

# PROGRAM



## PROGRAM AT GLANCE

<b>Tuesday, October 25, 2011</b>															
18:00-21:00	Social Icebreaker									Solmaru (Cafeteria)					
<b>Wednesday, October 26, 2011</b>															
08:30-09:00	Registration									Lobby					
09:00-09:40	Opening Ceremony									Main Room					
09:40-10:40	Plenary Session [David Treagust]									Main Room					
10:40-11:00	Coffee Break									Lobby					
11:00-12:00	Invited Speech 1 [Shinho Jang]			Room2	Invited Speech 2 [Lingbiao Gao]			Room3							
12:00-13:00	Lunch (Lunch Box)									Main Room					
13:00-14:00	Invited Speech 3 [Brian Hand]			Room2	Invited Speech 4 [Michael Matthews]			Room3							
14:00-14:20	Coffee Break									Lobby					
14:20-15:20	*P1-A		Main Room	P1-B		Main Room	*SD1-A		Main Room	SD1-B	Lobby				
15:10-15:20	Coffee Break									Lobby					
15:20-16:20	*IW1 [Hiroki Fujii, Haruo Ogawa]		Room1	IW2 [Steven Chapman]		Room2	*CW1		Room3	CW2	Room4	CW3	Room5		
16:20-16:40	Coffee Break									Lobby					
16:40-18:20	*O1-A		Room1	O1-B		Room2	O1-C		Room3	O1-D	Room4	O1-E	Room5	O1-F	Room6
19:00-21:00	EASE Executive Board Meeting														
<b>Thursday, October 27, 2011</b>															
08:30-09:00	Registration									Lobby					
09:00-10:00	Invited Speech 5 [Justin Dillon]			Room2	Invited Speech 6 [Joseph Krajcik]			Room3							
10:00-10:20	Coffee Break									Lobby					
10:20-11:40	O2-A		Room1	O2-B		Room2	O2-C		Room3	O2-D	Room4	O2-E	Room5	O2-F	Room6
11:40-11:50	Break														
11:50-12:20	EASE General Assembly									Main Room					
12:20-13:20	Lunch (Lunch Box)									Main Room					
13:20-14:20	O3-A		Room1	O3-B		Room2	O3-C		Room3	O3-D	Room4	O3-E	Room5	O3-F	Room6
14:20-14:40	Break														
14:40-15:40	P2-A		Main Room	P1-B		Main Room	SD2-A		Main Room	SD2-B		Lobby			
15:40-16:40	IW3 [Chiaju Liu]		Room1	CW4		Room2	CW5		Room3	CW6		Room4	CW7	Computer Lab	
16:40-17:00	Coffee Break									Lobby					
17:00-18:40	O4-A		Room1	O4-B		Room2	O4-C		Room3	O4-D	Room4	O4-E	Room5	O4-F	Room6
18:40-19:00	Moving to Conference Banquet Venue														
19:00-21:00	Conference Banquet									Gwangju Rammada Plaza Hotel					
<b>Friday, October 28, 2011</b>															
08:30-09:00	Registration									Lobby					
09:00-10:00	O5-A		Room1	O5-B		Room2	O5-C		Room3	O5-D	Room4	O5-E	Room5	O5-F	Room6
10:00-10:20	Coffee Break									Lobby					
10:20-11:00	IW4 [Jongwon Park]		Room1	Regional Special Session		Room2	CW8		Room3	CW9		Room4	CW10		Room5
11:00-12:00	P3-A		Main Room	P3-B		Main Room	SD3-A		Main Room	SD3-B		Lobby			
12:00-13:00	Lunch									Solmaru (Cafeteria)					
13:00-14:20	O6-A		Room1	O6-B		Room2	O6-C		Room3	O6-D	Room4	O6-E	Room5	O6-F	Room6
14:20-14:30	Break														
14:30-15:00	Closing Ceremony									Main Room					
15:00-	Educational Visiting														
<b>Saturday, October 29, 2011</b>															
09:00-	Cultural Visiting														

\* O: Oral Presentations; P: Poster Exhibition; IW: Invited Workshop; CW: Contributed Workshop; SD: Science Demonstration

# PROGRAM

## PROGRAM

<b>Tuesday, October 25, 2011</b>		<b>Venu: Solmaru</b>
<b>18:00-21:00</b>	<b>Social Icebreaker</b>	<b>Solmaru (Cafeteria)</b>
<b>Wednesday, October 26, 2011</b>		<b>Venu: Haeoreumgwan</b>
<b>08:30-09:00</b>	<b>Registration</b>	<b>Lobby</b>
<b>09:00-09:40</b>	<b>Opening Ceremony</b> <i>chair: Young-Shin Park (Chosun University, Korea)</i>  Opening Address: Byung Soon Choi (Chair, Organizing Committee) Congratulatory Address : Jong Yoon Park (President, Korean Association of Science Education), Byung-Ghi Jang (President, Korean Society of Elementary Science Education), Jinwoong Song (President, EASE) Words of Encouragement: Ho Jong Jeon (President, Chosun University, Korea)	<b>Main Room</b>
<b>09:40-10:40</b>	<b>Plenary Session</b> <i>chair: Masakata Ogawa (Tokyo University of Science, Japan)</i>  Why is an Understanding of Multiple Representations so Important in Learning Science? David Treagust (Curtin University, Australia)	<b>(p. 30)</b> <b>Main Room</b>
<b>10:40-11:00</b>	<b>Coffee Break</b>	<b>Lobby</b>
<b>11:00-12:00</b>	<b>Invited Speech 1</b> <i>chair: Sung-Tao Lee (National Taichung University of Education, Taiwan)</i>  Building a Community of Practice for Facilitating Informal Scientific Inquiry Activities in Korea Shinho Jang (Seoul National University of Education, Korea)	<b>(p. 36)</b> <b>Room2</b>
	<b>Invited Speech 2</b> <i>chair: Sunyoung Kim (Chosun University, Korea)</i>  A Review on Primary School Science Textbook in China: Features and perceptions of students and teachers Lingbiao Gao (South China Normal University, China Mainland)	<b>(p. 42)</b> <b>Room3</b>
<b>12:00-13:00</b>	<b>Lunch (Lunch box)</b>	<b>Main Room</b>
<b>13:00-14:00</b>	<b>Invited Speech 3</b> <i>chair: Alice S. L. Wong (The University of Hong Kong, Hong Kong)</i>  An Immersion Approach to Argument Based Inquiry – Does It Look the Same in Different Countries? Brian Hand (University of Iowa, USA)	<b>(p. 45)</b> <b>Room2</b>
	<b>Invited Speech 4</b> <i>chair: Hye-Gyoung Yoon (Chuncheon National University of Education, Korea)</i>  Lighting the World with Science: Lessons from the Role of Science in the European Enlightenment Michael R. Matthews (University of New South Wales, Australia)	<b>(p. 55)</b> <b>Room3</b>
<b>14:00-14:20</b>	<b>Coffee Break</b>	<b>Lobby</b>
<b>14:20-15:20</b>	<b>Poster Exhibition 1-A</b>	<b>(p. 92)</b> <b>Main Room</b>
	<b>P1-A1</b> Application of Problem-Based Projects to Increase Meaning-Making in the Science Classroom Highmy Herbers*, Chang Seob Kwon, Sukkyoo Lee, Jung Hoon Ahn, In Jeong Ko, Kwang Il Kang (Korea Science Academy of KAIST, Korea)	
	<b>P1-A2</b> Analysis of Verbal Interaction on the Process of Elementary Students' Hypothesis Generation Learning Hee-Young Park, Il-Sun Lee*, Won-Jung Kim, Yong-Ju Kwon (Korea National University of Education, Korea)	
	<b>P1-A3</b> A Study of Designing Science Toys into Science Instruction for 4th Graders Ching-san Lai*, Fang-chu Wang <sup>1</sup> (National Taipei University of Education, Taiwan), (Ze-hsin Elementary School, Taiwan) <sup>1</sup>	
	<b>P1-A4</b> A Study of Project-Based Learning on the Unit of Electric Circuit for 4th Graders Ching-san Lai*, Shu-yuan Lin <sup>1</sup> (National Taipei University of Education, Taiwan), (Wen-de Elementary School, Taiwan) <sup>1</sup>	
	<b>P1-A5</b> Comparative Study of Trends and Patterns within the Test Content between Junior High School Science Textbooks and Ehime Prefecture's High School Entrance Examination Takekuni Yamaoka*, Manabu Sumida <sup>1</sup> , Hayashi Nakayama <sup>2</sup> (Yuge Upper Secondary School, Japan), (Ehime University, Japan) <sup>1</sup> , (University of Miyazaki, Japan) <sup>2</sup>	
	<b>P1-A6</b> Mathematics Puzzle as an Effective Advance Organizer for Mathematics Learning Hisato Mizushima*, Akihiko Shimano, Haruka Bungo, Marina Umeda, Soichiro Nagaya (Graduate School of Tokyo University of Science, Japan)	

**Wednesday, October 26, 2011**

**Venu: Haeoreumgwan**

**14:20-15:20**

- P1-A7 Inventive Thinking Skills at an Early Age: Comparison between Malaysia and Brunei**  
Kamisah Osman\*, Maria Abdullah<sup>1</sup> (The National University of Malaysia, Malaysia), (MOE, Brunei Darussalam)<sup>1</sup>
- P1-A8 Grade 10 Students' Concepts About Atomic Structure**  
Anusit Kueakool\*, Pattamaporn Pimthong (Khon Kean University, Thailand)
- P1-A9 Discussion of Teaching methods about the Theory of Relativity in Physics in Busan Science High School**  
Jeonghoon Hwang\*, Youngmin Kim (Pusan National University, Korea)
- P1-A10 The Characteristics of Perceptual Change in the Nature of Science of Students Studying Arts through Explicit Instructions**  
Hee Jung Kim\*, Sung-Won Kim (Ewha Womans University, Korea)
- P1-A11 The Impact of Multimodal Representation-Based Lesson on High School Students' Understanding of Science Concept and Embeddedness of Multimodal Representation in Writing**  
Youngho Nam\*, Jeonghee Nam, Hye Sook Cho (Pusan National University, Korea)
- P1-A12 A Study of Using Newspaper in Education into Science Learning for 6th Graders**  
Ching-san Lai\*, Yun-fei Wang<sup>1</sup> (National Taipei University of Education, Taiwan), (Taoyuan Zhuang-Jing Elementary School, Taiwan)<sup>1</sup>
- P1-A13 Promoting 5th Grade Students' Scientific Concept Construction, Reasoning and Inquiry through Scientific Inquiry Instruction**  
Chun-Tien Chen, Hsiao-Ching She, Wen-Chi Chou\* (National Chiao Tung University, Taiwan)
- P1-A14 Experimental Studies Aimed at Teaching New Course of Study in Response to the High School Biology in Japan.**  
Shinki Ishikawa, Hisataka Ohta, Minoru Itoh\* (Tokyo University of Science, Japan)
- P1-A15 Educational Experiment under the Microgravity Condition in a Parabolic Flight of MU-300.**  
Seiko Yajima\*, Masafumi Watanabe, Takumi Hasegawa, Masahiro Kamata (Graduate School of Tokyo Gakuji University, Japan)
- P1-A16 Critical Thinking and Learning Achievement by the Open Inquiry Learning Activities**  
Charoenkhul Rattanavongsa\*, Bunterm Tasanee<sup>1</sup> (khon khan university, Thailand), (Khon Kaen University, Thailand)<sup>1</sup>
- P1-A17 A Narrative Inquiry of an Exemplary Science Teacher's Professional Growth**  
Ching-san Lai\*, Hsiu-chi Hsieh<sup>1</sup>, Pei-je Chen (National Taipei University of Education, Taiwan), (Ren Ai Elementary School, Taiwan)<sup>1</sup>
- P1-A18 Item Analysis of Test of Using Scientific Evidence for Pre-Service Elementary School Teachers in Taiwan**  
Chih-Chiang Yang\*, Hui-Fang Chan (National Taipei University of Education, Taiwan)
- P1-A19 Middle School Students' Knowledge State Analysis about Light**  
Hyong-Jae Lee\*, Ji-Seon Ha, Sang-Tae Park (Kongju National University, Korea)
- P1-A20 The Specialization of Mathematics and Science Textbook Approval System in Korea**  
Eunjin Pyeon\*, Jonghyeun Yun (Korea Foundation for the Advancement of Science & Creativity, Korea)
- P1-A21 Difficulties Encountered in Understanding Acid-Base Chemistry**  
Romkiao Artdej\* (Khon Kaen University, Thailand)
- P1-A22 Assessment of Development of Chemistry Epistemic Style of High School Students**  
Yao Zhi\*, Lei Wang (Beijing Normal University, China Mainland)
- P1-A23 Screening Gifted Students in Science through Observation in the Classroom**  
Sung-Soo Jun\*, Ho-Kam Kang<sup>1</sup> (Kyungwon University, Korea), (Gyeongin National University of Education, Korea)<sup>1</sup>
- P1-A24 Development of Teaching Materials for Underachievers in Middle School Science**  
Hyang Suk Kim\*, Byung Soon Choi (Korea National University of Education, Korea)

