

# TECHNICAL SESSIONS

## October 17, 2007 (Wednesday)

### Opening Ceremony

Vibhavadee Ballroom B

Wednesday, 08.45 – 09.00 hr

- Welcome Speech  
*Suebsak Nanthavanij, Sirindhorn International Institute of Technology, Thailand  
Conference Chairperson, President of The Ergonomics Society of Thailand (EST)*
- Opening Speech  
*Masaharu Kumashiro, University of Occupational and Environmental Health, Japan  
President, The Pan-Pacific Council on Occupational Ergonomics (PPCOE)*

### Invited Talk

Vibhavadee Ballroom B

Wednesday, 09.00 – 10.00 hr

- Topic: Government Activities for Promoting Ergonomics to Thai Industries  
*Sudthida Krungkrai Wong, National Institute for the Improvement of Working Conditions and The Environment, Thailand  
President, The Southeast Asian Ergonomics Society (SEAES)*

### Special Presentations

Vibhavadee Ballroom B

Wednesday, 10.30 – 12.00 hr

- Preparation of The 2008 Southeast Asian Ergonomics (SEAES) Conference, SEAES 2008  
*Naris Charoenporn, Thammasat University, Thailand*
- Preparation of The 2009 International Ergonomics Association (IEA) Congress, IEA 2009  
*Sheng Wang, Peking University Health Science Center, China*

### Session WP1-A: Product Design (I)

Rangsit (A)

Wednesday, 13.30 – 15.00 hr

(Chair: Farag Effeituri)

- Evaluation of Automobile Seat Design to Optimize Comfort  
*Farag Effeituri (Libya) and William Luther (Canada)*
- A Study of the Walking for Pregnant Women  
*Chinatsu Mizuno and Sakae Yamamoto (Japan)*
- The Study on Exercise Effects by the Change of Elastics and Angle of the Insole  
*Chang-Min Lee, Yeon-Ju Oh, and Jin-Hoon Kim (Korea)*
- A New Concept for Laparoscopic Instrument Design  
*H. M. Chien (Taiwan, UK), S. Ferguson (UK), and G. Dodds (UK)*

### Session WP1-B: Safety (I)

Horvang (B)

Wednesday, 13.30 – 15.00 hr

(Chair: Klaus-Dieter Fröhner)

- A Study of Ergonomic Industrial Robot in Klang Valley, Malaysia  
*R. Samin, H.M. Kimi, R.M. Yusuff, N. Ismail, and S.H. Tang (Malaysia)*
- Grounding and Results of Person Oriented Online Monitored Particle-Size Sampling for Airborne Particles  
*Klaus-Dieter Fröhner and Ze Li (Germany)*
- Developing a Method to Compare International Lists of Hazardous Substances  
*Klaus-Dieter Fröhner (Germany), Pranas Baltrenas (Lithuania), Saulius Vasarevicius (Lithuania), and Sabine Wohlwill (Germany)*
- Effect of Organizational Culture on Employee Attitude Toward Safety Under Hazardous Situations In Case of Railway Organization  
*Amorn Amornsruang and Kazuo Nakamura (Japan)*

**Session WP1-D: Work-related Musculoskeletal Disorders (I)****Kambangbejra II (D)**

Wednesday, 13.30 – 15.00 hr

(Chair: *Hardianto Iridiastadi*)

- Health Promotion Program in Preventing and Reducing Low Back Pain among Malaysian Bus Drivers  
*S.B.M Tamrin (Japan), K. Yokohama (Japan), J. Jalaludin (Malaysia), N. Jemoi (Malaysia), N. Aziz (Malaysia), A. Li Naing (Malaysia), and B.N. Rusli (Malaysia)*
- Method of Quantitative Analysis of Occupational Low Back Pain in Manufacturing  
*Yoshiyuki Higuchi, Hiroyuki Izumi, Hidenori Togami, Masahiro Hashimoto, Akinori Sato, Hiroyuki Komada, and Masaharu Kumashiro (Japan)*
- Effect of Home Based Exercise Program to Reduce Pain in Persons with Low Back  
*Nanthida Phathusat, Varin Binhosen, and Pongjan Yoophat (Thailand)*
- Prevalence of Musculoskeletal Symptoms among Indonesian Workers: A Preliminary Study  
*Hardianto Iridiastadi (Indonesia)*

