. I also whould like to convey special thank to Universiti Teknologi Petronas (UTP) Malaysia and University of Newcastle Australia for their great support on this seminar. It is pleasure and binifical for all of us if we can use this forum to create sustaible network among researchers in order develop knowledge, technology through research and innovation.

Indonesia is now facing one of the greatest economic, research and innovation policy challences in the 21st millinium. The main course that must be done to foster the economic growth is bilding the bridge between science and business activities, between idea, innovation and prosperity, between knowledge, technology and wisdom. Through the Master Plan of Indonesian Economic Growth and Acceleration, the Government of Indonesia has dicided to give more support on education, research and innovation as the drivers of economic growth and the positive development of the economy, the sustainable reform of social structure and the well-being of citizens. The development of science, technology, creativity and innovation are the main key to success in global competition.

In the attempt to foster the development of science, technology, creativity and innovation, basic and applied research, and industrial research and innovation activities to effectively implementing new idea need to be conducted to enhance industrial productivity and competitiveness and to advance our nations unchallenged supremacy. The 3rd International APTECS seminar is the forum where we can meet colleagues, friends from various specialty areas to discuss and to disseminate research findings and discoveries and also to develop sustainable research network.

Global challenges such as climate change, demographic development, shortages energy, the spread of common deseases, shourtages of food, shortages of fossil raw material, and shourtages of other natural resources require viable solution. The uncontrol exploitation and use of natural resources will contribute more problem of human life and may become the main cause of climate change. These can only be provideed with the help of research and new technologies and through the dissemination of innovations. For this reason, then APTECS 3rd raises the topic of “**Resources Optimization Based on Science and Technology for Nations’ Self-Reliance**”.

APTECS is forwarded to be the one of the forum for researchers and innovators to disseminate and discuss the results of research and innovation; furthermore, this forum is promoted to enrich creative and innovative ideas that would be worth considering for further research as well as for productivity growth. Intensive network and communication between researchers would continue the process of advancing science, technology, creativity and innovation. Moreover, further attempt of this form is to promote the implementation of the research finding to give positive contributions for our beloved country. By hosting this seminar LPPM-ITS is not only to gain the advantment of the science and technology throughout all the findings offers in this forum but at the same time, to encourage and to enhance the culture and values of this country that would fruitfully signify our existence as anation.

This academic forum meets annually at the end of the year, and next year we would welcome you to see us again in the 4th APTECS International Seminar that would offer more laborious topics. On behalf of LPPM-ITS I would like to express my deepest gratitude to all presenters and participants, and I wish a productive and inspiring seminar.

Surabaya, 6 Desember 2011

Prof. Ir I Nyoman Sutantra MSc. PhD
The Chief of LPPM-ITS

OPENING SPEECH OF THE COMMITTEE CHAIRMAN

Rector of ITS, Prof DR Ir Tri Yogi Yuwono DEA
Chief of Research Institute and Public Services of ITS, Prof Ir Nyoman Sutantra MSc PhD
Director of Centre for Infrastructure and Performance and Reliability (CIPAR) University of Newcastle Australia, Prof Mark G Stewart BE, PhD, FIEAust, CPEng
Head of National Innovation Committee, Professor Dr Ir Zuhul Abdul Kadir, M.Sc.EE
Distinguished Presenters, all participants, and Colleagues

Assalamu'alaikum Wr Wb

Welcome to Indonesia, Surabaya and ITS

First of all, let us praise Allah, who gives us strength and determination to make possible this conference and give us good health to come to this conference.

On behalf of the APTECS 2011 Organizing Committee, I am very pleased and honoured to welcome each of you to the third International APTECS conference. This conference is organized by Institut Teknologi Sepuluh Nopember Surabaya (ITS) and supported by Universiti Teknologi Petronas (UTP) of Malaysia and Centre for Infrastructure and Performance and Reliability (CIPAR) University of Newcastle Australia.

APTECS is a very unique conference as it covers a very wide research area. It is organized annually by ITS as the forum of academic sharing focusing on diverse issues in science, technology and arts. APTECS is primarily designed to become the forums for researchers to disseminate and discuss the results of research. The main theme of this year's conference is **Resources Optimization based on Science and Technology for Nations' Self-Reliance**. The theme is very relevant with present day condition where resources diminish very quickly while their demands increase considerably. Science and technology must play a major roles in advising governments on how to best manage these finite resources and funds to ensure maximum benefit to society. The theme of the conference is also in aligned with recently declared ITS policy, called Eco Campus.