**Poster Exhibition 1-B**

**(p. 99)**

**Main Room**

- P1-B1 Developing Web-Based Virtual Geological Field Trip Using Flash Panorama and Exploring its Utilization**  
Ki-Young Lee\* (Kangwon National University, Korea)
- P1-B2 The Impacts on Science Learning Using a Microcomputer-Based Laboratories Instruction**  
Huang-Ming Huang\*, Jong-Pyng Chyuan (National Taipei University of Education, Taiwan)
- P1-B3 Sixth Graders' Learning of Animal Classification with Internet Resources: Higher Achievers vs Lower Achievers**  
Ngai-Ying Fiona Ching\*, Wing-Mui Winnie So (The Hong Kong Institute of Education, Hong Kong)
- P1-B4 The Impact of On-Line Inquiry Learning on Students Competencies in Identifying Scientific Question and Scientific Explanation Ability**  
Mei-Hsian Chen, Hsiao-Ching She, Kevin Lai\* (National Chiao Tung University, Taiwan)
- P1-B5 Development of an Eco-Friendly Animation-Based Courseware Using Multi-Media for Primary and Secondary School Students in Environmental Education**  
Kew-Cheol Shim\*, Keum-Hyun So<sup>1</sup>, Sung-Hee Yeau<sup>2</sup>, Ji-Hyon Kil<sup>3</sup> (Kongju National University, Korea), (Pusan National University of Education, Korea)<sup>1</sup>, (Ewha Womans University, Korea)<sup>2</sup>, (National Institute of Environmental Research, Korea)<sup>3</sup>
- P1-B6 Visualization Materials of Geometrical Object in Junior High School Mathematics: Use of a 3D Dynamic Geometry Software**  
Mai Miyata\*, Katsuhiko Shimizu (Tokyo University of Science, Japan)
- P1-B7 Integrating Taiwan Indigenous Culture into Elementary Science Teaching**  
Huey-Lien Kao\*, Chih-Lung Lin, Ching-Yi Chang<sup>1</sup>, Wei-Min Hsu, Chi-Liang Chang (National Pingtung University of Education, Taiwan), (Tajen University, Taiwan)<sup>1</sup>
- P1-B8 The Effects of S-BEL Program on Middle School Students' Awareness about Scientific Literacy and Attitudes Changes**  
Ji Seon Ha\*, Hyeong Jae Lee, Kee Ju Jeong, Sang Tae Park (Kongju National University, Korea)

**Wednesday, October 26, 2011**

**Venu: Haeoreumgwan**

- P1-B9** Development of Scientific Creativity Behavioral Characteristics Checklist Based on Analysis on Physicists' Behavior in Growth Period  
 Wonho Shin\*, Jongwon Park<sup>1</sup> (Bigeum Middle School, Korea), (Chonnam National University, Korea)<sup>1</sup>
- P1-B10** Developing Science Learning Activities Considering Characteristics of Gifted Learner  
 Je Heung Kim\*, Chan-Jong Kim<sup>1</sup>, Seung Urn Choi<sup>1</sup> (Bucheon Buk Girls Middle School, Korea), (Seoul National University, Korea)<sup>1</sup>
- P1-B11** Improvement of Students' Problem Finding And Hypothesis Generating Ability: Gifted Science Education Program Utilizing Darwin's Theory of Evolution  
 Bong-Seon Kim\*, Soon-Ok Kim, Eun-Joo Kim, Hae-Ae Seo (Pusan National University, Korea)
- P1-B12** The Effect of Scaffolding Instruction on Improving Argumentation Skills of the Sixth Grade Students in Socioscientific Contexts  
 Shu-Sheng Lin\*, Yen-Cheng Su (National Chiayi University, Taiwan)
- P1-B13** By Construction of Concept Map to Investigate What is the Necessary Literacy of Grade 3 to 12 Students in Nano-Science  
 Chih-Hsiung Ku\*, Yao-Chou Ho, Yi-Ji Tsai (National Dong Hwa University, Taiwan)
- P1-B14** Socioscientific Issues as an Instructional Tool for Creativity and Character (CreActer) Education  
 Jung-eun Yang, Hyunjeong Kim\*, Lei Gao<sup>1</sup>, Eunjin Kim<sup>1</sup>, Hyunju Lee<sup>1</sup> (Banghak Middle School, Korea), (Ewha Womans University, Korea)<sup>1</sup>
- P1-B15** Media Influence on Korean Middle School Students' Decision-Making of Nuclear Power Generation Issues  
 Hyunok Lee\*, Eun-hang Lee, Jinhee Kim, Ja-hee Lee (Ewha Womans University, Korea)
- P1-B16** Evaluation of the Effect of Competence Indicators on Energy Conservation and Carbon Reduction Camp  
 Pei-Hsuan Lan, Chih-Chun Hsu, En-Tsun Chou, Hsueh-Chih Chen\*, Hak-Ping Tam (National Taiwan Normal University, Taiwan)
- P1-B17** Scientific Literacy Reflected within Decision Making: Based on Written Decision Making about Socio-Scientific Issues  
 SunYoung Ko\*, SeungUrn Choi<sup>1</sup> (Shinhyun Middle School, Korea), (Seoul National University, Korea)<sup>1</sup>
- P1-B18** Merapi Mountain Eruption and its Potency for Socioscientific Issues Education  
 Agung Wijaya Subiantoro Chusairi\* (Yogyakarta State University, Indonesia)
- P1-B19** A Consideration of the Science Class with the Theme of Color of Natural Things as Traditional Culture in Japan  
 Kazushige Mizobe\* (Hyogo University of Teacher Education, Japan)
- P1-B20** Challenge to Special Education Program for Gifted and Talented Children in Science Education in Japan -The Exploratory Study  
 Tateo Hashimoto, Yukari Hashimoto\*<sup>1</sup> (Nagasaki University, Japan), (Fukuyama University, Japan)<sup>1</sup>

## Science Demonstration 1-A

(p. 77)

Main Room

- SD-A1** Electrolysis and Fuel Cell  
 Woongmook Lim\* (Teachers Bonding Over Chemistry (Whasamo), Korea)
- SD-A2** Oxidation and Reduction of Copper  
 YoungChoul Park\* (YeoSu High School, Korea)
- SD-A3** Molar Volume of a Gas  
 Eugene Wee\* (Teachers Bonding Over Chemistry (Whasamo), Korea)
- SD-A4** The Generation of Chlorine, the Reaction  
 Gyeong hwan Hong\* (Teachers Bonding Over Chemistry (Whasamo), Korea)
- SD-A5** Identification of Ions by Using Universal Indicator  
 Moonseok Go\* (Teachers Bonding Over Chemistry (Whasamo), Korea)
- SD-A6** Hydrogen Gas Formation Experiment  
 Kyunghwan Mun\* (Teachers Bonding Over Chemistry (Whasamo), Korea)
- SD-A7** The Principle of Convection  
 Dok Il Kim\* (Incheon Electronic Meister High School, Korea)
- SD-A8** How to Make a Color Ice Pack  
 KyoungHyun Jang\*, Dok Il Kim (Incheon Metropolitan City Office of Education, Korea)
- SD-A9** The Effect of The Open Inquiry Learning Activities on Problem Solving Ability, and Learning Achievement  
 Penporn Wangpoomyai\*, Tassance Bunterm (Khon Kaen University, Thailand)
- SD-A10** Psychic Tricks?  
 Nelson C. C. Chen\*, Angie Y. C. Chen, Young-Shin Park<sup>1</sup>, Claudia H. W. Wang<sup>2</sup>, Kai C. K. Chang<sup>2</sup>, Afra H. F. Kuo<sup>2</sup> (National Science and Technology Museum, Taiwan), (Chosun University, Korea)<sup>1</sup>, (National Kaohsiung First University of Science and Technology, Taiwan)<sup>2</sup>

## Science Demonstration 1-B

(p. 79)

Lobby

- SD-B1** To Observe Resonances with a Double Pendulum  
 Ho Jin Min\* (Wolgye Middle School, Korea)
- SD-B2** Confirming Stationary Waves through Flames  
 Hak Tae Kim\* (Munjung Girl's High School, Korea)
- SD-B3** Simple Hydraulic Equipment made by Ordinary Straw and Plastic Bag  
 Duk Young Kim\* (Unnam Middle School, Korea)
- SD-B4** Cotton Combustion by Gas Adiabatic Compression in an Airtight Container  
 Jin-ho Choi\* (Chosun University High School, Korea)