**Session WP1-E: Design for Accessibility and Usability (I)****Kambangbejra III (E)**

Wednesday, 13.30 – 15.00 hr

(Chair: *Sakol Teeravarunyou*)

- Construction of Comprehension Performance Curve for Characterization of Icon Usability  
*Alan H.S. Chan and Annie W.Y. Ng (Hong Kong)*
- Accessibility Design Guideline for the Elderly: A Case Study of TV Remote Control  
*T. Poonsak and S. Teeravarunyou (Thailand)*
- Intelligent Coding Tool for Physical Interface  
*P. Chaivoraporn and S. Teeravarunyou (Thailand)*
- Usability of a Roll-Up Style Menu on a Mobile Phone  
*Jaehyun Park, Sung H. Han, Youngseok Cho, Wonkyu Park, Hyunsuk Im, and Sang W. Hong (Korea)*
- Fisheye View for Searching Photos on a Mobile Phone  
*Hyunsuk Im, Sung H. Han, Jaemin Chun, and Wonsup Lee (Korea)*

**Session WP2-A: Product Design (II)****Rangsit (A)**

Wednesday, 15.30 – 17.00 hr

(Chair: *Kamal Kothiyal*)

- Muscle Load and Discomfort in Counter Workstation Users  
*Kamal Kothiyal and Claire Folland (Australia)*
- Design for Assembly Understanding to Improve Malaysian Office's Furniture Assembly Ergonomically  
*Mohd Shahrizal Dolah and Ahmad Rizal Abd. Rahman (Malaysia)*
- Can We Do Away with Those Cumbersome Shoe Laces?  
*Shuping Xiong and Ravindra Goonetilleke (Hong Kong)*
- The Effect of Input Device Type and Age on Numeric Entry Task  
*Donghun Lee, Dongjin Kim, Seokhee Na, Taebeum Ryu, and Min K. Chung*

**Session WP2-B: Safety (II)****Horvang (B)**

Wednesday, 15.30 – 17.00 hr

(Chair: *Jirachai Buddhakulsomsiri*)

- Optimizing Turnaround Maintenance Performance  
*Farag Effeituri and Salah Massoud Elemnifi (Libya)*
- Framework for Implementing Data Mining Techniques in Industrial Safety Data  
*Jirachai Buddhakulsomsiri (Thailand)*
- Design of an Adaptive Auditory Warning System for Adequate Audibility in Highly Fluctuating Noisy Environment  
*Patamaporn Sripadungtham, Parichart Sritanavut, Ratikorn Thearnranapramote, Tanasarn Thungpoonsub, and Suebsak Nanthavanij (Thailand)*

**Session WP2-D: Work-related Musculoskeletal Disorders (II)****Kambangbejra II (D)**

Wednesday, 15.30 – 17.00 hr

(Chair: *W. Jalayondeja*)

- Study on Relationships between Work-related Musculoskeletal Disorders, Job Stress and Sick Leave of Automobile Assembly Workers  
*Kwan S. Lee and Young J. Chun (Korea)*
- "Wise Technique" Implementation for Reducing Work-related Musculoskeletal Disorders in a Cardboard Box Factory  
*P. Klangsin, K. Mekhora, and W. Jalayondeja (Thailand)*
- Musculoskeletal Problems among Surgical Technicians of Shiraz City Hospitals  
*Mehrnoosh Movahed (Japan), Alireza Choobineh (Iran), Sayed Hamidreza Tabatabaie (Iran), and Masaharu Kumashiro (Japan)*

**Session WP2-E: Design for Accessibility and Usability (II)****Kambhangbejra III (E)**

Wednesday, 15.30 – 17.00 hr

(Chair: *Ning Liu*)