Distinguished Presenters, all participants, and Colleagues

This international conference have attracted around 150 participants and more than 123 papers will be presented, both from Indonesia and overseas. Two keynote speakers will be delivered in the plenary session by Prof Mark Stewart of University of Newcastle Australia and Prof Zuhul Abdul Kadir of Universitas Indonesia. Therefore, I would like to express my sincere gratitude and warmest welcome to Prof Mark Stewart who comes far away from Australia and to Prof Zuhul who spares his busiest time in Jakarta to come to this conference. The two speakers will enlighten our understanding the concept of resources optimization and their applications in engineering practices. My special thanks also go to all the authors who has spent their time work hard to produce a novel paper to be presented in the conference.

Distinguished Presenters, all participants, and Colleagues

Special acknowledgment should be given to the members of the Steering Committee, who has contributed ideas and time to support the organization of the conference. I would like also to thank all my colleagues in the Organizing Committee, who has worked very hard for almost a year to

prepare and realize the conference. I hope that the entire program will serve as a forum to enrich your research results, cultivate new ideas for further research and widen the networking with new colleagues. I do hope you will have a sweet memory of this conference, ITS, Surabaya and Indonesia.

Finally, I would like to ask you all an apology for all inconvenience that you might find prior, during, or after the conference. Thank you and enjoy the conference.

Wassalamu'alaikum Wr Wb

General Chairman of ^{3rd} APTECS 2011

M. Sigit Darmawan, PhD.

ACKNOWLEDGEMENTS

Special gratitude is extended to all of the followings:

**RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER
INSTITUTE OF RESEARCH AND PUBLIC SERVICES – ITS
THE JOURNAL OF IPTEK ITS
THE UNIVERSITY OF NEWCASTLE, AUSTRALIA
UNIVERSITI TEKNOLOGI PETRONAS
PERSATUAN INSINYUR INDONESIA
NATIONAL INNOVATION COMMITTEE**

for never ending supports that have made the 3rd APTECS 2011 held successfully.

SCHEDULE
INTERNATIONAL SEMINAR ON APPLIED TECHNOLOGY,
SCIENCE, AND ART
3RD APTECS 2011

Tuesday, December 6, 2011

Time	Activities					
06.45 - 07.30	Registration					
	A	B	C	D	E	F
07.30 - 07.40	Eng-3	Eng-17	Eng-8	Art-1	Sci-1	Eng-42
07.40 - 07.50	Eng-7	Eng-72	Eng-13	Art-2	Sci-3	Eng-43
07.50 - 08.00	Eng-12	Eng-24	Eng-32	Eng-11	Sci-4	Eng-44
08.00 - 08.10	Eng-14	Eng-28	Eng-33	Eng-26	Sci-6	Eng-50
08.10 - 08.20	Eng-16	Eng-30	Eng-37	Gen-5	Sci-7	Eng-51
08.20 - 08.30	Eng-36	Eng-41	Eng-75	Art-3	Sci-9	Eng-52
08.30 - 08.40	Eng-64	Eng-59	Eng-5	Art-4	Gen-3	Eng-77
08.40 - 08.50	Eng-95	Eng-83	Eng-96	Art-5	Sci-10	Eng-97
09.00 - 09.05	Indonesian Traditional Musical Instruments: Ayak Talu					
09.05 - 09.15	Opening Remark					
09.15 - 09.25	Welcome to 3 rd APTECS : M. Sigit Darmawan					
09.25 - 09.35	Speech from The Head of ITS Center of Research and Public Services : Prof. I. N Sutantra, PhD					
09.35 - 09.45	Opening Term - Rector ITS : Prof. Triyogi Yuwono					
09.45 - 09.50	Ladrang APTECS					
09.50 - 10.00	Traditional Dance : REMO					
10.00 - 11.00	Keynote Speaker I and II					
	Theme I : Prof. Zuhal (Director of National Innovation Committee)					
	Theme II : Prof. Mark G Stewart (The University of Newcastle, Australia)					
	A	B	C	D	E	F
11.00 - 11.10	Eng-18	Gen-9	Eng-10	Eng-61	Sci-2	Sci-17
11.10 - 11.20	Eng-74	Eng-66	Eng-25	Eng-65	Gen-2	Sci-14
11.20 - 11.30	Eng-1	Eng-80	Eng-27	Eng-70	Sci-5	Eng-76
11.30 - 11.40	Eng-4	Eng-81	Eng-34	Eng-71	Gen-8	Eng-79
11.40 - 11.50	Eng-19	Eng-15	Eng-39	Eng-6	Eng-63	Eng-94
11.50 - 12.00	Eng-21	Eng-20	Eng-40	Eng-86	Eng-82	Eng-85
12.00 - 13.00	Break for Lunch and Pray					
13.00 - 13.10	Eng-23	Eng-22	Eng-45	Sci-11	Gen-1	Eng-46
13.10 - 13.20	Eng-35	Eng-29	Eng-47	Sci-12	Gen-4	Eng-54