## Wednesday, October 26, 2011

Venu: Haeoreumgwan

<b>15:20-16:20</b>	<b>Invited Workshop 1</b> <i>chair: Ki-Young Lee (Kangwon National University, Korea)</i> Chemical Education for Creativity: Knowledge, Judgment, and Representation Hiroki Fujii, Haruo Ogawa <sup>1</sup> (Okayama University, Japan), (Tokyo Gakugei University, Japan) <sup>1</sup>	<b>(p. 62)</b>	<b>Room1</b>
	<b>Invited Workshop 2</b> <i>chair: Yong Jae Joung (Gongju National University of Education, Korea)</i> Small Intervention: Big Changes? Changing Pre-service Teachers Ideas About forces Steven Chapman (University of London, UK)	<b>(p. 69)</b>	<b>Room2</b>
	<b>Contributed Workshop 1</b> <i>chair: Chi-Jui Lien (National Taipei University of Education, Taiwan)</i> Science Education Content Standards for National K-12 Science Curriculum in Korea Yoon-Su Baek, Sukgoo Loh <sup>1</sup> , HyunJu Park <sup>2</sup> , Youngmin Kim <sup>3</sup> , Jin-soo Jeong <sup>4</sup> , Eun Ah Lee <sup>5</sup> , Eunjeong Yoo <sup>6</sup> , Dongwook Lee <sup>7</sup> , Jongwon Park <sup>8</sup> (Yonsei University, Korea), (Gyeongin University of Education, Korea) <sup>1</sup> , (Chosun University, Korea) <sup>2</sup> , (Pusan National University, Korea) <sup>3</sup> , (Daegu University, Korea) <sup>4</sup> , (Seoul National University, Korea) <sup>5</sup> , (Shinsa Middle School, Korea) <sup>6</sup> , (KOFAC, Korea) <sup>7</sup> , (Chonnam National University, Korea) <sup>8</sup>	<b>(p. 75)</b>	<b>Room3</b>
	<b>Contributed Workshop 2</b> <i>chair: Mariko Suzuki (Shiga University, Japan)</i> Development of Instruction Modules of Molecular Biology Experiment for High School Students using the DNA of Human Oral Cavity Epithelial cells Jeong-Im Woo (Chungdam High School, Korea)	<b>(p. 75)</b>	<b>Room4</b>
	<b>Contributed Workshop 3</b> Computer-Based Physics Laboratory: Use of Moving Picture System Kiyoung Kim (Segye Scientific Co., Korea)	<b>(p. 76)</b>	<b>Room5</b>
<b>16:20-16:40</b>	<b>Coffee Break</b>		<b>Lobby</b>
<b>16:40-18:20</b>	<b>Oral Presentation 1-A</b> <i>chair: Yew-Jin Lee (Nanyang Technological University, Singapore)</i>	<b>(p. 80)</b>	<b>Room1</b>
	<b>01-A1</b> Inquiry-Science in a Straightjacket?: The Interplay of People, Policies, and Place in an East-Asian Developmental State Yew-Jin Lee* (Nanyang Technological University, Singapore)		
	<b>01-A2</b> Development and the Effects of New Measurement Experiments for the Earth Size Donghyun Chae* (Jeonju National University of Education, Korea)		
	<b>01-A3</b> A Study of Constructing Multimedia to Enhance Science Learning for 5th Graders Ching-san Lai*, Ming-horng Lai <sup>1</sup> (National Taipei University of Education, Taiwan), (Wan-da Elementary School, Taiwan) <sup>1</sup>		
	<b>01-A4</b> The Impacts of the Inquiry-Based General Chemistry Laboratory using the Reading frame-based Science Writing Heuristic Approach on College Students' Reflective Thinking Eun-A Heo*, Jeonghee Nam (Pusan National University, Korea)		
	<b>01-A5</b> A Literature Review of the Role of Morality in Teaching and Learning Socio-Scientific Issues Jisun Park*, Jinwoong Song (Seoul National University, Korea)		
	<b>Oral Presentation 1-B</b> <i>chair: Youngshin Kim (Kyungpook National University, Korea)</i>	<b>(p. 81)</b>	<b>Room2</b>
	<b>01-B1</b> Analysis of Changes in the Ecological Niche of the Concept of Photosynthesis in 7th Grade through Lessons Soomin Lim*, Youngshin Kim (Kyungpook National University, Korea)		
	<b>01-B2</b> Comparing Scientists' Views of Nature of Science within and across Disciplines, and Levels of Expertise Praweena Tira*, Valarie Akerson <sup>1</sup> , (Institute for the Promotion of Teaching Science and Technology, Thailand), (IUB, USA) <sup>1</sup>		
	<b>01-B3</b> Investigation of the Effects of a Visualisation-Based Multimedia Instructional Program on Students' Understanding of Multiple Representations in Electromagnetic Induction Concepts Hye-Eun Chu*, Jennifer Yeo, Charles Chew <sup>1</sup> , Teck Chee Chia (Nanyang Technological University, Singapore), (Academy of Singapore Teacher, Singapore) <sup>1</sup>		
	<b>01-B4</b> Using Video Analysis and Cogenerative Dialogues to Expand Science Teaching and Learning Opportunities for Teachers and Students in Urban Schools Sonya Martin* (Seoul National University, Korea)		
	<b>01-B5</b> Validity and Reliability of the Science Motivation Questionnaires with Korean College Students Kongju Mun*, Sung-Youn Choi, Sung-Won Kim (Ewha Womans University, Korea)		
	<b>Oral Presentation 1-C</b> <i>chair: Yoon Fah Lay (Universiti Malaysia Sabah, Malaysia)</i>	<b>(p. 83)</b>	<b>Room3</b>

**Wednesday, October 26, 2011**

**Venu: Haeoreumgwan**

- 01-C1** An Investigation on the Relationships between Pre-Service Science Teachers' Science Teaching Efficacy Belief and Self-Image as Science Teachers  
Yoon Fah Lay\*, Chwee Hoon Khoo<sup>1</sup> (Universiti Malaysia Sabah, Malaysia), (Teacher Education Institute-Kent Campus, Malaysia)<sup>1</sup>
- 01-C2** Elementary Teachers' Conceptions of Science Inquiry Teaching: Cases of South Korea, Singapore and United States  
Hye-Gyoung Yoon\*, Nam-Hwa Kang<sup>1</sup>, Mijung Kim<sup>2</sup> (Chuncheon National University of Education, Korea), (Oregon State University, USA)<sup>1</sup>, (University of Victoria, Canada)<sup>2</sup>
- 01-C3** A PD model of Teachers for Promoting Understanding of Science  
Irene Poh-Ai Cheong\*, I. J. Kyeleve, Hjh Sallimah Hj Mohd. Salleh, Roslinawati Mohd. Roslan (Universiti Brunei Darussalam, Brunei Darussalam)
- 01-C4** Development of a Professional Development Model for Improving Science and Mathematics Teaching in Thailand  
Pornpun Waitayangkoon\* (The Institute for the Promotion of Teaching Science and Technology, Thailand)
- 01-C5** Explore Chemistry Teacher's Teaching Conceptions System Directing to Teaching Behaviors in the Context of New Curriculum Reform in China  
Lei Wang\*, Yanning Huang<sup>1</sup> (Beijing Normal University, China Mainland), (Capital Normal University, China Mainland)<sup>1</sup>

**Oral Presentation 1-D**

**(p. 85)**

**Room4**

*chair: Malinee Chaiyabang (Khon Kaen University, Thailand)*

- 01-D1** Exploring Thai Elementary School Teachers' Understanding of Concepts and Instruction of the Nature of Science  
Malinee Chaiyabang\*, Kongsak Thathong, Frank Jenkins<sup>1</sup> (Khon Kaen University, Thailand), (University of Alberta, Canada)<sup>1</sup>
- 01-D2** The History of Science Approach to the Nature of Science: Galileo's Discovery of Moons of Jupiter and the Return of Halley's Comet  
Jun-Young Oh\*, YoungHo Kim (Hanyang University, Korea)
- 01-D3** Integrating Webquests into Chemistry Classroom Teaching to Promote Critical Thinking  
Qing Zhou\*, Huiji Yue<sup>1</sup>, Hong Tian, Changying Yin<sup>2</sup> (School of Chemistry and Materials Science of Shaanxi Normal University Xi'an, China Mainland), (School of Physics and Information Technology of Shaanxi Normal University, Xi'an, China Mainland)<sup>1</sup>, (Xi' dian Middle School attached to Xidian University Xi'an, China Mainland)<sup>2</sup>
- 01-D4** Teachers' Conceptions of Teaching and Learning with Internet Resources in Science Inquiry Classrooms  
Wing-Mui Winnie So, Ngai-Ying Fiona Ching\* (The Hong Kong Institute of Education, Hong Kong)
- 01-D5** Teaching Biological Processes Using Curriculum Materials based on 3-D Computer Animations  
Kyung-A Kwon\*, J. Steve Oliver (University of Georgia, USA)

**Oral Presentation 1-E**

**(p. 87)**

**Room5**

*chair: Hang-Hwa Hong (Western Michigan University, USA)*

- 01-E1** Developing Teaching Materials of Scientific Creativity related to Biological Contents and Pilot Application to Gifted Science Students  
Hang-Hwa Hong\* (Western Michigan University, USA)
- 01-E2** Characters of Scientist's Problem Finding and Solving Activities Compared with Those of High School Students  
Eugene Kang\*, Jina Kim (Pusan National University, Korea)
- 01-E3** Types of Models and Modeling Behavior of Biology Majors: Implications for Critical Thinking Development  
Jocelyn Partosa\* (Ateneo de Zamboanga University, The Philippines)
- 01-E4** The Effect of "Learn to Think" Curriculum on the Scientific Creativity of Secondary School Students  
Weiping Hu\* (Shaanxi Normal University, China Mainland)
- 01-E5** Investigating in Students, Teachers' and Parents' Recognition about Contrary Views on Scientific Creativity  
Jongwon Park, Kyoungjun Jee\*<sup>1</sup> (Chonnam National University, Korea), (Moonwoo Elementary School, Korea)<sup>1</sup>

**Oral Presentation 1-F**

**(p. 89)**

**Room6**

*chair: Hongming Ma (Monash University, Australia)*

- 01-F1** Using Native Knowledge to Explore Science Teachers' Understanding of the Nature of Science: A Chinese study  
Hongming Ma\* (Monash University, Australia)
- 01-F2** In between Science and People: A Comparative Life Story of Three British Scientists who hoped to change the Society  
Jinwoong Song\* (Seoul National University, Korea)
- 01-F3** To Explore the EEG Alpha and Theta Activity During Processing of Biology Concepts  
Wen-Chi Chou\*, Hsiao-Ching She, Li-Yu Huang (National Chiao Tung University, Taiwan)
- 01-F4** Expanding Students' Views of Science through Personal Science News Constructing  
Chun-Ju(Jerome) Huang\* (National Chung Cheng University, Taiwan)
- 01-F5** Bridging the Gap between Formal and Informal Science Education from Weather Literacy  
Yi-Ji Tsai\*, Chih-Hsiung Ku (National Dong Hwa University, Taiwan)

**19:00-21:00**

**EASE Executive Board Meeting**

**Room4**

**Thursday, October 27, 2011**

**Venu: Haeoreumgwan**

**08:30-09:00 Registration Lobby**

**09:00-10:00 Invited Speech 5 (p. 106) Room2**

*chair: Tom Thomson (Oregon Department of Education, USA)*

'Doing' Science versus 'Being' a Scientist: Examining 10/11-year-old Schoolchildren's Constructions of Science Through the Lens of Identity

Justin Dillon (King's College London, UK)

**Invited Speech 6 (p. 123) Room3**

*chair: J. Steve Oliver (University of Georgia, USA)*

Supporting Students' Integrated Understandings of Big Ideas and Scientific Practices Across Time

Joseph Krajcik (University of Michigan, USA)

**10:00-10:20 Coffee Break Lobby**

**10:20-11:40 Oral Presentation 2-A (p. 146) Room1**

*chair: Jinwoong Song (Seoul National University, Korea)*

**02-A1 Searching for Effective Instruction of Open-Inquiry: The Differences Between Students' and Teachers' Recognition of the Difficulties in Carrying Out Open-Inquiry.**

Hyojoon Kim\*, Jinwoong Song (Seoul National University, Korea)

**02-A2 Exploring Student Metacognition and Science, Technology, Society, and Environment Issues in a Thai Context**

Warawun Chantharanuwong\*, Kongsak Thatthong, Chokchai Yuenyong, Gregory P. Thomas<sup>1</sup> (Khon Kaen University, Thailand), (University of Alberta, Canada)<sup>1</sup>

**02-A3 Exploring Secondary School Students' Views of the Nature of Science in Mainland China**

Yingzhi Zhang\*, Enshan Liu<sup>1</sup> (Capital Normal University, China Mainland), (Beijing Normal University, China Mainland)<sup>1</sup>

**02-A4 Analysis of Types of Questions Embedded in Science Lessons of Japan and the United States**

April Daphne Hiwatig\*, Manabu Sumida, Hayashi Nakayama<sup>1</sup> (Ehime University, Japan), (University of Miyazaki, Japan)<sup>1</sup>

**Oral Presentation 2-B (p. 147) Room2**

*chair: Shiho Miyake (Kobe College, Japan)*

**02-B1 A Case Study of Public Science Communication in the Japanese Museum Symposium**

Shiho Miyake\* (Kobe College, Japan)

**02-B2 A Study on the Science-Gifted Camp at Educational Institutions for the Gifted**

Hyun-Chul Jung, Sun Hee Cho\*, Mi Young Kim (KAIST Global Institute For Talented Education, Korea)

**02-B3 A Science Teacher's Beliefs and Practices of Teaching Nanoscience in an Informal Setting**

Pei-Yu Hsieh\*, Mao-Jhang Luo<sup>1</sup>, Jui-Chou Cheng<sup>1</sup>, Paichi Pat Shein, Dong-Hwang Chen<sup>2</sup>, Tai-Chu Huang (National Sun Yat-Sen University, Taiwan), (National Kaohsiung Normal University, Taiwan)<sup>1</sup>, (National Cheng Kung University, Taiwan)<sup>2</sup>

