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SULTAN IDRIS EDUCATION UNIVERSITY

# Sijil Penyertaan

*Certificate of Participation Awarded to*

**JASLIN IKHSAN**

*For the Attendance of*

**THE INTERNATIONAL POST GRADUATE CONFERENCE ON  
SCIENCE AND MATHEMATICS 2013**

*On*

**5-6th OCTOBER 2013**

*Venue*

**CONVENTION HALL, E-LEARNING BUILDING  
UNIVERSITI PENDIDIKAN SULTAN IDRIS**

*Professor Dr. Mustaffa Ahmad*

*Dean*

*Faculty of Science and Mathematics*

*Universiti Pendidikan Sultan Idris*





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PENDIDIKAN  
SULTAN IDRIS  
الجامعة السلفية لشؤون التعليم والعلوم

SULTAN IDRIS EDUCATION UNIVERSITY

# International Post Graduate Conference on Science and Mathematics 2013

## Research in Science and Mathematics Catalyse Sustainable Future

IPCSM2013

Date : Saturday, October 5th, 2013  
Venue : Convention Hall, E-Learning Building,  
Universiti Pendidikan Sultan Idris  
Organised by : Faculty of Science and Mathematics,  
Universiti Pendidikan Sultan Idris

[www.upsi.edu.my](http://www.upsi.edu.my)

<http://fsmt.upsi.edu.my>

<http://www.ipcsm2013.my>

**Room 3 (Chemistry, Chemistry Education and Mathematic)**

Session 1	
Chairperson: Dr. Adila Mohamad Jaafar	
Time	Presenter
10.15-10.30	<b>OR-033:</b> The Optimization Of Nicotine Capture By Using <i>Sansevieria</i> Leaf Active Carbon With The Variation Of Mass And Type Of Activator As An Effort To Reduce The Danger Level Of Smoke
10.30-10.45	<b>OR-034:</b> Isolation and characterization of protein from natural rubber latex concentrate factory effluent.
10.45-11.00	<b>OR-035:</b> Synthesis Of Carbon Nanotubes From Different Preparation Method Of Waste Chicken Fats
11.00-11.15	<b>OR-036:</b> Performance Of Unconfined Compressive Strength Of Stabilized/Solidified Sample Containing Heavy Metals From Incinerated Rubber Sludge Waste
11.15-11.30	<b>OR-077:</b> Waste management, practices and awareness in Vocational College welding workshop
11.30-11.45	<b>OR-078:</b> The Study Of Web-Based Collaborative Assistance Through Edmodo As A Hybrid Learning Model On Chemical Kinetic
11.45-12.00	<b>OR-079:</b> Development Of Five Phase Needham Constructivism Module For Electrochemistry Concept
12.00-12.15	<b>OR-080:</b> The Effect Of Using Jigsaw Puzzles In Writing The Formula Of Chemical Compound Among The Secondary School Students
12.15-12.30	<b>OR-081:</b> The Development Of Java 2 Micro Edition Based Mobile Chemistry Encyclopedia " <i>Chemistlopedia</i> " As Independent Learning Media For Senior High School Students
12.30-12.45	<b>OR-082:</b> The Development Of Mobile Game " <i>Scientist Academy</i> " As Chemistry Learning Media For Independent Experiments
Lunch	
Session 2	
Chairperson: Ms Nor Dalila Abd Rahman	
14.00-14.15	<b>OR-083:</b> The Development Of Java 2 Micro Edition Based <i>Chemistlopedia</i> Application On Chemical Elements For Senior High School Students
14.15-14.30	<b>OR-084:</b> The Development Of Java 2 Micro Edition Based Mobile Application <i>Chemistlopedia</i> On Hydrocarbon And Petroleum As Learning Media For Senior High School Students
14.30-14.45	<b>OR-085:</b> The Development And Response Of Teachers Toward Character-Based Mobile Game " <i>Robochem</i> " On The Reaction Rate Topic
14.45-15.00	<b>OR-075:</b> Strong Convergence Of An Algorithm About Quasi-Nonexpansive Mappings For The Split Common Fixed-Point Problem In Hilbert Space
15.00-15.15	<b>OR-076:</b> Modeling the Churning Tendency among Mortgage Customers using Data Mining Approach
15.15-15.30	<b>OR-111:</b> Synthesis And Characterization Of Ldh-Latex Stimulant Nanocomposite-Chitosan