13.20 - 13.30	Eng-56	Eng-38	Eng-48	Sci-13	Eng-49	Eng-62
13.30 - 13.40	Eng-67	Eng-58	Eng-53	Gen-7	Gen-6	Eng-88
13.40 - 13.50	Eng-89	Eng-69	Eng-55	Eng-84	Eng-57	Eng-9
13.50 - 14.00	Eng-90	Eng-91	Eng-73	Sci-8	Eng-68	Eng-31
14.00 - 14.10	Eng-92	Eng-93	Eng-87	Eng-2	Eng-78	
15.00 - 15.05	Ketawang : Indonesian Traditional Musical Instruments					
15.05 - 16.00	Closing Ceremony					
	See you on 4 th APTECS					

- **NOTE**
- A : Ruang Argopuro 1**
 - B : Ruang Argopuro 2**
 - C : Ruang Kawi**
 - D : Ruang Lawu**
 - E : Ruang Semeru 1**
 - F : Ruang Semeru 2**

Moderator Sesion 1 :

A	Ruang Argopuro 1	Dr. Tech. Pujo Aji
B	Ruang Argopuro 2	Ir. Hera Widyastuti, MT
C	Ruang Kawi	Dr. Januarti Jaya Ekaputri
D	Ruang Lawu	Dr. Tri Joko Wahyuadi.
E	Ruang Semeru 1	Dr. Christiono Utomo
F	Ruang Semeru 2	Prof. Danawati Hari Prajitno

Moderator Sesion 2 :

A	Ruang Argopuro 1	Wahju Herijanto, S.T., M.T
B	Ruang Argopuro 2	Dr. Budi Suswanto
C	Ruang Kawi	Dr. Data Iranata
D	Ruang Lawu	Dr. Endah Wahyuni
E	Ruang Semeru 1	Diah P Wulandari, ST. MSc.
F	Ruang Semeru 2	Agung Budipriyanto, Ph.D

Rules of Paper Presentation

1. The allotted time for presentation and question-answer session is 10 minutes for each presenter
2. To keep prompt presentation, bell would ring three times to remind the presenter's available time for presentation. It rings every eight minutes of the allotted time, and the last 10 minutes.
3. It is mandatory that the presenter promptly use the time allotted.
4. The timekeeper would also strictly watch the time allotted to each presenter.

TABLE OF CONTENTS

Cover		i
Opening Speech		v
Acknowledgements		x
Schedule		xi
Table of Contents		xiii
Risk-Based Economic Optimisation of Climate Adaptation Strategies for Built Infrastructure	-	
MARK G. STEWART AND XIAOMING WANG (KEYNOTE SPEAKER)		
Indonesian Technology: Toward a Self Reliance-Nation	-	
ZUHAL (KEYNOTE SPEAKER)		
Image Segmentation for Text Detection from <i>Lontara</i> Ancient Manuscript using Edge-based Method	Eng -1	1
MUKHLIS AMIN AND MOCHAMAD HARIADI		
Improving the Society Living Standards through Training on Making Coconut Handycraft in Paciran District, Lamongan Regency	Eng-2	7
EKO NURMIANTO, NANING ARANTI WESSIANI, AND WALUYOHADI		
Design of Power System Stabilizer Based on Adaptive Neuro-Fuzzy Method	Eng-3	14
AGUS JAMAL AND RAMADONI SYAHPUTRA		
Multiobjective Optimization for Workload Distribution using Nondominated Sorting Genetic Algorithm II (NSGA-II)	Eng-4	22
AHMAD KHAIDIR AND MOCHAMAD HARIADI		
Potential Contribution of Groundwater From the Upper Citarum Watershed to the Bandung Groundwater Basin Based on One Year Simulation	Eng-5	28
TATAS AND LILIK EKO WIDODO		
Energy Harvester for Multi Purpose Vehicle Comfortability Enhancement using Electromagnetic Damper Mechanism	Eng-6	34
ARIF INDRO SULTONI, I NYOMAN SUTANTRA, AGUS SIGIT. P, HARUS LG		
Experimental Study for Extracting Solid Materials from Solid-Liquid Mixture	Eng-7	39
SHUICHI TORII		
Experimental Study of Semi-Rigid Beam-To-Column Connections using Fasteners Due To Monotonic Loading	Eng-8	42
KHALED M. AMTERED EL-ABIDI AND ACHFAS ZACOEK		