**02-B4 A Study on Development and Application of a Secondary Science Teaching Model Utilizing the Faraday's Idea Developing Process**

Seong Oh Jeong\*, Youngmin Kim (Pusan National University, Korea)

**Oral Presentation 2-C (p. 148) Room3**

*chair: J. Steve Oliver (University of Georgia, USA)*

**02-C1 The Design of Knowledge Transformation System (KTS)**

Ji Shen, J. Steve Oliver\* (University of Georgia, USA)

**02-C2 Generation Green Project in Thailand: Students' Short Films to Promote the Awareness and Action for Climate Change Issues**

Suthida Chamrat\* (Bureau of Academic Affairs and Educational Standards, Thailand)

**02-C3 EEG Brain Activity in Encoding Physics-Related Concepts**

Kevin Lai\*, Hsiao-Ching She, Sheng-Chang Chen (National Chiao Tung University, Taiwan)

**Oral Presentation 2-D (p. 150) Room4**

*chair: Hunkoog Jho (Seoul National University, Korea)*

**02-D1 The Pattern of Risk Assessment and its Role in Undergraduates' Decision-Making across Socio-Scientific Issues**

Hunkoog Jho\*, Jinwoong Song, Ralph Levinson<sup>1</sup> (Seoul National University, Korea), (Institute of Education, University of London, UK)<sup>1</sup>

**02-D2 An Investigation on the Relationships between the Knowledge, Attitudes, and Behaviour Dimensions of Environmental Literacy among Urban and Rural Form 4 Students in Sabah, Malaysia**

Yoon Fah Lay\*, Chwee Hoon Khoo<sup>1</sup>, Sirisena Anuthra<sup>2</sup>, Chong Aileen<sup>2</sup> (Universiti Malaysia Sabah, Malaysia), (Teacher Education Institute, Kent Campus, Malaysia)<sup>1</sup>, (Teacher, Malaysia)<sup>2</sup>

**02-D3 Affective Learning Opportunities in Primary Science Lessons**

Kok Siang Tan\*, S Nirmala Devi Santhanam<sup>1</sup> (National Institute of Education, Singapore), (Xishan Primary School, Singapore)<sup>1</sup>



**Thursday, October 27, 2011**

**Venu: Haeoreumgwan**

- 02-D4** Analysis of Korean High School Students' Moral Reasoning Patterns: Using Essays on the Nuclear Power Generation Issue  
 Jihye Lee\*, Sumin Bae, Seungeun Lee (Ewha Womans University, Korea)

**Oral Presentation 2-E**

(p. 151)

**Room5**

*chair: Chee Leong Wong (Nanyang Technological University, Singapore)*

- 02-E1** Can Definitions contribute to Alternative Conceptions?  
 Chee Leong Wong\*, Kueh Chin Yap (Nanyang Technological University, Singapore)
- 02-E2** Effects of Cooperative Small Group Discussion on Elementary School Students' Argumentation and Attitudes toward Science in Taiwan  
 Zuway-R Hong\*, Huann-shyang Lin, Hsin-Hui Wang, Hsiang-Ting Chen, Kuay-Keng Yang (National Sun Yat-sen University, Taiwan)
- 02-E3** From Situational Interest to Individual Interest: The Impact of a Classroom Intervention on College Students' Perception of Learning Science  
 Huann-shyang Lin\*, Zuway-R Hong, Ya-Chun Chen, Kuay-Keng Yang (National Sun Yat-sen University, Taiwan)
- 02-E4** The Relationships among Pre-Service Chemistry Teachers' Attitude-Towards-Chemistry, Chemistry Self-Efficacy, and Chemistry Learning Experiences at Tertiary Level  
 Yoon Fah Lay\*, Chwee Hoon Khoo<sup>1</sup> (Universiti Malaysia Sabah, Malaysia), (Lecturer, Teacher Education Institute-Kent Campus, Malaysia)<sup>1</sup>

**Oral Presentation 2-F**

(p. 153)

**Room6**

*chair: Jocelyn Partosa (Ateneo de Zamboanga University, The Philippines)*

- 02-F1** Metacognition as a Tool in Advancing Reading Comprehension in a Science Class  
 Jocelyn Partosa\* (Ateneo de Zamboanga University, The Philippines)
- 02-F2** To What Extent are Social Constructivist Perspectives Implemented in Asian Primary Science Education? The Case of Vietnam  
 Vu Thu Hang Ngo\*, Marijn Meijer, Albert Pilot (Utrecht University, The Netherlands)
- 02-F3** Using Concept Maps as a Mean to Align Junior and Senior High School Science Curricula  
 Hak-Ping Tam\*, Choo-Chin Chen, Yi-Hsiu Yeh, Chun-Yu Tsai (National Taiwan Normal University, Taiwan)
- 02-F4** Why does Science Inquiry Stumble in the Classroom? A Meta-Analysis of Studies Dealing with Science Inquiry in Korea  
 Jina Chang\*, Jinwoong Song (Seoul National University, Korea)

**11:40-11:50**

**Coffee Break**

**Lobby**

**11:60-12:20**

**EASE General Assembly**

**Main Room**

*chair: Youngshin Park (Chosun University, Korea)*

**12:20-13:20**

**Lunch (Lunch box)**

**Main Room**

**13:20-14:20**

**Oral Presentation 3-A**

(p. 154)

**Room1**

*chair: Bongwoo Lee (Dankook University, Korea)*

- 03-A1** Unweaving Rainbow: Teaching Science Using Rainbow  
 Bongwoo Lee\*, Heekyong Kim<sup>1</sup> (Dankook University, Korea), (Kangwon National University, Korea)<sup>1</sup>
- 03-A2** Effect of Nanotechnology Instructions on Senior High School Students  
 Chow-Chin Lu\*, Chia-Chi Sung (National Taipei University of Education, Taiwan)
- 03-A3** Inquire Learning Effects to Elementary School Students' Nanotechnology Instructions  
 Yueh-Yun Chen, Chow-Chin Lu\*<sup>1</sup>, Chia-Chi Sung<sup>2</sup> (New Taipei City Sioushan Elementary School, Taiwan), (National Taipei University of Education, Taiwan)<sup>1</sup>, (National Taiwan University, Taiwan)<sup>2</sup>

**Oral Presentation 3-B**

(p. 155)

**Room2**

*chair: Kanchulee Punyain (OBEC, Thailand)*

- 03-B1** Science Project: An Innovation from School to Community (English Integrated Science Approach)  
 Kanchulee Punyain\*, Nason Phonphok<sup>1</sup>, Sitthisak Gindawong (Office of the Basic Education Commission, Thailand), (Srinakharinwirot University, Thailand)<sup>1</sup>
- 03-B2** SoSTI Course: An Elective Science Course for Thai Upper Secondary School Non-Science Students  
 Chaninan Pruekpramool\* (Science Education Center, Srinakharinwirot University and Thailand Center of Excellence in Physics, CHE, Thailand)
- 03-B3** Let me Hear your Story: Exploring the Role of Everyday Experience of Primary Students to Promote Science Discourse during Peer Discussion  
 Jijyeon Na\*, Jinwoong Song (Seoul National University, Korea)

**Oral Presentation 3-C**

(p. 157)

**Room3**

*chair: Gyoungho Lee (Seoul National University, Korea)*

- 03-C1** Exploring the Origin of a Science Teacher's Dilemma: A Case of Teaching Newton's First Law  
 Gyoungho Lee\* (Seoul National University, Korea)



**Thursday, October 27, 2011**

**Venu: Haeoreumgwan**

**13:20-14:20**

- 03-C2** Preservice Science Teachers' Awareness of Knowledge and Skills for Inquiry Teaching during Their Teaching Practices in Schools  
 Jirakan Yuenyoung, Chokchai Yuenyong\* (KhonKaen University, Thailand)

**Oral Presentation 3-D**

**(p. 157)**

**Room4**

*chair: Lilia Halim (UKM, Malaysia)*

- 03-D1** Students' Perception Concerning Science Teachers' Pedagogical Content Knowledge  
 Lilia Halim\*, Sharifah Intan Sharina Syed Abdullah, T. Subahan Meerah (UKM, Malaysia)
- 03-D2** Metacognition that Pupils Realize their Changes in Thought  
 Mitsuru Nakajo\* (Kochi University, Japan)
- 03-D3** Development of Inquiry-Based Teaching Program via PCK and UbD: A Professional Development for Biology Preservice Teacher  
 Kamonwan Klaiwong\*, Nalena Praphairaksit, Manat Boonprakob, Wanida Tanaprayothsak (Srinakharinwirot University, Thailand)

**Oral Presentation 3-E**

**(p. 159)**

**Room5**

*chair: Yu-Ling Lu (National Taipei University of Education, Taiwan)*

- 03-E1** A Preliminary Study on the Effectiveness of Integrating the Creative Thinking Teaching Approach with Educational Game Learning for Improving Traditional Science Teaching  
 Jiun-hung Chen, Chien-Ju Li\*, Chi-Jui Lien, Yu-Ling Lu (National Taipei University of Education, Taiwan)
- 03-E2** Enhancing the Creative Problem Solving Skill by Using the CPS Learning Model for Seventh Grade Students with Different Prior Knowledge Levels  
 Kanyarat Cojorn\*, Numphon Koocharoenpisal, Sunee Haemaprasth, Pramuan Siripankaew<sup>1</sup> (Srinakharinwirot University, Thailand), (Institute for the Promotion of Teaching Science and Technology (IPST), Thailand)<sup>1</sup>
- 03-E3** An Analysis of Pattern of Creative Scientist's Problem Finding and Hypothesis and Program Development for Improving Secondary School Students' Creativity through its Application: Einstein's Case  
 Jaekwon Kim\*, Youngmin Kim (Pusan National University, Korea)

**Oral Presentation 3-F**

**(p. 160)**

**Room6**

*chair: Huann-shyang Lin (National Sun Yat-sen University, Taiwan)*

- 03-F1** The Interplay of Teachers' Conceptions of Inquiry, their Curriculum Plans and Teaching Practices  
 Shu-Fen Lin, Huann-shyang Lin\*, Yi-ying Wu (National Sun Yat-sen University, Taiwan)
- 03-F2** Improving College Students Understanding of Time-Varying Velocity during Elastic Collision Using Microcomputer-Based Laboratory  
 Jong-pyng Chyuan\* (National Taipei University of Education, Taiwan)
- 03-F3** The Impact of Argument-Based General Chemistry Laboratory Investigations Using the Science Writing Heuristic (SWH) approach on College Students' Use and Embedding of Multimodal Representations in Summary Writing  
 Jeonghee Nam, Dongwon Lee\*, Hyesook Cho, Aeran Choi<sup>1</sup> (Pusan National University, Korea), (Kent State University, USA)<sup>1</sup>