- A Movement Time Model of One-handed Touch Input on a Mobile Phone  
*Yong S. Park and Sung H. Han (Korea)*
- Do the Users Really Hate It: Evidence from Both Explicit and Implicit Attitudes Towards Mobile Added-Value Service  
*Ning Liu, Zhiguo Wang, and Xianghong Sun (China)*
- The Chinese Users' Attitude Toward Mobile Added-Value Service and the Factors Influencing the Formation of Attitude  
*Xianghong Sun, Ning Liu, Xianggang Xu, and Yan Ge (China)*
- Cultural Differences between Chinese and Dane in Card Sorting  
*Weina Qu (China), Xianghong Sun (China), Ather Nawaz (Sweden), Thomas Plocher (USA), and Torkil Clemmensen (Denmark)*

**October 18, 2007 (Thursday)****Workshop: Asian Ergonomics Road Map (I)****Vibhavadee Ballroom B**

Thursday, 08.30 – 10.00 hr

(Commentator: *Sudthida Krungkraiwoong*)

- Introduction and Purposes  
*Kazutaka Kogi (Japan)*
- Future Directions in Developing Ergonomics Research and Application in the Asian Region  
*Masaharu Kumashiro (Japan)*
- Roles of Ergonomics for Advancing Business Management  
*Kwan Suk Lee and Dong Chun Lee (Korea)*
- Approaches to Developing Self-reliant Ergonomics Program in Industries  
*Suebsak Nanthavanij (Thailand)*
- Practical Steps for Developing Road Maps of Ergonomics Application in Major Technical Areas  
*Sadao Horino, Kazutaka Kogi, Kazuhiro Sakai, Koya Kishida, Motoki Mizuno, Takeshi Ebara, Shin Hong Son, and Tomoki Ohashi (Japan)*

**Workshop: Asian Ergonomics Road Map (II)****Vibhavadee Ballroom B**

Thursday, 10.30 – 12.00 hr

(Commentator: *Sudthida Krungkraiwoong*)

- Group discussion on assigned topics, led by appointed group leaders.
- Identifying strategies for developing feasible Asian ergonomics road map.

**Session TP1-A: Accessible Design****Rangsit (A)**

Thursday, 13.30 – 15.00 hr

(Chair: *Kenji Kurakata*)

- Accessible Design and Surveys on Daily Inconveniences Experienced by Persons with Disabilities and Older Persons  
*Yasuyuki Hoshikawa and Yukiko Mizuno (Japan)*
- ISO/TC 159 Activities on Accessible Design  
*Ken Sagawa (Japan)*
- Accessible Design in Auditory Ergonomics  
*Kenji Kurakata, Tazu Mizunami, and Kazuma Matsushita (Japan)*
- Comparison of Auditory Characteristics between the Elderly and Young People  
*Se Jin Park, Hyuja Lee, Chul Jung Kim, and Mohammad Mynuddin Gani Mazumder (Korea)*

**Session TP1-B: Cognitive Ergonomics (I)****Horvang (B)**

Thursday, 13.30 – 15.00 hr

(Chair: *Masahiro Hashimoto*)

- The Mediating Effect of Personality Type Upon the Relationship between Manufacturing System Design and Mental Workload  
*Masahiro Hashimoto, Indri Hapsari, and Masaharu Kumashiro (Japan)*
- A Study for Development of the Index of Mental Workload Using the Oxidative-Stress Marker  
*Hiroiyuki Izumi, Masanori Ohta, and Masaharu Kumashiro (Japan)*

- Investigation on Correlation between Mental Workload and Situation Awareness of Pilots by Simulation Experiment  
*Shun-Ting Kuan, Wen-Jiang Chang, Min-Yang Wang, Wen-Ling Tsai, Wei Hsu, Jin-Ru Yen, and Hero Ho (Taiwan, R.O.C.)*
- Perceived Workload Under Different Attention Demand During an Experimental Study  
*Adel Mazloum, Hiroyuki Izumi, Yoshiyuki Higuchi, and Masaharu Kumashiro (Japan)*
- Psycho-Physiological Parameters to Identify Driver's Status by Using 'Mental Effort' Relative to 'Mental Demand' During Highway Driving  
*Sang-Young Yoon and Jung-Yong Kim (Korea)*