Planning and Development of Hot Press Machine with Pneumatic System Based Programmable Logic Controller (PLC) SAMPURNO	Eng-9	49
A Study of Negotiation Style and Outcome in Indonesia Construction Industry CHRISTONO UTOMO, ARAZI IDRUS, HANIFAH SUKMA, FARIDA RAHMAWATI, ANNISA N, CAHYONO, BINTANG NURCAHYO, ISNANTO	Eng-10	57
Performance Comparison of String Matching Algorithm on Multicore for DNA Pattern Searching BENFANO SOEWITO	Eng-11	63
Effect of Nano-Fiber (Sio₂) on Mechanical Properties of Geopolymer THI LINH TRINH, DORA KROISOVA, PETR LOUDA, PAVEL KEJZLAR	Eng-12	69
Sedimentation in Caspian Sea in North of Iran FARSHID HEMMATI AND SEYED MAJID MUSADDAD	Eng-13	72
Double Face Grinding of Carbon Fibre Reinforced Silicon Carbide Composite E. UHLMANN , T. HOGHE, AND BORSOI KLEIN	Eng-14	76
Numerical Prediction of the Resistance of a Semi-displacement Catamaran with Transverse Spacing Demihull A.JAMALUDDIN, I K A P UTAMA, W.D. ARYAWAN, AND, B. WIDODO	Eng-15	81
Numerical Investigation of Two-Dimensional Lubricated Sliding Contact with Mixed Slip Boundary M.TAUVIQIRRAHMAN, R.ISMAIL, J.JAMARI, AND D.J.SCHIPPER	Eng-16	84
Design and Optimation of Turbine Module for PCMSR 250 MWe ANDANG WIDI HARTO	Eng-17	90
Simulation on Material Failure by Using Discrete Element Method SUTIKNO AND INDRA SIDHARTA	Eng-18	95
Optimal Tunning PID Controler for Inter Area Using Imperialist Competitive Algorhthm (ICA) HERLAMBANG SETIADI, WENDY KURNIAWAN KAUTSAR, AKBAR SWANDARU, AND IMAM ROBANDI	Eng-19	102
Optimum Coordination of Capacitive Energy Storage and Analog Prototype Model of STATCOM in Multimachine power System Using ICA AKBAR SWANDARU, SOEDIBYO, ARDYONO PRIYADI, AND IMAM ROBANDI	Eng-20	108
Optimum Design of Capacitive Energy Storage (CES) and Power System Stabilizher (PSS) using Differential Evolution Algorithm	Eng-21	114

Optimum Design Superconducting Magnetic Energy Storage (SMES) in Wind-Diesel Hybrid Power System Tuning by Differential Evolutionary Algorithm(DEA) NURSIDI, AKBAR SWANDARU, FAIQ ULFI, AND IMAM ROBANDI	Eng-22	118
Development of H2O2 Generator for Vehicle Application HARUS LG, A.HAKIM, B.SAMPURNO, AND I NYOMAN SUTANTRA	Eng-23	123
Multi Criteria Evaluation Based Motor Energy Saving Strategy for Small and Medium Scale Industry YUSAK TANOTO	Eng-24	127
Forecasting Project Cost Overruns using Input-Output Hidden Markov Model TRI JOKO WAHYU ADI	Eng-25	132
Applying Kansei Words to Japanese Bread Store INDRI HAPSARI, LINDA H.GUNAWAN, AND RENDY HANDOKO	Eng-26	141
Monitoring Environmental Changes Using UAV and Photogrammetric Techniques: a Preliminary Result M.EDWIN TIAHJADI	Eng-27	147
High-Temperature Oxidation Behaviour of Fe3Al-Ta and Fe3Al-Ta-Cr Alloys Containing Laves Phase D.D.RISANTI, AND G.SAUTHOFF	Eng-28	151
The Adaptive Compliant Kalman Control System of Aerodynamic Data Perspectives in Wise-Craft 8 Pax During Planing SAYUTI SYAMSUAR, ERWANDI, EKO BUDI DJATMIKO, AND S.SUBCHAN	Eng-29	158
The Adaptive Compliant Kalman Control System of Hydrodynamic Data Perspectives in Wise-Craft 8 Pax During Planing SAYUTI SYAMSUAR, EKO BUDI DJATMIKO, AND S.SUBCHAN	Eng-30	164
Synthesis and characterization of ZnO and ZnO:Ag nanopowders via a novel sol-gel method MARYAM SHAYANI RAD, AHMAD KOMPANY, MAJID EBRAHIMIZADEH ABRISHAMI, AND MARYAM JAVIDI	Eng-31	170
Numerical Simulation of Mudflow Using Moving Ball Test Result SHANNON HSIEN HENG LEE AND BUDIJANTO WIDJAJA	Eng-32	174
Improving Road Utilization and Traffic Flow by Automated Lane Detection	Eng-33	177