**14:20-14:40**

**Break**

**14:40-15:40**

**Poster Exhibition 2-A**

**(p. 172)**

**Main Room**

- P2-A1** The Study of Exploring Elementary School Students' Scientific Explanation by Using the POE Strategies  
 Ching-Chi Chen, Chi-Jui Lien<sup>1</sup>, Yu-Ling Lu\*<sup>1</sup> (New Taipei City Chen-Gong Elementary school, Taiwan), (National Taipei University of Education, Taiwan)<sup>1</sup>
- P2-A2** The Effects of Science Writing Program on Middle School Students' Creativity and Science-Related Attitude.  
 Shin young Hwang\*, Young Ran Jeong (Ewha Womans University, Korea)
- P2-A3** Analysis of Laboratory Activities in High School Biology Textbooks Used in China and Korea  
 Seju Kim\*, Enshan Liu<sup>1</sup> (Beijing Normal University, China Mainland), (Beijing Normal University, China Mainland)<sup>1</sup>
- P2-A4** The Resource Development and Application of Visual-Analogical Learning for Understanding Conceptual Light and Waves for Middle School Students  
 Do-Wan Kim\*, Eugene Kang, Jina Kim (Pusan National University, Korea)
- P2-A5** Development of the Task-Based Assessment Tools for Scientific Creativity (TATSC)  
 Kyounghak Lee\*, Jongwon Park, Hwanjea Jung (Chonnam National University, Korea)
- P2-A6** Needs for 3D Teaching Materials in High School Biology Teaching  
 Chieko Uchiyama\*, Minoru Itoh, Keishi Kojima (Tokyo University of Science, Japan)
- P2-A7** Understanding about the Principle and the Donation of High Science and Technology through Research Activity of the Inventions  
 Seungwoo Yi\*, Hyunsuk Jeoung, Youngmin Kim (Pusan National University, Korea)
- P2-A8** A Model for the Teaching of Column Separation Science  
 Peter Peng Foo Lee\*, Yong Chua Teo, Timothy Ter Ming Tan, Kelvin Jin Tai Koh (Nanyang Technological University, Singapore)
- P2-A9** Perception and Difficulties of Teachers and Students on the Extra-Class Science Activities Operated at Science Core Schools  
 Jeehye Hong\*, Hun-Gi Hong (Seoul National University, Korea)

**Thursday, October 27, 2011**

**Venu: Haoreumgwan**

- P2-A10** The Application of the Problem-Based Learning Model for Science Unit "Environment" and Analysis of its Effects  
Sookyong Park\* (Kyungnam University, Korea)
- P2-A11** The Transfer of Competent Students' Problem Solving Strategies in Graphs to a Teaching Model in Senior High School Physics  
Jang-Jenq Chen, Ming-Jun Su<sup>1</sup>, Sung-Tao Lee\*<sup>2</sup> (Toying Senior High School, Taiwan), (Shu-Te University, Taiwan)<sup>1</sup>, (National Taichung University of Education, Taiwan)<sup>2</sup>
- P2-A12** A Study on Teacher's Awareness of Questioning and Teaching Practices in Elementary Science Class  
Min-Jung Cho, Chui Im Choi\*<sup>1</sup>, Sang-Ihn Yeo (Gyeongin University of Education, Korea), (Seoul National University, Korea)<sup>1</sup>
- P2-A13** Exploration of Energy Unit of Korean Science Textbook from an Viewpoint of 21th Century Scientific Literacy  
Kongju Mun, Miyoung Cho, Yoonsook Chung, Jiyoung Mun, Sung-Won Kim\* (Ewha Womans University, Korea)
- P2-A14** High School Students' Perception and Application of Physics Formulae  
Kyung-Hwa Park, Jiyeong Mun, Wanseon Kim, Sung-Won Kim\* (Ewha Womans University, Korea)
- P2-A15** Explore Girls' Science Self-Efficacy by Astronomy Symposium  
Ming-jun Su\* (Shu-Te University, Taiwan)
- P2-A16** Explore Elementary Teachers' Professional Knowledge of Guiding Science Fair Product by Using Different Instruction Models  
Chow-Chin Lu\* (National Taipei University of Education, Taiwan)
- P2-A17** "Finding N.E.M.O." in the Science Classroom: A Four-Step Approach to Effective Lesson Planning-Implementation  
Kok Siang Tan\* (National Institute of Education, Singapore)
- P2-A18** The Gap between Pre-Service Teachers' Implicit Knowledge and Practical Knowledge on Implementing ARCS Motivating Strategy  
Jee-Young Park\*, Ji-Eun An, Heui-Baik Kim (Seoul National University, Korea)
- P2-A19** A Case Study of an Exemplary Science Teacher's Professional Development  
Ching-san Lai\*, Pei-shan Lo<sup>1</sup>, Pei-jen Chen (National Taipei University of Education, Taiwan), (Fou Shing Elementary School, Taiwan)<sup>1</sup>
- P2-A20** A Case Study of Integrated Science Instruction by Pre-Service Science Teacher Applied Science Instructional Models  
Yeon-a Son, Seokjun Hong\*, Jiyong Kim (Dankook University, Korea)
- P2-A21** A Study on the Recognition and Requirements on The Integrative STEM Education  
Hyonyong Lee\*, Hyeryoung An, Jungchul Nam<sup>1</sup>, Youngjae Oh<sup>2</sup>, Heejin Oh, Yongki Kim<sup>2</sup>, Dongil Sohn<sup>3</sup>, Bohyun Seo<sup>4</sup>, Youngeun Lee<sup>5</sup>, Hyuksoo Kwon<sup>6</sup>, Kyunsuk Park (Kyungpook National University, Korea), (Hyunpoong Elementary School, Korea)<sup>1</sup>, (Hwadong Elementary School, Korea)<sup>2</sup>, (Hosan High School, Korea)<sup>3</sup>, (Kyungil Middle School, Korea)<sup>4</sup>, (Jinpyung Middle School, Korea)<sup>5</sup>, (Gongju National University of Education, Korea)<sup>6</sup>

## Poster Exhibition 2-B

(p. 178)

**Main Room**

- P2-B1** A New Astronomy Education Web Site for Child-Care Support People  
Akihiko Tomita\* (Wakayama University, Japan)
- P2-B2** Development of Professional Competency Indicators for Mathematics Pre-service Teachers in Taiwan Junior High Schools  
Chih-Chiang Yang\*, Dun-Yao Lin<sup>1</sup> (National Taipei University of Education, Taiwan), (Taipei Municipal Zhongshan Junior High School, Taiwan)<sup>1</sup>
- P2-B3** Examining Pre-service Physics Teachers' Conceptualizations of Teaching about Light Properties  
Chokchai Yuenyong\* (Khon Kaen University, Thailand)
- P2-B4** Teacher's Response Change to Students' Incorrect Answers in Earth Science Classroom  
Hye Jin Han\*, Hye Jun Im, Chan-Jong Kim (Seoul National University, Korea)
- P2-B5** Korean Science Teachers' Pedagogical Content Knowledge (PCK) Represented in Teaching Practice at Middle School Classroom  
Seonghey Paik, Eun-Jung Bang, Jeong-Ae Won\*, Hee-Jung Min, Sang-Hui Lee, Eun-Jung Shin (Korea National University of Education, Korea)
- P2-B6** Why We need Better Pedagogical Approach Physics Education in Korea: A Case Study of In-Service Teachers' Difficulties in Electricity  
Jung Sook Lee\*, Jung Bog Kim<sup>1</sup> (Seoul National University, Korea), (Korea National University of Education, Korea)<sup>1</sup>
- P2-B7** The Genesis of Math Affect  
Roger Marapo\*, Jonny Porne<sup>1</sup>, Naci John Trance<sup>2</sup> (University of St. La Salle, The Philippines), (University of the Philippines in the Visayas, The Philippines)<sup>1</sup>, (Western Visayas College of Science and Technology, The Philippines)<sup>2</sup>
- P2-B8** Toulmin's Approach to Develop New Teaching Strategies of Argument-Centered Science Learning  
Man-Seog Chun\*, Young-Shin Park<sup>1</sup> (Korea Science Academy of KAIST, Korea), (Chosun University, Korea)<sup>1</sup>
- P2-B9** Exploring Secondary Preservice Earth Science Teachers' Abilities of Developing Inquiry Questions  
Jung-Hoon Kim\*, Se-Hwan Jeong, Hyoung-Bum Kim<sup>1</sup>, Young-Shin Park (Chosun University, Korea), (Korea National University of Education, Korea)<sup>1</sup>
- P2-B10** Motivation Factors Among Non-Science Students  
Nilda W. Balsicas\*, Rosalina M. Makalintal<sup>1</sup> (St. Dominic College of Asia Philippines, The Philippines), (La Consolacion College Manila, The Philippines)<sup>1</sup>
- P2-B11** Study about Decision-Making of College Students Who are Enrolled in Liberal Art Class Related to Science  
Yoonsook Chung\*, Sung-Won Kim (Ewha Womans University, Korea)

**Thursday, October 27, 2011**

**Venu: Haeoreumgwan**

**14:40-15:40**

- P2-B12** The Effect of Employing Science Inquiry Question Development Guide: The Case of Biology  
Ho-Hyun Lee\*, Soo-A Kim, Young-Kyo Jung, Young-Shin Park (Chosun University, Korea)
- P2-B13** Exploring Preservice Teachers' Abilities of Developing Scientific Inquiry Questions: The Effect of Using Inquiry Question Guide Questionnaire  
Young-eun Jung\*, Hee-jin Chun, Ae-jung Kim, Won-ah Kwack, Young-Shin Park (Chosun University, Korea)
- P2-B14** The Development and Application of an Analysis Frame of Error Type for High School Students' Observation in Biology Experiments Using Microscopes  
Hyun-Jung Jin, Jung-Ho Byeon\*, Seung-Hyuk Kwon, Yong-Ju Kwon (Korea National University of Education, Korea)

**Science Demonstration 2-A**

**(p. 143)**

**Main Room**

- SD2-A1** Atwood's Machine  
Jong Deok Chung\* (Samhyun Girl's High School, Korea)
- SD2-A2** Interesting Electricity  
Jongwon Park, Jin-kuk Kim\* (Chonnam National University, Korea)
- SD2-A3** Fluid Pressure, Surface Tension, Friction  
Wonho Shin\* (Bideum Middle School, Korea)
- SD2-A4** Shoot the Floating Ball in Turbulence with Automatic Bamboo Gun.  
Nelson C. C. Chen\*, Angie Y. C. Chen, Young-Shin Park<sup>1</sup> (National Science and Technology Museum, Taiwan), (Chosun University, Korea)<sup>1</sup>
- SD2-A5** Confucius of a jar, Siphon Toys, Magnetic gun  
Youngsik Yoon\* (Haeryong High School, Korea)
- SD2-A6** Vacuum Experience, Electromagnetic force, Moment of inertia  
Min Ju Kim\* (Gwangyangbaegun Middle School, Korea)
- SD2-A7** Earth's Magnetic Field, Simple Voltmeter  
Geukjeong Bang\* (Mokpo Jeil Girls High School, Korea)
- SD2-A8** Sonic boom, Gravitational Acceleration, Acceleration  
Sung Deuk Lee\* (Gurye High School, Korea)

**Science Demonstration 2-B**

**(p. 144)**

**Lobby**

- SD2-B1** Understand the 'Atmosphere phenomenon'  
Hyo Yeol Kim\* (Kunoe Middle School, Korea)
- SD2-B2** How to make Comet  
Sinae Sin\* (Wando High School, Korea)
- SD2-B3** The Change of four Seasons  
Miseon Jeong\* (Wando Girls Middle School, Korea)
- SD2-B4** How to Make Fossils?  
Song-Cheol Kim\* (Damyang High School, Korea)
- SD2-B5** Secondary School Students to Understand the Conceptual Change of Lunar Phases  
Mi Hyun Lee\* (Ilsin Middle School, Korea)
- SD2-B6** Effect of Atmospheric Pressure  
Hyung-rae Son\* (Wando Middle School, Korea)

**15:40-16:40**

**Invited Workshop 3**

**(p. 133)**

**Room1**

*chair: Bongwoo Lee (Dankook University, Korea)*

New Research Methods in Science and Education and Further Implications  
Chia-Ju Liu (National Kaohsiung Normal University, Taiwan)

**Contributed d Workshop 4**

**(p. 141)**

**Room2**

*chair: Hisashi Otsuji (Ibaraki University, Japan)*

Demonstration on Cause for Seasons  
Donghyun Chae (Jeonju National University of Education, Korea)

**Contributed d Workshop 5**

**(p. 141)**

**Room3**

*chair: Gyounggho Lee (Seoul National University, Korea)*

A Tiny Tool to Demonstrate Energy Conversion Between Light and Electricity  
Masafumi Watanabe, Masahiro Kamata (Tokyo Gakugei University, Japan)

