

# The First International Symposium on Visually Induced Motion Sickness, Fatigue, and Photosensitive Epileptic Seizures (VIMS2007)

## Joint (closed) Committee Meeting of the International Commission on Illumination (CIE) TC1-67 and ISO/TC159/SC4/SG on image safety

10 – 11 December 2007

The Hong Kong University of Science and Technology  
Hong Kong



### Provisional Programme and Call for Registration

ISO (International Standard Organization) document IWA3(2005) on Image Safety recognizes that visually induced motion sickness (VIMS), visual fatigue, and photosensitive epileptic seizures (PES) are the major biomedical concerns in conjunction with image safety. In October 2006, during a CIE (Commission Internationale de L'eclairage or the International Commission on Illumination) Technical Committee (TC1-67) meeting on image safety, members have suggested that a regular symposium on VIMS and visual fatigue should be organized. This symposium is the first international scientific meeting to focus on VIMS as well as to bring scientists from the three fields under one roof.

- *Display designs and diagnostics equipment*
- *Game development and medical concerns for child viewers*
- *Social aspects, regulations and standardization*

#### Registration

The standard registration fee will be USD450 (USD400 if registered before 5 August 2007) and a reduced fee of USD250 applies to full-time students. The standard registration covers all conference activities, including proceedings, reception, refreshments, lunches and banquet (not for student registration). Further details can be found on [www.VIMS2007.org](http://www.VIMS2007.org)

#### Major Themes of VIMS2007

The major topics of the symposium include:

- *Theories and etiology of VIMS, visual fatigue, and photosensitive epileptic seizures (PES)*
- *Neuro-mechanisms correlate with symptoms of VIMS, visual fatigue, and PES*
- *Pharmaceutical aspects and drug development*
- *Empirical studies on VIMS, visual fatigue, and PES*
- *Computational models and sickness prediction*



## Symposium Chair of VIMS2007

Richard So, *The Hong Kong Univ. of Science & Technology*

## Local Scientific Committee

Raymond Cheung, *University of Hong Kong*  
Andrew Lam, *Hong Kong Polytechnic University*  
Richard So, *The Hong Kong Univ. of Science and Technology*

## Local Publication Committee

Eric Chow, Jennifer Ji, Richard So, *The Hong Kong Univ. of Science and Technology*



## International Advisory Committee

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*Prof. Robert Kennedy, United States*  
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*Prof. Takeo Takahashi, Japan*  
*Prof. Mark Turner, United Kingdom*  
*Prof. Hiroyasu Ujike, Japan*  
*Prof. Kazuhiko Ukai, Japan*  
*Prof. Arnold J. Wilkins, United Kingdom*  
*Prof. John Wilson, United Kingdom*  
*Prof. Makoto Yoshizawa, Japan*

## Keynote Speakers

### **Prof. Graham Harding**

graduated in psychology from University College in London, in 1961. He obtained a PhD in EEGs and Psychiatry from Birmingham University and a DSc from the University of Aston. In 1998, he was awarded Honorary Membership of the Royal College of Physicians, for outstanding contributions to medicine. He established the Clinical Neurophysiology Unit at Aston University in 1963, and has headed it since that date. He has more than 250 publications in the field of electroencephalography and visual evoked potentials. He is President of the British Society for Clinical Neurophysiology, a Fellow of the British Psychological Society and a Chartered Psychologist. He has delivered numerous named and invited lectures. One of his special areas of interest is photosensitive epilepsy, a subject on which he has published two books and many papers. He has also carried out the largest study of a photosensitive population in the world. Many of these studies have been carried on over a period of 35 years. He is the consultant adviser to the BACC on problems of photosensitivity and televised material and assisted in the drafting of the ITC Guidelines. He also drafted the guidelines for the Commercial Broadcasters Association of Japan, and NHK (Public Broadcasting Corporation).