Comparison Study of Buckling Restrained Brace Sections on Structural Steel Building Using ABAQUS Version 6.7 BUDI SUSWANTO, R. SOEWARDOJO, AND BUYUNG IRAWAN	Eng-34	180
Modeling and Analysis of the Dissipated Power from Urban Vehicle Suspension due to Impulsive Excitation HARUS LAKSANA GUNTUR, WIWIEK HENDROWATI, AND WIOKO YUDANTARA	Eng-35	186
Factorial Design Optimization of Supercritical CO₂ Extraction Conditions of Galanthamine ORCHIDEA RACHMANIAH, INAKI ARRUBARRENA, ROB VERPOORTE, BAS VERMEULEN, JAAP VAN SPRONSEN, AND GEERT-JAN WITKAMP	Eng-36	191
The Effect on the Use of Rice Husk Concrete Brick Wall Against the Thermal Conditions of Housing Room TRI ENDANGSIH, HAKIM, AND SUSANTI SUMAMPE	Eng-37	198
Ergonomic Aspect of Motorcycle's Sidecar Design EKO NURMIANTO AND KRESNO SULASMONO	Eng-38	213
Characterization of Pozzolanicity Bromo's Volcanic Ash RIDHO BAYUAJI, M.SIGIT DARMAWAN, IBNU PUDJI, AND NUR AHMAD HUSIN	Eng-39	218
Mechanical Properties of Volcanic Ash Based Concrete JANUARTI JAYA EKAPUTRI, TRIWULAN, PUJO AJI, AND AHMAD BAIHAQI	Eng-40	224
Designing Of Electronic Customer Relationship Management Based On Framework Of Dynamic CRM RIKA YUNITARINI	Eng-41	230
Implementation of Inertial Sensors in an Interactive User Interface for Mobile Devices (iOS) MAULANA RIZQI, M.HARIADI, AND MARKUS HAID	Eng-42	236
Enhancement Production Of Fish Seed Using Mechatronics Technology R.EDY PURWANTO, EKA MANDAYATMA, MAFTUCH, AND MOH.HARTONO	Eng-43	241
Design of Monitoring System Performance (Stability and Biogas Production Optimality Anaerobic Bioreactor Based Data-Base) TOTOK SOEHARTANTO, RONNY DWI NORIYANTI, SARWONO, AND ARDI GURITNO	Eng-44	247
Modeling Partial Prestressed Concrete Beam Connecting To Reinforced Concrete Column In Seismic Resistant Multistory Frame MADE D. ASTAWA, I.G.P.RAKA, AND TAVIO	Eng-45	253

Turbulent Bottom Boundary Layer under Irregular Waves TAUFIQUR RACHMAN AND SUNTOYO	Eng-46	265
Self Compacting Concrete (Scc) Using Bromo Volcano Ash TRIWULAN, JANUARTI J.E, PUJO A., AND ANDIKA P.	Eng-47	271
Evaluation Of Peak Ground Acceleration For Indonesia Earthquake Map In Mentawai Islands IMAN WIMBADI D, TAVIO, AND DAMAR K.	Eng-48	279
Modular Concept As Trigger New Product Development Case At Panel Interior Of Train Executive Class New Generation PT.INKA BAMBANG TRISTIYONO	Eng-49	285
Modeling and Simulation of Wind Energy Conversion System in Distributed Generation Units RAMADONI SYAHPUTRA, MOCHAMAD ASHARI, IMAM ROBANDI	Eng-50	290
Design Of Student Lifecycle Management (Slcm) using Hybrid Framework Php & Jquery At Ppsft Ub Case Study : Academic Management and Content Preparation DHEBYS SURYANI HORMANSYAH	Eng-51	298
Development of Permit System Model Based on Wimmer's Holistic Framework, a Case Study SUHERMAN AND EKO SETIJADI	Eng-52	302
The Use Of Maturity Index To Predict The Later Age Strength Of Normal Concrete Under Steam Curing PUJO AJI, TRIWULAN, JANUARTI JAYA EKAPUTRI, AND DESTIAR	Eng-53	306
The Effects of Tidal Current, Sea Level, and Wave Period on Gravity-driven Sediment Transport and Intertidal Flat IMADE BAYU W.S, YAMADA FUMIHIKO, AND SUNTOYO	Eng-54	310
Integration of Automatic Identification System (AIS) Data and Geographic Information System (GIS) for Development of Ship Inspection Method TRIKA PITANA, A.A. BAGUS DINARIYANA, DWI PRIYANTA, I KETUT BUDA ARTANA, RIZKIE GARNAWAN	Eng-55	316
Actuator Power Consumption of Active Suspension System Augmented with Anti-Windup Compensator UNGGUL WASIWITONO	Eng-56	323
Semantic Matchmaking using Weighted Directed Acyclic Graph RIYANARTO SARNO, KHAKIM GHOZALI , BAYU ADHI NUGROHO, AND ASTRIA HIJRIANI	Eng-57	329