**Contributed d Workshop 6**

**(p. 141)**

**Room4**

*chair: Hyunju Lee (Ewaha Womans University, Korea)*

The Meaning and the Scope of the STEAM Education  
Jean S. Chung (Korea Foundation for the Advancement of Science & Creativity, Korea)

**Contributed d Workshop 7**

**(p. 141)**

**Computer Lab**

**Thursday, October 27, 2011**

**Venu: Haeoreumgwan**

*chair: Prumuan Siripankaew (The Institute for the Promotion of Teaching Science and Technology, Thailand)*

**Understanding Science Using Math and Excel Computer Program**

Seung-Urn Choe (Seoul National University, Korea)

**16:40-17:00**

**Coffee Break**

**Lobby**

**17:00-18:40**

**Oral Presentation 4-A**

**(p. 161)**

**Room1**

*chair: Jui-lin Chen (National Taipei University of Education, Taiwan)*

**04-A1 The Habitat Creation on Campus to Improve Elementary School Students' Ecological Learning of Insects**

Jui-lin Chen\*, Chow-Chin Lu (National Taipei University of Education, Taiwan)

**04-A2 Analysis and Development of Expert Conception in Junior High School Nanotechnology Curriculum in Taiwan**

Hui-chen Chang\*, Chow-chin Lu, Chia-Chi Sung<sup>1</sup> (National Taipei University of Education, Taiwan), (National Taiwan University, Taiwan)<sup>1</sup>

**04-A3 Exploring Model Co-Construction and Group Norms by the Patterns of Social Interaction**

Eunhee Kang\*, Shinyoung Lee, Heui-Baik Kim (Seoul National University, Korea)

**04-A4 The Effect of the Open Inquiry Learning Activity**

Ganya Ratchahoon\*, Tassanee Bunterm, Jintanaporn Wattanatorn, Supaporn Muchimapura (Khon Kean University, Thailand)

**04-A5 The Effect of the Reading Framework in Implementation of the Science Writing Heuristic (SWH) Approach in Secondary Science Classroom**

Mirye Koh\*, Jeonghee Nam, Jong-yoon Park<sup>1</sup>, Mijung Kim<sup>1</sup> (Pusan National University, Korea), (Ehwa Womans University, Korea)<sup>1</sup>

**Oral Presentation 4-B**

**(p. 162)**

**Room2**

*chair: Hong-Wen Cheng (National Taipei University of Education, Taiwan)*

**04-B1 Using a 3-D Actual Model -the "Sun Altazimuth"- to Support Student Understanding of Concepts of the Sun-Earth Relations**

Hong-Wen Cheng\*, Han-Ching Wang (National Taipei University of Education, Taiwan)

**04-B2 Extracting Statements Describing the Nature of Scientific Observation(SDNSO) and Teaching it to High School Students**

Sangsoo Kim\*, Jongwon Park<sup>1</sup> (Korea High School, Korea), (Chonnam National University, Korea)<sup>1</sup>

**04-B3 Using KWL and CUD to Enhance and Assess Students' Learning and Encourage Students' Questioning on Force and Motion in Grade 10**

Siranan Bamrungkul\*, Prumuan Siripunkaew<sup>1</sup> (Kalasin Pitayasan School, Thailand), (The Institute for the Promotion of Teaching Science and Technology, Thailand)<sup>1</sup>

**04-B4 The Impacts of Writing in Argument-Based Inquiry on Science Learning**

Hyeongjeong Kil\*, Jeonghee Nam, Aeran Choi<sup>1</sup> (Pusan National University, Korea), (Kent State University, USA)<sup>1</sup>

**04-B5 Investigation and Improvement of Students' Reading Comprehension Performances in Science Pictures**

Fu-Pei Hsieh, Sung-Tao Lee\*,<sup>1</sup> (Kuang-Hua Primary School, Taiwan), (National Taichung University of Education, Taiwan)<sup>1</sup>

**Oral Presentation 4-C**

**(p. 164)**

**Room3**

*chair: Angie Y. C. Chen (National Science and Technology Museum, Taiwan)*

**04-C1 Promoting Pre-Docents' Understandings and Practices in the Context of Informal Setting**

Angie Y. C. Chen\*, Nelson C. C. Chen, Young-Shin Park<sup>1</sup> (National Science and Technology Museum, Taiwan), (Chosun University, Korea)<sup>1</sup>

**04-C2 The Learning Experiences of Participants of Science Cafes in Japan**

Miku Yoshida\* (The University of Tokyo, Graduate School of Interdisciplinary Information Studies, Master Course, Japan)

**04-C3 An Examination of the Notion of Scaffolding in an Informal Science Learning Context**

Eun Ji Park\*, Jieun Park, Seul Kee Park, Eugene Jeong, Chan-Jong Kim (Seoul National University, Korea)

**04-C4 The Influence of Teaching Strategies to the Learning Interest of Junior High Students in Informal Nanoscience Camp**

Jui-Chou Cheng\*, Tai-Chu Huang<sup>1</sup>, Jeng-Fung Hung<sup>2</sup>, Dong-Hwang Chen<sup>3</sup>, Terry Yuan-Fang Chen<sup>3</sup>, Jen-Fin Lin<sup>3</sup> (National Science and Technology Museum, Taiwan), (National Sun Yat-sen University, Taiwan)<sup>1</sup>, (National Kaohsiung Normal University, Taiwan)<sup>2</sup>, (National Cheng Kung University, Taiwan)<sup>3</sup>

**04-C5 Relationship Between Thinking Styles and Self-Regulated Learning Ability and Scientific Inquiry Ability of Korean Science Gifted Students**

Jiae Lee\*, Sookyong Park<sup>1</sup>, Youngmin Kim (Pusan National University, Korea), (Kyungnam University, Korea)<sup>1</sup>

**Oral Presentation 4-D**

**(p. 166)**

**Room4**

*chair: Hye-Eun Chu (Nanyang Technological University, Singapore)*

**04-D1 Students' Understanding in Different Contexts of fundamental Optics in Singapore and Korea**

Hye-Eun Chu\*, David Treagust<sup>1</sup> (Nanyang Technological University, Singapore), (Curtin University, Australia)<sup>1</sup>

**04-D2 A New Model for Math Affect**

Jonny Pernel\*, Roger Marapo<sup>1</sup>, Naci John Trance<sup>2</sup> (University of the Philippines Open University, Philippines), (University of St. La Salle, Philippines)<sup>1</sup>, (Western Visayas College of Science and Technology, Philippines)<sup>2</sup>

**04-D3 Primary School Students' Scientific Literacy and Reading Ability: The Study in Thailand**

Punika Praputtakun\* (Srinakharinwirot University, Thailand)

**04-D4 Analyzing the Special Science Elementary School Project for Gifted Children in the Philippines**

Joel Faustino\*, Manabu Sumida (Ehime University, Japan)

## Thursday, October 27, 2011

Venu: Haeoreumgwan

17:00-18:40

- 04-D5** Redefining the Underlying Structure of the ROSE Instrument and its Application to Understand Chinese Students' Affective Domain of Science Learning  
 Yau-yuen Yeung\*, May Hung May Cheng<sup>1</sup> (HKIED, Hong Kong), (Oxford University, UK)<sup>1</sup>

### Oral Presentation 4-E

(p. 168)

Room5

chair: Hyunju Lee (Ewha Womans University, Korea)

- 04-E1** Pre-Service Science Teachers' Decision-Making Trajectory on Socioscientific Issues  
 Hyunju Lee\*, Hyunsook Chang<sup>1</sup> (Ewha Womans University, Korea), (Kuksabong Middle School, Korea)<sup>1</sup>
- 04-E2** How Beliefs Regarding the Nature of Science Interact with Worldview Presuppositions held by Korean In-Service Science Teachers and Biologists  
 Hang-Hwa Hong\*, William Cobern (Western Michigan University, USA)
- 04-E3** Exploring Scientific Literacy of Undergraduate Engineering in Thailand Contexts  
 Rungrat Thummathong\*, Kongsak Thatthong (Khon Kaen University, Thailand)
- 04-E4** Beginning Teachers' Struggling Toward their Profession of Scientific Inquiry: Theory into Practice  
 Young-Shin Park\* (Chosun University, Korea)
- 04-E5** A Framework for Local Ecotourism in Maragondon, Cavite, Philippines: Implications to Curriculum Development  
 Nilda Balsicas\*, Alejandro Magnaye (St. Dominic College of Asia, The Philippines)

### Oral Presentation 4-F

(p. 169)

Room6

chair: Hisashi Otsuji (Ibaraki University, Japan)

- 04-F1** Approaching Cultural Background in Science Instruction: An Example of Japan Influenced by Mahayana Buddhism  
 Yuta Tasaki, Hisashi Otsuji\* (Ibaraki University, Japan)
- 04-F2** The Study of Korean View of Nature  
 Yumi Lee\*, Yeon-a Son (Dankook University, Korea)
- 04-F3** Students' Visual Representation of Mathematics  
 Naci John Trance\*, Roger Marapo<sup>1</sup>, Jonny Pornel<sup>2</sup> (UP Open University/Western Visayas College of Science and Technology, The Philippines), (University of St. La Salle, The Philippines)<sup>1</sup>, (University of the Philippines in the Visayas, The Philippines)<sup>2</sup>
- 04-F4** Fidelity of Implementation: Building on What We Have Done in Science Education Research  
 Yew-Jin Lee\* (Nanyang Technological University, Singapore)
- 04-F5** Case study Applied Thomas Young's Hypothesis Formulation Process through Analogy about the Interference Phenomenon of Light  
 Wonsook Kim\*, Youngmin Kim (Pusan National University, Korea)

18:40-19:00

### Moving to Conference Banquet Venue

19:00-21:00

### Conference Banquet

Gwangju Ramada Plaza Hotel

## Friday, October 28, 2011

Venu: Haeoreumgwan

08:30-09:00

### Registration

Lobby

09:00-10:00

### Oral Presentation 5-A

(p. 202)

Room1

chair: Tsun-hui Shih (National Taipei University of Education, Taiwan)

- 05-A1** A Study of the Learning Outcome on the Teaching of Biodiversity in the Zoo for Fifth Grade Students  
 Tsun-hui Shih\*, Ching-san Lai (National Taipei University of Education, Taiwan)
- 05-A2** Study on the Chemistry Epistemic Style of High School Students  
 Lei Wang\*, Yao Zhi, Hong Xiao (Beijing Normal University Chemistry College, China Mainland)
- 05-A3** Incultation of Action Research Culture among Science and Technology University's Lecturers  
 T. Subahan Mohd Meerah\*, Lilia Halim (National University of Malaysia, Malaysia)

### Oral Presentation 5-B

(p. 203)

Room2

chair: Hye-Gyoung Yoon (Chuncheon National University of Education, Korea)

- 05-B1** A Case of Pre-service Teachers' Efforts to Improve their Science Inquiry Teaching: Focusing on the Comments of Experts and Reflective Activities  
 Hye-Gyoung Yoon\*, Yong Jae Joung<sup>1</sup>, Mijung Kim<sup>2</sup>, Young-Shin Park<sup>3</sup>, Byung Sug Kim<sup>4</sup> (Chuncheon National University of Education, Korea), (Gongju National University of Education, Korea)<sup>1</sup>, (University of Victoria, Canada)<sup>2</sup>, (Chosun University, Korea)<sup>3</sup>, (Roosevelt University, USA)<sup>4</sup>

**Friday, October 28, 2011**

**Venu: Haeoreumgwan**

- 05-B2** A Preliminary Case Study of a One-year Teaching Mentoring: Program and Professional Growth in Elementary Science Teaching  
 Shue-Tai Cheng\*, Tzu-Yun Chung<sup>1</sup>, Chi-Jui Lien (National Taipei University of Education Department of Science Education, Taiwan), (New Taipei City Chang Ping Elementary School, Taiwan)<sup>1</sup>
- 05-B3** Beliefs of Excellent Science Teachers  
 Myrna Quinto\* (Far Eastern University, The Philippines)