### **Prof. Robert Kennedy**

has over 45 years of experience as a human factors professional. Twenty-two years were on active duty with the U.S. Navy and the past 23 years as a human factors scientist in industry. His publication list consists of >550 items and include: book chapters, journal articles and technical reports. Currently, his scientific studies encompass: development of computerized tests of human capability (vision, perception, cognition, psychomotor skill, posture, and balance); effects of practice on information processing; disorientation and motion sickness; human-computer interaction and visual requirements for flight simulators & virtual reality devices; and human performance measurement. The distribution of his unclassified work includes: performance testing and human factors



engineering (30%), motion sickness, disorientation, and vestibular functions (30%), vision and visual perception (25%), selection, training, and training equipment (15%). He has produced book-length works in the areas of simulator sickness, temporal factors in visual displays, physiological measures of workload, and vestibular problems in diving. He is the President of RSK Assessments, Inc. with a research budget of >US\$1M per year. He teaches in the Human Factors program of the Psychology Department at the University of Central Florida. He is co-author of a section of a military standard and a field manual for avoiding simulator sickness.

### **Prof. Arnold Wilkins**

is the director of the Visual Perception Unit at the University of Essex. He obtained a doctorate from Sussex University for work on human memory. He then spent two years at the Montreal Neurological Institute (1972-1974) where he became interested in epilepsy. He returned to England to work as a research scientist at the Medical Research Council Applied Psychology Unit, Cambridge (1974-1997). He joined the University of Essex in December 1997. Professor Wilkins' initial studies of epilepsy and techniques for treatment led to research on vision and health. In 1984 it became evident that certain patterns can provoke pattern glare and this led to the discovery in 1988 that fluorescent lighting causes headaches and eye-strain because of the invisible flicker it emits. In 1991 a system for ophthalmic tinting was designed, followed in 1995 by coloured overlays, now in use in optometric and ophthalmic practice. In 1995 a unified theory of visual stress, was proposed, see *Visual Stress* (Oxford University Press, 1995). The theory has found application in a study of the effects of coloured filters on reading, as described in his most recent book *Reading Through Colour* (Wiley, 2003). Prof. Wilkins is currently investigating the way in



which visual and visuo-perceptual difficulties contribute to reading disorders.

### **Accommodation**

A wide range of accommodations will be available, starting from USD80 (3-star hotel) to USD180 (5-star hotel) per night depending on the location and facilities. Further information can be founded at <http://www.vims2007.org>

### **Correspondence**

For further information, please check the website at <http://www.VIMS2007.org>

Other enquiries should be directed to:

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*The Hong Kong University of Science & Technology*  
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## VIMS 2007

The First International Symposium  
on Visually Induced Motion Sickness, Fatigue,  
and Photosensitive Epileptic Seizures

### Provisional Program (last updated on 18July2007)

#### Day 1 – Monday 10 December 2007

8:00am to 8:30am	Registration and exhibition
8:30am to 9:00am	Opening Ceremony
9:00am to 10:00am	<b>Keynote speech on Visually Induced Motion Sickness by Prof. Robert Kennedy</b>
	15-minute tea break and exhibition
10:15am to 12:00pm	<p>Why cybersickness Bos J.E. (TNO Human Factors, the Netherlands)</p> <p>Eye movements during the onset of visually induced motion sickness Turner M. and Van Laar D. (University of Portsmouth, UK)</p> <p>Wider Stance Reduces Body Sway and Motion Sickness Scibora L., Villard S., Stoffregen T.A. (University of Minnesota, USA) and Bardy B. (University of Montpellier I, France)</p> <p>Visually Induced Motion Sickness During Single and Dual Axis Motion Diels C. and Howarth P.A. (Loughborough University, UK)</p> <p>A biologically-inspired model relating vection and visually induced motion sickness: individual effects and sensitivity analyses Ji J., Chow E., Lor F., So R.H.Y. (Hong Kong University of Science &amp; Technology, HK), Cheung R. (University of Hong Kong, HK), Stanney K. (University of Central Florida, USA), and Howarth P.A. (Loughborough University, UK)</p>
12:00pm to 2:00pm	Photo taking and lunch