Doppler Effect Analysis on IiNUSAT Communication System DEVY KUSWIDIASTUTI, RISKA CAHYA WIJAYANTI, AND GAMANTYO HENDRANTORO	Eng-58	335
Shape Memory Characteristics of Ni-Ti-Cu and Ni-Ti-Cu-Fe Alloys EFENDI MABRURIA, BAMBANG SRIYONOA, BINTANG ADJANTOROA, AND DN.ADNYANA	Eng-59	341
Failure Analysis Of Broken Crankshaft Tug Boat's Coke MOCH. SYAIFUL ANWAR AND HARSISTO	Eng-60	347
Classification of The Differential Diagnosis Erythematous Squamous Dermatology Diseases Using Self Organizing Map Based Fuzzy and Particle Swam Optimization HARYANTO	Eng-61	357
Identification Vegetation In Area Waterfront River Tanjung Bunga And Aflication In Bioengineering Methods M. HUSNI KOTTA AND MANGKODIHARDJO	Eng-62	360
The Influences Of Organizational Citizenship Behavior (OCB) Key Users To The Performance Of Manufacturing Companies In Implementing Enterprise Resources Planning (ERP) Technology ZEPLIN JIWA HUSADA TARIGAN, SAUTMA RONNI BASANA, AND WIDJOJO SUPRAPTO	Eng-63	368
Effect of a Non-Tight Constructions of DC-Link and Damping Oscillation to Improve the Efficiency of Fly-back Converter DIDI ISTARDI	Eng-64	376
Automatic Transformation of SQL Queries to Web Applications TEDUH DIRGAHAYU	Eng-65	382
Electrochemical Behavior of NiTiCu Shape Memory Alloy Wires in Ringer Solution ARI YUSTISIA AKBAR AND EFENDI MABRURI	Eng-66	387
Electrical Energy Characteristics Of A Piezoelectric Vibration Energy Harvesting Mechanism Due To Impact Loads WIWIEK HENDROWATI, BAMBANG DARYANTO W., I NYOMAN SUTANTRA	Eng-67	390
Product Development of Suspended Bicycle as Aerial Lift in Surabaya Zoo Park BAMBANG ISKANDRIAWAN DAN CHARLES DAVID ARDIAN	Eng-68	395
Gabor Phase-based Face Recognition Under Varying Illumination Using Supervised-PCA HENDRA KUSUMA, WIRAWAN, AND ADI SOEPRIJANTO	Eng-69	401
Information Economics for Cargo Community System. Case	Eng-70	412

Study: PT. Ritra Cargo

DODI WISAKSONO SUDIHARTO

Interconnection Between Mainframe and Web Based Application Using ActiveX

DODI WISAKSONO SUDIHARTO

Eng-71 419

Designing Enhanced I-Bot (Information System Bot) Using AIML (Artificial Intelligence Markup Language) and Program O (PHP and MySQL) at PSFT UB Website

MARTIN FATNURIYAH

Eng-72 421

The Capacity of Brantas River Review before and after the Lapindo Brantas Incident

KUNTIJORO, DIDIK HARIJANTO, PUDIASTUTI, SAPTARITA

Eng-73 424

Innovative Device For Elderly People With Real Time Operating System Using 32-Bit Microcontroller

HENDRY GUNAWAN, ARKO DJAJADI

Eng-74 431

Measurement of Acoustic Noise Induced by Propeller Cavitation in Cavitation Tunnel

ENDANG WIDJIATI, YUNIATI, AND ENDAH SUWARNI

Eng-75 438

Flexural Properties of Glass Fibre Reinforced Polyester Hybrid Composites with Stainless Steel Mesh Layer

PUTU SUWARTA, WAJAN BERATA, AND SUTIKNO

Eng-76 442

Portable Antenna for Nano Satellite Portable Ground Segment

EKO SETIJADI, GAMANTYO H, GATOT K., AND RIYADI T.

Eng-77 449

Research on an Energy Saving Method in the Refrigerator with an Inverter

AGUNG BAKHTIAR, JIN-KWANG YOU, JONG-BUM PARK, KWANG-HWAN CHOI

Eng-78 452

Intelligent Underfrequency Load Shedding for 500kV Java-Bali Electrical Power System

DIMAS FAJAR UMAN P, ONTOSENO PENANGSANG, ADI SOEPRIJANTO, AND MOHAMMAD ABDILLAH

Eng-79 456

Phase Of Precipitates In Biomedical Co-Cr-Mo-C Alloys With Si And Mn Addition

ALFIRANO

Eng-80 461

Investigation of Mechanical Properties of Hot pressed Aluminium Alloy Composites (AC8A/SiCp) Affected by Reinforcement Coating

T. MUSTIKA, B. SOEGIYONO, AND I.N. JUJUR

Eng-81 467

Comparison of Gazis-Herman-Rothery, Optimal Velocity and

Eng-82 473

Intelligent Driver Car-Following Models

FERGYANTO E GUNAWAN

Recurrent Neural Networks for Gamelan Music Onset Detection

DAH P WULANDARI, YOYON K SUPRPTO, AND ARIS TJAHYANTO

Eng-83 481

The Potential Effect Of 2-Propanol Addition On Vapor Pressure Of Gasoline-Ethanol Mixtures