**Oral Presentation 5-C**

**(p. 204)**

**Room3**

*chair: Yau-yuen Yeung (HKIED, Hong Kong)*

- 05-C1** School-Based Support for Immersing Digital Technology into the Inquiry-Based Project Learning of Science in a Primary School  
 Yau-yuen Yeung\*, Zhihong Wan (HKIED, Hong Kong)
- 05-C2** A Preliminary Case Study on Science Teachers' Difficulties of Becoming an Educational Game Developer  
 Wei-Ming Chen\*, Yi-Wen Wang, Jian-Da Chen, Yu-Min Chen, Pei-Chi Sung, Yu-Ling Lu (National Taipei University of Education, Taiwan)
- 05-C3** Fostering Pre-service STEM Teachers' Technological Pedagogical Content Knowledge: A Lesson Learned from Case-based Learning Approach  
 Niwat Srisawasdi\* (Khon Kaen University, Thailand)

**Oral Presentation 5-D**

**(p. 205)**

**Room4**

*chair: Mashita Abdullah (Nan Hwa Secondary School, Malaysia)*

- 05-D1** Small Scale Approach for Teaching and Learning Chemistry in Malaysia  
 Mashita Abdullah\*, Norita Mohamed<sup>1</sup>, Zurida Hj Ismail<sup>1</sup> (Nan Hwa Secondary School, Malaysia), (Universiti Sains Malaysia, Malaysia)<sup>1</sup>
- 05-D2** Exploring Reasoning Process in Collaborative Modeling by Small Group Interaction Type  
 Shinyoung Lee\*, Eunhee Kang, Heui-Baik Kim (Seoul National University, Korea)
- 05-D3** Improvement of Students' Problem Finding and Hypothesis Generating Ability: Gifted Science Education Program Utilizing Mendel's Law  
 Soon-Ok Kim\*, Bong-Seon Kim, Soo-Young Kim, Hae-Ae Seo (Pusan National University, Korea)

**Oral Presentation 5-E**

**(p. 206)**

**Room5**

*chair: Nilda Balsicas (St. Dominic College of Asias, The Philippines)*

- 05-E1** Motivation Factors Among Non-Science Students  
 Nilda Balsicas\*, Rosalina Makalintal (St. Dominic College of Asias, The Philippines)
- 05-E2** University Students' Understanding of Wave-Particle Duality  
 Yong Wook Cheong\*, Jinwoong Song (Seoul National University, Korea)
- 05-E3** The Effect of Reading Science Popular Books on the Nature of Science of College Students  
 Hao-Chang Lo\* (National Taichung University of Education, Taiwan)

**Oral Presentation 5-F**

**(p. 207)**

**Room6**

*chair: Seungho Maeng (Seoul National University of Education, Korea)*

- 05-F1** For the Learning Progressions in Asian Science Education Research: Analytic and Comparative Review of Asian, European, and American Studies on Conceptual Trajectories in Science Learning  
 Seungho Maeng\* (Seoul National University of Education, Korea)
- 05-F2** Comparison Between the Thinking Styles of Students in a Science School and a Normal Secondary School  
 Bob Chui Seng Yong\* (Universiti Brunei Darussalam, Brunei Darussalam)
- 05-F3** Toward an Academic Discipline of Science Education with Chinese Features  
 Bangping Ding\* (Capital Normal University, China Mainland)

**10:00-10:20**

**Coffee Break**

**Lobby**

**10:20-11:00**

**Invited Workshop 4**

**(p. 184)**

**Room1**

*chair: Nelson Chen (National Science and Technology Museum, Taiwan)*

Practical Ways for Teaching and Evaluating Scientific Creativity  
 Jongwon Park (Chonnam National University, Korea)

**Regional Special Session**

**(p. 198)**

**Room2**

*chair: Jinwoong Song (Seoul National University, Korea)*

Comparative Survey of Science Culture Indicators on Regional Level in East Asia  
 Jinwoong Song (Seoul Nat'l Univ., Korea), Masakata Ogawa (Tokyo Univ. of Science, Japan),  
 Chiaju Liu (National Kaohsiung Normal Univ., Taiwan), Enshan Liu (Beijing Normal Univ., China Mainland),  
 May Hung May Cheng (Oxford Univ., UK), Young-Shin Park (Chosun Univ., Korea)

**Friday, October 28, 2011**

**Venu: Haeoreumgwan**

<b>10:20-11:00</b>	<p><b>Contributed d Workshop 8</b> <span style="float: right;"><b>(p. 199)</b></span></p> <p><i>chair: Jeonghee Nam (Pusan National University, Korea)</i></p> <p>Using Microbial Fuel Cells for the Integrated Teaching of the Natural Sciences            Timothy T. M. Tan, Peter P. F. Lee, Yew Jin Lee (National Institute of Education, Singapore)</p>	<b>Room3</b>
	<p><b>Contributed d Workshop 9</b> <span style="float: right;"><b>(p. 199)</b></span></p> <p><i>chair: Yew-Jin Lee (Nanyang Technological University, Singapore)</i></p> <p>Propose of New Experiments about Motion of Gas Molecules through Analysis of Experimental Errors            Dae Hong Jeong, Jongho Baek (Seoul National University, Korea)</p>	<b>Room4</b>
	<p><b>Contributed d Workshop 10</b> <span style="float: right;"><b>(p. 199)</b></span></p> <p><i>chair: Sungmin Im (Daegu University, Korea)</i></p> <p>Measuring Changes in Balance of Oxygen and Carbon Dioxide in the Air: Combustion Experiment Using Gas Detector Tubes            Moonjung Han* (Sookmyung Girl's High School, Korea)</p>	<b>Room5</b>
<b>11:00-12:00</b>	<p><b>Poster Exhibition 3-A</b> <span style="float: right;"><b>(p. 217)</b></span></p> <p><b>P3-A1</b> Learning Math From Travelling: Math Weekend Camp for Indigenous Children            Ru-Fen Yao* (National Chia-Yi University, Taiwan)</p> <p><b>P3-A2</b> Cases of the Approaches from Science Communication to Science Education in Japan            Mariko Suzuki<sup>1</sup>, Akiko Tsuzuki<sup>1,2*</sup>, Takashi Kusumi<sup>3</sup>, Itsuo Hatono<sup>4</sup>, Mikihiro Tanaka<sup>5</sup>, Kei Kano<sup>3</sup>, Eri Mizumachi<sup>3</sup>, Tamaki Motoki<sup>3</sup>, Katsuya Takanashi<sup>3, 6</sup> (Shiga University, Japan)<sup>1</sup>, (Marine Learning Center, Japan)<sup>2</sup>, (Kyoto University, Japan)<sup>3</sup>, (Kobe University, Japan)<sup>4</sup>, (Waseda University, Japan)<sup>5</sup>, (Japan Science and Technology Agency, Japan)<sup>6</sup></p> <p><b>P3-A3</b> A Study of 4th Graders' Informal Science Learning at Taipei Zoo            Ching-san Lai* (National Taipei University of Education, Taiwan)</p> <p><b>P3-A4</b> Teachers' Perceptions and Interactions Concerning a Multi-Disciplinary Integrated Approach to Science Teaching            Jungyong Ahn*, Jinwoong Song (Seoul National University, Korea)</p> <p><b>P3-A5</b> What Young Children Know about Bats: A Summative Evaluation of Museum Educational Program by Visitor Study            Hui-fen Kao*, Jung-hua Yeh, Mei-chun Lydia Wen<sup>1</sup> (National Museum of Natural Science, Taiwan), (National Changhua University of Education, Taiwan)<sup>1</sup></p> <p><b>P3-A6</b> The Survey of Elementary School Teachers Toward Climate Change Issues in Interactive Multimedia System - National Taiwan Science Education Center Science Activities as Example            Chien-kuo Ku*, Qiu-Lan Chen, Gia-Yan Shen (Taipei Municipal University of Education, Taiwan)</p> <p><b>P3-A7</b> The Change in Inquiry Abilities of Physically Challenged Students by Science Class Based on POE Approach in Informal Education Environment            Sang-yong Park*, Hong-jeong Kim, Sung-Jae Pak, Sungmin Im (Daegu University, Korea)</p> <p><b>P3-A8</b> Perceptions of Teachers and the Effectiveness of PBL programs Using the Science Museum.            Juneuy Hong* (Seowon University, Korea)</p> <p><b>P3-A9</b> Exploring Factors Influencing Docents' Theory and Practice            Se-Hwan Jeong*, Jung-Hwa Lee, Young-Shin Park (Chosun University, Korea)</p> <p><b>P3-A10</b> How Evolution was Taught in Japanese Secondary Schools Before World War II            Kazumasa Takahashi*, Tetsuo Isozaki (Hiroshima University, Japan)</p> <p><b>P3-A11</b> The Scientific Imagination Appeared in Research Processes Korean Scientists            Jiyeong Mun*, Kongju Mun, Sung-won Kim (Ewha Womans Univesity, Korea)</p> <p><b>P3-A12</b> A Comparative Study of Middle School Students' Images and Perceptions of Scientists, Technicians and Engineers            Hyunyong Kim*, Youngmin Kim (Pusan National University, Korea)</p> <p><b>P3-A13</b> Pre-Service Science Teachers' Conceptions of the Nature of Science            Jin Choi*, Jae-Sook Lee, Hae-Ae Seo (Pusan National University, Korea)</p> <p><b>P3-A14</b> The Effectiveness of Using ABIM (Argument-Based Inquiry Model) for Scientific Literacy in the Classroom            Jongheon Kim*, Man-Seog Chun<sup>1</sup>, Young-Shin Park<sup>2</sup> (Daejeon Science High School, Korea), (Korea Science Academy of KAIST, Korea)<sup>1</sup>, (Chosun University, Korea)<sup>2</sup></p> <p><b>P3-A15</b> Analysis of the Correlation between Classification Ability Quotient and Cortisol-Hormonal Change in Middle School Students            Ye June Bea, Gi Yong Choi*, So Young Kim, Yong Ju Kwon (Korea National University of Education, Korea)</p> <p><b>P3-A16</b> Effects of Concept Map Strategy on Global Warming and Climate Change Course            Hsueh-Chih Chen*, En-Tsun Chou, Chih-Chun Hsu, Yao-tin Sung, Hsin-Tsun Huang (National Taiwan Normal University, Taiwan)</p>	<b>Main Room</b>
	<p><b>Poster Exhibition 3-B</b> <span style="float: right;"><b>(p. 222)</b></span></p> <p><b>P3-B1</b> The Teacher's Perception about the Nature of Science Involved in Science Curriculum            Seulae Ku*, Heeyoung Cha (Korea National University of Education, Korea)</p> <p><b>P3-B2</b> Students' and Teachers' Recognition of Illustration in Physics / Textbooks Based on the Revised National Curriculum in 2009 and Advancing Physics of UK: Focusing on Information and Communication Unit            Ju-Ock Seo* (Pusan National University, Korea)</p>	<b>Main Room</b>