### Session TP1-C: Work Posture

### Kambhangbejra I (C)

Thursday, 13.30 – 15.00 hr

(Chair: Kazuo Nakamura)

- Effects of Training on Reliability of Direct Posture Observation  
*Tetsuya Hasegawa, Koki Inoue, and Masaharu Kumashiro (Japan)*
- Grouping of Working Postures in an Automobile Assembly Line Considering Working Areas and the Similarity of Working Postures  
*SungHyuk Kwon, Byungkee Chae, Seokhee Na, Min K. Chung, and Young W. Song (Korea)*
- Time Series Analysis of Postural Coordination during Quiet Stance  
*Yuzo Takahashi and Masaharu Kumashiro (Japan)*
- The Effect of Bed-Backrest Elevation System Combined with Hip and Knee Flexion on Lower Extremity Body-Pressure Reduction  
*Min-hee Kim, Won-gyu Yoo, Chung-hwi Yi, Han-sung Kim, and Su-jin Kim (Korea)*
- Availability of Modal Body Motions for Enhancing Human-Friendly Interactive Systems  
*Kazuo Nakamura (Japan)*

### Session TP1-D: Anthropometry and Biomechanics

### Kambhangbejra II (D)

Thursday, 13.30 – 15.00 hr

(Chair: Hardianto Iridiastadi)

- Development of Anthropometric Measurement Method for Body Circumferences Using Digital Image  
*Ari Widyanti, Aulia Ardiansyah, Yassierli, and Hardianto Iridiastadi (Indonesia)*
- The Effect of Anatomical Structure of the Femur in Three-Dimensional Biomechanical Modeling  
*Yound-Jin Cho, Jung-Yong Kim (Korea)*
- The Prediction of Body Dynamic Dimensions based on Grey Forecasting Theory  
*Ping Xiao, Wen-bin Zhang, Wei-ping Wang, and Hong-ge Wang (China)*
- Effect of Energy Compound on Skeletal Muscle Strain Injury and Regeneration in Rats  
*Lihua He, Guozhen Li, Xin Feng, Hongmei Shi, Kangping Ye, and Sheng Wang (China)*

### Session TP1-E: Human–System Interaction

### Kambhangbejra III (E)

Thursday, 13.30 – 15.00 hr

(Chair: Hong-In Cheng)

- Real-time Classification of Fear/Panic Emotion Based on Physiological Signals  
*Jaemin Chun, Hyekyoung Lee, Yong S., Park, Wonkyu Park, Jungchul Park, Sung H. Han, Seungjin Choi, Gerard Jounghyun Kim (Korea)*
- A Comparison between Different Menus: Disorientation When Browsing on WWW  
*Yang-Peng Chen, Ching-Shie Chen, Eric Min-Yang Wang (Taiwan R.O.C.)*
- Web-based Information System for Favorable Colors of Korean Elderly  
*Hong-In Cheng, Kyong-Hee Lee, and Hosoong Lee (Korea)*
- Changes in Workloads During 120 Minutes of Work with Monocular HMD: Comparison with Mobile Viewer Viewing Video  
*Hidenori Togami, Noriaki Satoh, Masahiro Hashimoto, Hiroyuki Komada, Hiroyuki Izumi, Masaharu Kumashiro, Tetsuya Sakashita, Nobuyuki Miyake, and Takashi Shinomiya (Japan)*
- Development of an Accelerated Front-End UCD Process Template for Mobile Service Development  
*Joohwan Lee, Sangwoo Bahn, Sun-uk Hwang, Chang Kyu Cho, Cheol Lee, Myung Hwan Yun (Korea)*