ACHMAD MUBARAH, AGUNG RASMITO, KUSWANDI AND GEDE WIBAWA

Eng-84 487

Control of Doubly-Fed Induction Generator in Distributed Generation Units Using Adaptive Neuro-Fuzzy Approach

RAMADONI SYAHPUTRA, IMAM ROBANDI, AND MOCHAMAD ASHARI

Eng-85 493

Material Analysis in Realistic Rendering Effect Using Radiosity Case at Interior of Train Executive Class New Generation PT.INKA

BAMBANG TRISTIYONO

Eng-86 502

Earthquake-Resistant Design of Building with Pushover Analysis

YUYUN TAJUNNISA, ENDAH WAHYUNI, TAVIO, R.BAYUAJI, WIDJONARKO, S.KAMILIA, AND E. MELANIE

Eng-87 508

Megapolis As An Agent Of Abiotic Environmental Degradation : Solution-Based Studies With Indigenous Policies

ANNISA TRIYANTI

Eng-88 515

Dynamic Strain Aging in Co-33Ni-20Cr-10Mo Superalloy

IKA KARTIKA AND AKIHIKO CHIBA

Eng – 89 552

Enzymatic Hydrolysis of Sorghum Stalk to Readily Fermentable Sugar for Bioethanol

SOEPRIJANTO, KATHERIN INDRIAWATI, AND NURLITA ABDULGANI

Eng – 90 528

Effect of Multiple Repairs Welding on Mechanical Properties And Micro Structure of Weld Material

GATHOT DWI WINARTO, SUTIKNO AND SUBOWO

Eng – 91 532

Short Solution Treatment of Cast Al-Si-Mg Alloy in Salt Bath Furnace

INDRA SIDHARTA, RAHADIAN FIRMAN P, ASRI KUSUMANINGTYAS, WAJAN BERATA, H. C. KIS AGUSTIN, WAHYU WIJANARKO, SUTIKNO

Eng – 92 537

Accuracy Geometrical Testing of NC Milling Machine Using Laser Interferometer and Double Ballbar

RIVAI WARDHANI, ATRIA PRADITYANA, EDDY WIDIYONO

Eng – 93 544

Design of Manuvering Commerce Ship Control System Based on Fuzzy Logic to Avoid Unidentified Objects at Tanjung Perak Waterways

AULIA SITI AISJAH, A.A MASROERI, ANITA FARUCHI

Eng – 94 550

The Bio-Fuel Pressure Stove Fueled by Waste Cooking Oil SJAFFRIADI, NUGROHO ADI SASONGKO	Eng – 95	558
Electrical System Self on Madura Island with High Economic Value RUSIANA	Eng-96	564
Prospect of Iran Natural Gas Export Projects HEDAYAT OMIQVAR	Sci-1	565
Capturing the Value of Ecosystem Services in Indonesia JOHN MCLACHLAN-KARR	Sci – 2	577
Mathematical Study on The Determination of Optimal Pressure Interval Based on Dissolved Oxygen Needed in Water Ecosystem AGUS INDRA JAYA AND RINA RATIANINGSIH	Sci – 3	583
Effect of Ph on the Preparation of Pt/Graphene Nano Sheets For Co-Tolerant Anode Catalyst RIKSON SIBURIAN AND JUNJI NAKAMURA	Sci – 4	592
Estimation of Soil Organic Carbon Loss by Runoff and Its Role on Management of Ungauge Watershed AHMAD CAHYADI, EMILYA NURJANI, EKO HARYONO, AND HENKY NUGRAHA	Sci – 5	609
Photoluminescence Properties Of Chemically Deposited Cds And Cdms Nanocrystalline Films RAGESH CHANDRAN AND G.SURESH	Sci – 6	614
Preservation Of Fish Using Zanthoxylum Acanthopodium (Andaliman) Essential Oil And Green Tea Extract NANI PASARIBU, FILIANA SANTOSO, AND CONNY PRICILYA	Sci - 7	618
Potential Use of Consumption Module of Susenas Panel to Map the Undernutrition Prevalence at District Level in Indonesia BAHARUDDIN AND WA ODE SALMA	Sci - 8	624
Optimization of Alkaline Peroxide Pretreatment of Rice Straw for Bioethanol Production SITI FAUZIYAH RAHMAN, SIRAMULU GOBIKHRISNAN, NATARIANTO INDRAWAN, SEOK-HWAN PARK, JAE-HEE PARK, HWA-WON RYU, CHANGSHIN SUNWOO, AND DON-HEE PARK	Sci - 9	627
Introducing Palm Biodiesel in the Indonesian Power Generation Sector : Environmental Feasibility NATARIANTO INDRAWAN, SIRAMULU GOBIKHRISNAN, SITI FAUZIYAH RAHMAN, SEOK-HWAN PARK, JAE-HEE PARK, CHANGSHIN SUNWOO, BAIK HWANG AND DON HEE PARK	Sci - 10	631
Characterization Of Solar Module Type Sx50u Polycrystalline Silicon And	Sci - 11	646