**Friday, October 28, 2011**

**Venu: Haeoreumgwan**

- P3-B3** Microorganisms Living Inside Hermetia Illucens's Intestine as a Solution of Reducing Organic Waste  
Jongbaek Sung, Jaeah Chung, Jaikoo Lee, Je-Nyeon Kim\* (Gyeonggi Science High School for the Gifted, Korea)
- P3-B4** A Case Study on Instructional Design Process for Integrated Science Lesson by Secondary Science Teachers: Focused on the Consulting of 5-Step's Instructional Design for Integrated Science Lesson  
Eun Ju Lee\*, Yeon-a Son (Dankook University, Korea)
- P3-B5** The Understanding and Learning Survey of Elementary School Students toward Climate Change Related Facilities  
Chien-Kuo Ku\*, Mei-Hua Shi, Gia-Yan Shen (Taipei Municipal University of Education, Taiwan)
- P3-B6** The Effects of English Partial Immersion Science Classes on Middle School Students' Science Achievement  
Sang Woo Lee\*, Jeonghee Nam<sup>1</sup> (Busan International Middle School, Korea), (Pusan National University, Korea)<sup>1</sup>
- P3-B7** A Study On The Features Of Guduljang Used For Korean Heating System (Ondol)  
Su-Bin Sin, Hyun-A Choi<sup>1</sup>, Song-Cheol Kim\*<sup>2</sup> (Korea Advanced Institute of Science and Technology(KAIST), Korea), (Chonnam National University, Korea)<sup>1</sup>, (Damyang High School, Korea)<sup>2</sup>
- P3-B8** Influence on Cognitive Level Development through Student-Student Interaction in the Variable-Controlling Activities  
Sang Kwon Lee, Hui Mun\* (Chonnam National University, Korea)
- P3-B9** Laboratory Safety Signs and Symbols for Science Experiments  
HyunJu Park, Juran Shin\*<sup>1</sup> (Chosun University, Korea), (Chosun University Girl's High School, Korea)<sup>1</sup>
- P3-B10** Effect of Atmospheric Pressure  
Hyung-rae Son\* (Wando Middle School, Korea)
- P3-B11** Exploring the Influence of Online Metacognitive Scaffolding on Science Inquiry  
Wen-Xin Zhang\*, Ying-Shao Hsu, Fu-Tai Chuang, Yu-Ting Ho (National Taiwan Normal University, Taiwan)
- P3-B12** Elementary and Middle School Science Textbooks Presentation of Energy Conservation and Carbon Reduction in Taiwan  
Yao-Ting Sung, Hsin-Tsun Huang\* (National Taiwan Normal University, Taiwan)
- P3-B13** Upper Ocean Responses to Typhoon Abby in the Northwestern Pacific Using a Three-Dimensional Primitive Equation Numerical Model  
Chul-hoon Hong\*, Akira Masuda<sup>1</sup>, Jong-Hwan Yoon<sup>1</sup> (Pukyong National University, Korea), (Kyushu University, Japan)<sup>1</sup>
- P3-B14** Science and Mathematics Major Program (SMMP) in Upper-Secondary Schools in Japan: A Critical Analysis of the Status Quo  
Masakata Ogawa\* (Tokyo University of Science, Japan)
- P3-B15** The Direction of the Teacher's College and the Identity of Chemistry Education Examined by Analyzing Students's Paths in Life and College Plans  
Sungwoo Bae\*, Jongseok Park (Kyungpook National University, Korea)
- P3-B16** Representation of 'Origin of Universe' in the New High School Science Textbooks, 'Blended Science' in Korea  
Minna Kim\*, Sangwoon Kwon, Gyoungho Lee (Seoul National University, Korea)
- P3-B17** Analysing the Gap between Intended and Implemented Physics Laboratory Activities  
Thongloon Vilaythong\*, Sune Pettersson<sup>1</sup>, Oleg Popov<sup>1</sup> (National University of Laos, Laos), (Umea University, Sweden)<sup>1</sup>

### Science Demonstration 3-A

**(p. 200)**

**Main Room**

- SD3-A1** Observing an Electric Field and Lightening with Static Electricity  
Hyung-do Park\* (Hanam Middle School, Korea)
- SD3-A2** Making a Electrostatic Motor  
Hyeon Cheol Yu\* (Gwangju Electronic Technical High School, Korea)
- SD3-A3** Condenser (Microphones Made of Aluminum Foil)  
Euntai Wi\* (Wol-gok Middle School, Korea)
- SD3-A4** Sound Filters by Using Condenser or Coil & Speaker Disassembly  
Jin Ho Lee\* (GwangJu Girl's High School, Korea)
- SD3-A5** Mirror Reflection  
Jihoon Kim\* (Gwangju Science High School, Korea)
- SD3-A6** Interesting Reflection  
Jongwon Park, Hwoe-gwan Yang\*<sup>1</sup> (Chonnam National University), (Gwangju Science High School, Korea)<sup>1</sup>
- SD3-A7** Pinhole Camera  
HanSu Lee\* (CheomDan Middle School, Korea)
- SD3-A8** How to Show Rising Carbon Dioxide Bubble Dissolved in a Long Tube of Water  
Fuji Hiramatsu\* (Attached Elementary School of Tsukuba University, Japan)

### Science Demonstration 3-B

**(p. 201)**

**Lobby**

- SD3-B1** Several Demonstrations about Total Internal Reflection  
Kwangsik Kim\* (Chonnam National University, Korea)
- SD3-B2** Optical Communication  
Seung-Hee Choi\* (Gwangju Science High School, Korea)
- SD3-B3** Infrared Remote Control  
Sang Mi Kang\* (Gwangju Computer Science High School, Korea)
- SD3-B4** Synthesis and Degradation of Light  
Dong Sik Kim\* (Unnam Middle School, Korea)

**Friday, October 28, 2011**

**Venu: Haeoreumgwan**

**12:00-13:00**

**Lunch**

**Solmaru (Cafeteria)**

**13:00-14:20**

**Oral Presentation 6-A**

**(p. 208)**

**Room1**

*chair: Sau Kheng Au (Ministry of Education, Singapore)*

- 06-A1** Teachers' Inquiry Practices and Beliefs about Implementing Inquiry-Based Laboratory Experiments  
Sau Kheng Au\* (Ministry of Education, Singapore)
- 06-A2** The Effect of Science Writing Heuristic on Concept Formation of Lights in Mirrors/ Lenses and Scientific Attitudes  
Min-Ah Jeong\*, Sunggi Kwon<sup>1</sup>, Su-young Lee<sup>2</sup> (Dalsan Elementary School, Korea), (Daegu National University of Education, Korea)<sup>1</sup>, (Sungbuk Elementary School, Korea)<sup>2</sup>
- 06-A3** Understanding Middle School Students' Biological Taxonomy Processes through Small-Group Argumentation  
KyungHyun Lee\*, Jane Jiyoung Lee, Heui-Baik Kim (Seoul National University, Korea)

**Oral Presentation 6-B**

**(p. 209)**

**Room2**

*chair: Sungmin Im (Daegu University, Korea)*

- 06-B1** Using Cogenenerative Dialogues to Explore the Experiences of Korean English Language Learners in the Science Classroom in the US  
Sungmin Im\*, Sonya Martin<sup>1</sup> (Daegu University, Korea), (Seoul National University, Korea)<sup>1</sup>
- 06-B2** Analysis and Development of Expert Conception in Junior High School Nanotechnology Curriculum in Taiwan  
Hui-chen Chang\*, Chow-chin Lu, Chia-Chi Sung (National Taipei University of Education, Taiwan)
- 06-B3** The Effect of Learning Cycle Model on Conceptual Understanding of Sound for the Students with Intellectual Disability  
Hong-jeong Kim\*, Sungmin Im (Daegu University, Korea)
- 06-B4** The Effectiveness of Constructivist Approach-Based Experiments in Teaching Selected Physics Concepts  
Lorelei Tabago\* (Isabela State University, The Philippines)

**Oral Presentation 6-C**

**(p. 211)**

**Room3**

*chair: Supawadee Tonwongkaew (Khon Kaen University, Thailand)*

- 06-C1** Enhancing Teachers' Knowledge of Science and Mathematics Teaching for Improving Students' Analytical Thinking  
Supawadee Tonwongkaew\* (Khon Kaen University, Thailand)
- 06-C2** Influence of Teaching Option and Teaching Experience on Science Teachers' Pedagogical Content Knowledge of Environmental Education  
Sharifah Intan Sharina Syed Abdullah\*, Lilia Halim (National University of Malaysia, Malaysia)
- 06-C3** Analysis Chemistry Teacher's Conception of Teaching with Inquiry  
Yan-Ning Huang\*, Lei Wang<sup>1</sup> (Capital Normal University, China Mainland), (Beijing Normal University, China Mainland)<sup>1</sup>
- 06-C4** Design and Use Two-Tier Test Fitting for Rasch Model to Investigate Grade 10-11 Students' Understanding of Photosynthesis  
Cheng Liu, Enshan Liu\* (Beijing Normal University, China Mainland)

**Oral Presentation 6-D**

**(p. 212)**

**Room4**

*chair: Seyoung Hwang (Seoul National University, Korea)*

- 06-D1** A Review of Research on Teacher Professionalism and Identity in Environmental Education  
Seyoung Hwang\*, Inyoung Hong, Eunjeong Seo, Rena Lee (Seoul National University, Korea)
- 06-D2** Metacognitive Orientation of Physics Classroom in Thai Contexts  
Jirutthitikan Pimvichai\* (Khon Kaen University, Thailand)
- 06-D3** Factors Causing Science Learning Fatigue in Science Museums and Schools  
Minchul Kim\*, Jinwoong Song (Seoul National University, Korea)
- 06-D4** Development of Educational Programs for Reinforcement of Science and Technology Ethics Literacy and its Application on Students Majoring Science and Engineering  
Kyunghee Choi, Sungsoo Song, Hyang-yon Rhee, Jiyoung Jang\*, Sehyun Kim (Ewha Womans University, Korea)

**Oral Presentation 6-E**

**(p. 214)**

**Room5**

*chair: William Palmer (Curtin University, Australia)*

- 06-E1** Jacob Abbott (1803-1879): Lighting the Way for Youth  
William Palmer\* (Curtin University, Australia)
- 06-E2** The Organisation of Science (Rika) Education in Japanese Elementary Schools  
Tetsuo Isozaki\* (Hiroshima University, Japan)
- 06-E3** HPS/NOS in the Research of Science Education in Korea: Based on the Analysis of the 'Journal of the Korean Association for Science Education'  
Yong Jae Joung\*, Jinwoong Song<sup>1</sup> (Gongju National University of Education, Korea) (Seoul National University, Korea)<sup>1</sup>
- 06-E4** Refining Lakatosian Research Program  
Kyoung-Eun Yang\* (Korea National University of Education, Korea)

# PROGRAM

**Friday, October 28, 2011**

**Venu: Haeoreumgwan**

## **Oral Presentation 6-F**

**(p. 215)**

**Room6**

*chair: Zuway-R Hong (National Sun Yat-sen University, Taiwan)*

- 06-F1** Effects of an Integrated Science and Societal Implication on Promoting Adolescent's Positive Thinking and Emotional  
Zuway-R Hong\*, Huann-shyang Lin, Hsin-Hui Wang, Hsiang-Ting Chen, Yu-Min Chung, Ya-Chao Wu (National Sun Yat-sen University, Taiwan)
- 06-F2** I Do Not Want to be a Physics Teacher Any More: Some Pre-service Teachers' Decision After Wandering in College  
Kwang-Hee Jo\* (Chosun University, Korea)
- 06-F3** Exploring and Comparing Australian and Korean Students' Perceptions of Scientists and Engineers through Draw-a-Scientist and Draw-an-Engineer Tests  
Bernardo Leon de la Barra, Youngmin Kim\*<sup>1</sup>, Jaeyoung Han<sup>2</sup> (University of Tasmania, Australia), (Pusan National University, Korea)<sup>1</sup>, (Chungbuk National University, Korea)<sup>2</sup>
- 06-F4** Construction of Competence Indicators of Energy and Climate Change  
Hsueh-Chin Chen\*, Pei-Hsuan Lan, Chih-Chun Hsu, Hong-Tung Chou, Yao-Ting Sung (National Taiwan Normal University, Taiwan)

**14:20-14:30**

## **Break**

**14:30-15:00**

## **Closing Ceremony**

**Main Room**

*chair: Hae-Ae Seo (Pusan National University, Korea)*

Best Presentation Awards : Sung-Won Kim (Ewha Womans University, Korea)  
Closing Remarks : Youngmin Kim (Pusan National University, Korea)

**15:00-**

## **Educational Visiting**

**Main Room**

Elementary school  
High school  
National Gwangju Museum  
Gwangju Municipal Folklore Museum

**Saturday, October 29, 2011**

**09:00-**

## **Cultural Visiting**

Nag-An-Eup-Seong Folk Village