### Session TP2-A: Ergonomics for Elderly Population

### Rangsit (A)

Thursday, 15.30 – 17.00 hr

(Chair: Praise Israsena Na Ayudhya)

- Application of Anthropometric Data of Elderly Population for Designing Everyday Products  
*Jung-Yong Kim and Ji-Soo Park (Korea)*
- Caregiving for the Elderly in Thailand  
*Praise Israsena Na Ayudhya, Nuannoy Boonvong, and Prae Piromya (Thailand)*
- The Aesthetic and Emotional Preferences of the Elderly and the Design Factors for E-Business Web Sites  
*Maxim Bakaev, Kyong-Hee Lee, and Hong-in Cheng (Korea)*

- The Minimum Standard of Environment and Housing for Thai Elderly  
*Trirat Jarutach (Thailand)*

### Session TP2-B: Cognitive Ergonomics (II)

Horvang (B)

Thursday, 15.30 – 17.00 hr

(Chair: *Louhevaara Veikko*)

- Perceived Work Ability Reflects Ergonomics and Individual Characteristics  
*Louhevaara Veikko and Järvelin Susanna (Finland)*
- Study of the Effective Methods to Detect the Cause of a Ventilator's Alarm Going Off  
*Jun Hamaguchi, Sakae Yamamoto, and Daiji Kobayashi (Japan)*
- Relationship between Depersonalization Syndrome and Obsessive-Compulsive Symptom among Japanese Nurses  
*Miyuki Sugiura, Masataka Hirose, Yasuyuki Yamada, Yasunobu Nishi, and Motoki Mizuno (Japan)*
- Relation between Typus Melancholicus and Medical Accident in Japanese Nurses  
*Yasuyuki Yamada, Masataka Hirose, Miyuki Sugiura, Aya Okada, and Motoki Mizuno (Japan)*
- Incorporating Affective Responses into Design Attributes in Movies using Biosignal  
*Sangwoo Bahn, Wonyong Suh, Hyungsup Kim, Minchoo Jung, and Myung Hwan Yun (Korea)*

### Session TP2-D: Lifting

Kambhangbejra II (D)

Thursday, 15.30 – 17.00 hr

(Chair: *Rosnah Mohd. Yusuff*)

- Health Related Problems of Lifting Tasks in an Oil Palm Factory in Malaysia  
*Rosnah Mohd. Yusuff, A. Zulkarnain, B.M.T. Shamsul, and C.Z. Wan (Malaysia)*
- Lifting Capacity Variation According to Trunk and Upper Arm Angles  
*Seong Rok Chang, Dong Cheol Bae, and Hyunggu Park (Korea)*
- Load and Risk Profile for Analyzing and Developing Physical Work  
*Louhevaara Veikko, Kähkönen Jukka, and Hokkanen Timo (Finland)*
- The Evaluation of Manual Lifting Task by ML-Expert System: A Case Study of Sample Factories  
*Prachuab Klomjit and Kongkiti Pusavat (Thailand)*

### Session TP2-E: Human Errors and Accidents

Kambhangbejra III (E)

Thursday, 15.30 – 17.00 hr

(Chair: *Sasitorn Taptagaporn*)

- Development of a Comprehensive Analysis Model for Human Error Prevention in Industrial Fields  
*Kwan Suk Lee, Hyeon Kyo Lim, Seong Rok Chang, Dwang Won Rhie, and Yu Chang Kim (Korea)*
- Human Error and Accident at Work: A Case Study in Laem Chabang Port  
*Sasitorn Taptagaporn, Wanpen Pacharatrakul, and Orrapan Untimanon (Thailand)*
- Study on Training Method for Preventing Plant Operator's Erroneous Thinking in Malfunction Diagnosis  
*Daiji Kobayashi, Hiroaki Murata, and Sakae Yamamoto (Japan)*
- Tele-Field Study on Traffic Accident Process by Means of Image-Recording Type Drive-Video-Recorder-Near Accident Analysis of Taxi Against Bicycle  
*Sadao Horino, Midori Mori, Noboru Kubo, Sou Kitajima, and Tuyoshi Katayama (Japan)*
- Ergonomic Improvement of Visibility at Urban Intersections for Preventing Frequent Crossing Collisions  
*Midori Mori and Sadao Horino (Japan)*
- An Investigation of the Basic Causes of Cognitive Human Errors in Industrial Fields  
*Takashi Toriizuka (Japan)*