2:00pm to 3:00pm	<b>Keynote speech on Photosensitive Epileptic Seizures by Prof. Graham Harding</b>
3:05pm to 3:40pm	<p>Stroboscopic vision as a treatment for retinal slip induced motion sickness Reschke M.F. (NASA Johnson Space Center,USA), Somers J.T., Ford G., Krnavek J.M., Hwang E.J. (Wyle Laboratories, USA), Leigh, R.J. (University Hospitals of Cleveland) and Estrada A. (U.S. Army Aeromedical Research, USA)</p> <p>Vergence eye movements elicited by non-disparity factors in 2D realistic movies Iijima A., Kiryu T., Bando T. (Niigata University, Japan), Ukai K. (Waseda University, Japan)</p>
	15-minute tea break and exhibition
4:00pm to 5:20pm	<p>A Time-Varying Factors Model for Interpreting Visually Induced Motion Sickness Kiryu T., Uchiyama E. and Iijima A. (Niigata University, Japan)</p> <p>The effects of frequency and tilt on motion sickness induced by optokinetic stimuli Golding J.F., Arun S. (University of Westminster, UK), Wortley E., Wotton-Hamrioui K. and Gresty M.A. (Imperial College, UK)</p> <p>Internal and external field of view and cybersickness Bos J.E., Van Emmerik M.L., De Vries S.C., Groen E.L. (TNO Human Factors, the Netherlands)</p> <p>The Effect of Display Size on Visually-Induced Motion Sickness and Skin Temperature Harvey C. and Howarth P.A. (Loughborough University, UK)</p>
6:30pm	Coach departure to Banquet Venue
7:00pm	Banquet Dinner

## Day 2 – Tuesday 11 December 2007

9:00am to 10:00am	<b>Keynote speech on Visual Stress by Prof. Arnold Wilkins</b>
10:05am to 10:45am	<p>Effects of colors on the eyestrain under a virtual environment Matsuda H. and Ohkura M. (Shibaura Institute of Technology, Japan)</p> <p>Behaviour of ocular accommodation and convergence under the conflicted stimuli Ukai K. (Waseda University, Japan)</p>
	15-minute tea break and exhibition
11:00am to 12:20pm	<p>Two different time scales of development of VIMS Ujike H. (National Institute of Advanced Industrial Science and Technology, Japan)</p> <p>Assessment of Effects of Visually-Induced Motion Sickness Using Physiological Index obtained from Photoplethysmography Abe M., Yoshizawa M., Sugita, N., Yambe, T., Nitta, S. (Tohoku University, Japan), Tanaka A. (Fukushima University, Japan), and Chiba S. (Sharp Corporation, Japan)</p> <p>Quantitative Evaluation of Effects of Visually-Induced Motion Sickness Based on Causal Coherence Functions between Blood Pressure and Heart Rate Sugita N., Yoshizawa M., Abe M., Yambe T., Nitta S. (Tohoku University, Japan), Tanaka, A. (Fukushima University, Japan), and Chiba S. (Sharp Corporation, Japan)</p> <p>Visual stress after viewing stereoscopic images presented on a HMD with and without matching lens focuses and image depths Yip R., Wong W.S., So R.H.Y., Huang H.C. (Hong Kong University of Science &amp; Technology, HK) and Lam, A. (Hong Kong Polytechnic University, HK)</p>
12:20pm to 2:00pm	Lunch

2:00pm to 3:40pm	<p>Benefits of matching lens focuses with image depths in stereoscopic images presented on HMDs Man C.K., Yip R., Wong W.S., So R.H.Y., Huang H.C. (Hong Kong University of Science &amp; Technology, HK) and Lam, A. (Hong Kong Polytechnic University, HK)</p> <p>Cybersickness affects affective appraisal Van der Spek E.D., Bos J.E., Van Emmerik M.L., Toet A., De Vries, S.C. (TNO Human Factors, the Netherlands), and Houtkamp J. (Utrecht University, the Netherlands)</p> <p>Indices to Detect Visually Induced Motion Sickness in Stabilometry Takada H. (Gifu University of Medical Science, Japan), Fujikake K., Miyao M. (Nagoya University, Japan) and Matsuura Y. (Nagoya City University, Japan)</p> <p>Simulator Sickness Management: Enhanced Familiarisation and Screening Processes Reed, N., Diels, C. and Parkes, A.M. (Transport Research Laboratory, UK)</p> <p>Image Safety: Standardization of guidelines reducing undesirable health effects caused by moving images Ujike H. (National Institute of Advanced Industrial Science and Technology, Japan)</p>
3:40pm to 5:00pm	Closing Ceremony and Invitation to VIMS2009
5:30pm to 8:00pm	Joint (closed) Committee Meeting of the International Commission on Illumination (CIE) TC1-67 and ISO/TC159/SC4/SG on image safety: Session I

### **Day 3 – Wednesday 12 December 2007 (for committee members)**

9:30am to 12:30pm	Joint (closed) Committee Meeting of the International Commission on Illumination (CIE) TC1-67 and ISO/TC159/SC4/SG on image safety: Session II
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## Exhibiting Companies



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