**Room 4 (Mathematics)**

Session 1	
Chairperson: Ms. N...	
Time	Presenter
10.15-10.30	<b>OR-59:</b> An Algorithm For C Parameterized Single Exponential Inferences
10.30-10.45	<b>OR-060:</b> A Study of Stationary
10.45-11.00	<b>OR-061:</b> The Schur Multiplier
11.00-11.15	<b>OR-062:</b> The Nonabelian T-Number of Order $p^4$
11.15-11.30	<b>OR-063:</b> An Analysis on <i>Tudung Saji</i> Weaving
11.30-11.45	<b>OR-064:</b> Mathematics Model to Optimize Water Using a
11.45-12.00	<b>OR-065:</b> Permutability De
12.00-12.15	<b>OR-066:</b> Standardized M
12.15-12.30	<b>OR-067:</b> Timmer Functio
12.30-12.45	<b>OR-068:</b> A Bootstrap Ap of Seahorse Extract on A
Lunch	
Session 2	
Chairperson	
14.00-14.15	<b>OR-069:</b> A Review Of I
14.15-14.30	<b>OR-070:</b> The Kernel of Dihedral Point Group of
14.30-14.45	<b>OR-071:</b> Tourist Satisfi Analysis: A Case Study
14.45-15.00	<b>OR-072:</b> Comparing T Jenkin For Measuring C
15.00-15.15	<b>OR-073:</b> Ownership S Malaysian: Utilizing G
15.15-15.30	<b>OR-074:</b> A modified s fuzzy differential equa

# THE DEVELOPMENT OF JAVA 2 MICRO EDITION BASED MOBILE APPLICATION CHEMISTCLOPEDIA ON HYDROCARBON AND PETROLEUM AS LEARNING MEDIA FOR SENIOR HIGH SCHOOL STUDENTS

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## Abstract

The development Information and Communication Technology (ICT) has changed the way of working and learning. Education is dramatically influenced by the development digital technology such as mobile learning. In Indonesia, the development is also supported by large numbers of mobile devices that are easily accessed by students. This research developed *Java 2 Micro Edition (J2ME)*-based mobile chemistry encyclopedia called *Chemistclopedia* on the topic of Hydrocarbon and Petroleum for Senior High School students.

The development of the *Chemistclopedia* used Brog and Gall Educational development model. The steps of the research were analysis, design, development, implementation and field test. Early product of the media was reviewed and evaluated by experts of chemistry learning material and multimedia, as well as peer reviewers. Finally, the product was assessed by 5 Chemistry teachers, and was field-tested to 50 students of Senior High School at Sedayu, Bantul Yogyakarta for the media quality.

This research developed the mobile application *Chemistclopedia* on Hydrocarbon and Petroleum using *J2ME*. The assessment by 5 Chemistry teachers and 50 students showed that the media was **Very Good in quality**, and so it is eligible to be used as a proper learning media to learn chemistry, especially on the topic of Hydrocarbon and Petroleum.

*Keywords:* ICT; Learning media; Mobile Learning; Chemistry Encyclopedia; *Chemistclopedia*.

## 1. Introduction

### a) Background

The developments in science and technology have brought changes in almost all aspects of human life. Various problems can only be solved by mastery and development of science and technology. The changes lead people to a tighter global competition. Therefore, the quality of human resources needs to be improved and developed in a planned, focused, intensive, effective and efficient development process[1]. Electronic learning media used as learning resources to integrate Information and Communications Technologies (ICT) in the preparation and delivery of teaching or learning activities for instructional management and professional development purposes. Media selection analysis must evaluate general and specific criteria, including instructional, student, and cost aspects for each delivery technology to ensure attainment of the instructional goal. The number of students who already has phones that provide opportunities for students to used as learning media. Mobile phones availability of supporting mobile learning media that can be accessed by mobile devices such as mobile phones, PDAs, laptops, tablet PCs, providing a high flexibility for students to access the material without being limited by space and time.

The use of mobile technology has not only focus as a means of communication, or entertainment, but it is used as a learning. The research from several studies that utilize mobile phones technology as a learning media. Such as mobile research service developed by the school, where mobile phones technology is used as a means of learning media to students at the University

  
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