## October 19, 2007 (Friday)

### Session FA1-A: Ergonomics and Computer Work (I)

Rangsit (A)

Friday, 09.00 – 10.30 hr

(Chair: *Somrote Komolvanij*)

- Comparison of Muscle Activity and Input Performance of Operators Using Computer Mouse and a Trackball  
*Hwan-suk Yoo, Chung-hwi Yi, Oh-yun Kwon, Hye seon Jeon, and Won-gyu Yoo (Korea)*
- Analytical Algorithms for Adjusting Body Orientation and Notebook Computer Settings to Obtain Ergonomic Seated Posture  
*Sakib Jalil and Suebsak Nanthavanij (Thailand)*
- Ergonomic Intervention for Improving Work Posture during Notebook Computer Operation  
*Nuchrawee Jamjumrus and Suebsak Nanthavanij (Thailand)*

- Use of “Workstation – NBC” Adjustment Matrix as a Practical Tool to Estimate Recommended Adjustments for Proper Work Posture  
*Sakib Jalil, Veeris Ammarapala, and Suebsak Nanthavanij (Thailand)*

### **Session FA1-B: Ergonomics Applications**

**Horvang (B)**

Friday, 09.00 – 10.30 hr (Chair: *Andrea Shaw*)

- Don't Freeze! Designing Safer Workplaces Using Participative Ergonomics Approaches – Case Studies from Meat and Cold Storage Industries  
*Andrea Shaw (Australia)*
- The Evaluation and Improvement of SEM Inspection Task in Semiconductors Industry  
*Chih-Long Lin, Mao-Jiun J. Wang, and Fu-Sheng Chen (Taiwan, R.O.C.)*
- KAIZEN Research for Sustainable Production Field Construction  
*Koki Mikami, Masahiro Shibuya, Kenichi Iida, and Masaharu Kumashiro (Japan)*
- Developing Organizational Audit Guideline for Effective Ergonomics Program Implementation  
*Durongrit Channarong and Naris Chareonporn (Thailand)*

### **Session FA2-A: Ergonomics and Computer Work (II)**

**Rangsit (A)**

Friday, 10.30 – 12.00 hr (Chair: *Somrote Komolvanij*)

- Survey of Perceived Work-related Musculoskeletal Discomforts (WMSDs) Among Thai Office Employees Working Predominantly with Notebook Computers  
*Nuchrawee Jamjumrus and Suebsak Nanthavanij (Thailand)*
- Developing a Neural Network Based Expert System for Evaluating Desktop and Notebook Computer Operations and Workstations  
*Somrote Komolvanij and Suebsak Nanthavanij (Thailand)*
- PostureAdjuster: Decision Support System for Ergonomic Notebook Computer Operations  
*Sakib Jalil, Suebsak Nanthavanij, and Junalux Chalidabhongse (Thailand)*

### **Session FA2-B: Ergonomics Applications**

**Horvang (B)**

Friday, 10.30 – 12.00 hr (Chair: *Hiromi Ariyoshi*)

- A Study of Critical Factors to Accomplish Ergonomics Implementation using Analytic Hierarchy Process  
*Wuttichai Sungkasub and Naris Chareonporn (Thailand)*
- A Study of Work Management for Female Workers at a Food Processing Company  
*Masahiro Shibuya, Koki Mikami, Kenichi Iida, Kenichi Hatazawa, and Masaharu Kumashiro (Japan)*
- Measures for Working Environment Improvements at a Factory  
*Hiromi Ariyoshi (Japan)*