Monocrystalline Silicon Using A Simple Sun Simulator
SATWIKO S

Effect of Cellulolytic Microbial Consortium to The Cow Manure and Rice Straw Composting

TINI SURTININGSIH AND SITI MARIAM

Sci - 12 650

The Effect Of Combination Inorganic With Biofertilizer On Growth And Leaf Lettuce Yield (Lactuca Sativa, L.) Var.Crispa, And Typic Dystrudept Jatinangor Quality

SITI MARIAM AND TINI SURTININGSIH

Sci - 13 657

Galvanostatic Electropolymerization of Conductive Polymer Ppy-PANi on Gold Electrodes for Uric Acid Biosensor

ROBETH VIKTORIA MANURUNG, JOJO HIDAYAT, AND RINA ANDRIYANI

Sci - 14 664

Genetic Transformation From Internode Explants Of Glycyrrhiza Uralensis

MEI LAN JIN, YU JEONG KIM, BAIK HWANG

Sci -15 668

The Development Of Microwave Source Based On Diode Laser

WILDAN PANJI TRESNA, HENDRA ADINANTA, NURFINA YUDASARI

Sci -16 670

Characterization Of Thermopilic Bacteria Community From Songgoriti-Hot Spring

SURYA ROSA PUTRA AND HERDAYANTO SULISTYO PUTRA

Sci -17 676

Design Proposal for Tjong A Fie Memorial Museum Using Living Museum Concept to Improve the Quality of Visitor's Integrated Aesthetic Experience

JULY HIDAYAT

Art-1 680

Community Interests In Choosing Modest Rental Flats (Rusunawa) As Residence(Case Study)

HAKIM AND TRI ENDANGSIH

Art-2 690

Opening Position And Its Influence On The Wind Distribution On The Indoor Space In Nighttime For Hot Humid Tropics Housing

IMA DEFIANA, SRI NASTITI N EKASIWI, AND PRASASTO SATWIKO

Art-3 698

Development of Regression Equation for Outdoor Thermal Comfort for Pedestrian in Tropical & Humid Environment

SANGKERTADI AND RENY SYAFRINY

Art-4 703

Environmental Cycle

YUSMAN AHMAD NUR AND ANISA NAZIHA

Gen - 1 713

Studying of the IPv6 Features

AHMED YOUSSEF M SUDKEY

Gen - 2 723

The Effect Of Leadership Behavior Towards The Subordinates Performance And The Business Growth Of Small Industry In Makassar Area SYAMSUDDIN	Gen - 3	727
The Influence Of Service Quality Towards Hotel Customer Loyalty RETNO DEWANTI, ARYANTI PUSPOKUSUMO, AND CITRA PRAMESHWARI	Gen - 4	732
Study Of Landform Which Susceptible To Landslide In Samigaluh District Kulon Progo Regency Yogyakarta Special Province ARIES DWI WAHYU RAHMADANA, FITRIA NUCIFERA ,JUNUN SARTOHADI	Gen - 5	733
Spray Drying of Butterfly Pea (Clitoria ternatea) Petals Extract and Study of Its Antioxidant Activity ELISABETH K. PRABAWATI, MAYASWARI HANDOYO, ABDULLAH M. MARPAUNG	Gen - 6	742
The Independence Elderly Population in Indonesia (SUPAS 2005 Data Analysis) PANJI NUR RAHMAT	Gen - 7	746
Flow Velocity Measurement System In Cavitation Tunnel MOCHAMMAD NASIR, HARI SUBAGJA, NURWIDHI AW	Gen - 8	759
Higher Education Vision and Information Systems Strategy an Information Technology Requirement Engineering Study I KADEK DWI NURYANA	Gen - 9	767
Optimal Placement and Sizing of TCSC for Reducing Losses on Java-Bali 500kV Power System using Quantum-Behaved Particle Swarm Optimization FRISKY ALFARIZY, M. ABDILLAH AND ADI SOEPRIJANTO	Eng - 97	775
Review of Ergonomics of Increased Payload Motorcycles for Public Transport Solutions PRIMADITYA	Art - 5	782

IPTEK

The Journal for Technology and Science

IPTEK, accredited journal number : 83/DIKTI/kep/2009, is The Journal for Technology and Science, that has high competitiveness. The media for sharing knowledge and experience for engineers and scientists.

High quality paper and selected peer reviewers and our atmosphere.

"Please, Join with us :

- iptekjournal@gmail.com*
- mjliptek_its@yahoo.co.id*
- mjliptek@its.ac.id*

