FREE SEMINAR

Driving on the Technology Highway of Hong Kong

September Section

3:30pm – 5:00pm, 8 September 2003 (Monday)

A Joint Program with HKCCMA, AHKEA, HKOEA and TechMart

Introduction

To focus and stimulate technology transfer and development of respective critical components industries in Optics, Mechanical, Electronics, Magnetic, Chemical and Environmental Engineering and IT, TechMart of Hong Kong Productivity Council will be pleased to liaise with **Hong Kong Critical Components Manufacturers Association (HKCCMA), America Hong Kong Electronics Association (AHKEA) and Hong Kong Optoelectronics Association (HKOEA)** to support and serve the role to foster technology exchange, transfer and commercialization of respective critical components industries between Hong Kong, China and overseas.

TechMart joins with HKCCMA, AHKEA and HKOEA to organize and provide a series of monthly free seminars scheduled on Monday, the second week of each month.
Please refer to www.hktechmart.com/eng/news/index.htm for details.
The coming event will be scheduled on 8 September 2003.

Seminar

Title : **"Photonics – A Case for Hong Kong, Challenges and Opportunities"**

Guest Speaker: Mr. Daniel K. Lau, Founding President, Hong Kong Optoelectronics Association

Photonics technology is one of the most “Pervasive Technologies” of the 21st Century.

China is poised to become one of the biggest potential markets in the world for photonics products especially in the areas of consumer and communication. The followings are a brief introduction of some basics and diversity of Photonics applications.

A beam of light is both a waveform and a stream of particles called photons. Photonics is an emerging technology that controls, manipulates, transfers and stores energy and information using photons.

Light's waveform and its ability to be transmitted at a range of frequencies provide the means of carrying multiple packages of information simultaneously. Photons can carry more information much faster than electrons. As a key enabling technology, photonics underpins the communications revolution with a wide range of applications in many areas such as telecommunications, diagnostic equipment and sensing devices.

The photonics revolution is characterized by fundamental innovations in the science of optics. For an innovative information technology these new developments in photonics now allow us to conceive cages, guided pathways, and new sources of coherent radiation on smaller and smaller scales operating at steadily increasing speeds.

In the life science, the advances in photonics are enabling a number of revolutionary and ultra- sensitive spectroscopic and diagnostic tools for the study of complicated nanostructures such as bio-moleculesHong Kong, with her integrated competitive advantage, is in an excellent position to help shaping this emerging photonics industry in China as well as to grow her local photonics industry into a major contribution to the local economy. But time is critical.

We shall discuss some background of success in various Asia countries as a proof of context. The present Photonics industry status in Hong Kong and Mainland China will be reviewed. The discussion will then extend onto “A case for Hong Kong in Photonics”

Title : **"Cost-effective Low-field MRI system and related technology"**

Guest Speaker: Prof. Q.Y. Ma, Deputy Director, The Jockey Club MRI Engineering Center, The University of Hong Kong

The Jockey Club MRI Engineering Centre at HKU has taken the lead in developing world class MRI technologies since its inception in 1998. The Centre has successfully built and developed several high-tech prototype products, ready for commercialization.

One of the products derived from our R & D efforts is a cost effective, low-field MRI system. Owing to its mobility, this machine can be easily relocated. Designed with a vertical opening C-shape magnet, the system is built for human extremity imaging. It is worth noting that the images acquired from this machine are comparable to those obtained from General Electric’s commercial low-field system. Besides, the low cost design with a friendly interface and an advance, tailor-made software integration makes the system more attractive to Mainland China market, the number two largest MRI market in the world.

Another R & D product is the high sensitivity RF coil, which has been built with high temperature superconductor (HTS) material. Our devices demonstrate a 300% SNR improvement. The implication of such SNR gain is that higher resolution imaging is achievable at the low-cost MRI system. The development of this device was supported by the Innovation and Technology Fund. This device has recently obtained the approval of Food and Drug Administration (FDA) in the U.S. the only medical device made in Hong Kong with US FDA approval

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Title: **Light Enhancement Jacket by Nano-particles and Water-based Electrophoretic Nano-Coating Technique**

Guest Speaker: Ir. P.S. Kwan, Vice Chairman, Wui Chun Building Materials Ltd

Topic:
1. Basic Principle of Light Enhancement Jacket
2. Design and Application
3. Data Comparison and Experience Sharing
4. Electrophoretic Process: conventional vs nano
5. Current Research Results
6. Applications on thin metal

Nano-technology is the latest technology in the beginning of the 21st century. In the lighting industry, five layers of nano-particles are pressed onto each side allowing no light beams to penetrate. Thus the light reflects back downwards increasing the luminous intensity of the entire system. Under normal situation, 60% increase of lux can be achieved. Given some new florescence tubing from Philips, the overall lux intensity can be achieved as high as 100%. In the conventional electrophoretic industry, environmental factor is of vital concern. Water-based electrophoretic process for thin metal components has been successfully developed using nano-emulsion. This process takes about 15 seconds and 15A to coat onto a thin metal plate giving an excellent tough surface coat and the membrane is flexible. The process is highly suitable for making metal casing, ornaments etc.

Schedule

Time	Topic
▶ 3:30pm	**Opening**
▶ 3:35pm - 4:05pm	**Photonics – A Case for Hong Kong, Challenges and Opportunities** *Guest Speaker : Mr. Daniel K. Lau, Founding President, Hong Kong Optoelectronics Association*
▶ 4:05pm - 4:35pm	**Cost-effective Low-field MRI system and related technology** *Guest Speaker : Prof. Q.Y. Ma. Deputy Director, The Jockey Club MRI Engineering Center, The University of Hong Kong*
▶ 4:35pm - 5:00pm	**Light Enhancement Jacket by Nano-particles and Water-based Electrophoretic Nano-Coating Technique** *Guest Speaker : Ir. P.S. Kwan, Vice Chairman, Wui Chun Building Materials Ltd*
▶ 5:00pm	**Networking Section**

Venue

TechMart Theme Hall, LG1 of HKPC Building, 78 Tat Chee Avenue, Kowloon Tong, Hong Kong

Registration

Please fill in the reply slip and fax back at 2788-5413 on or before 6 September 2003 or by email registration to brenda@hkpc.org. For enquiry, please contact Ms Brenda Lee at 2788-5912.

Reply Slip

Free Seminar: **Driving on the Technology Highway of Hong Kong (September Section)**

Date: **3:30pm - 5:00pm, 8 September 2003**

Name: Mr / Mrs / Miss / Dr _____

Position: _____

Company Name: _____

Phone: _____ Fax: _____ Email: _____

Address: _____

_____

ORGANIZER

Hong Kong Productivity Council 香港生產力促進局

TechMart

CO-ORGANIZERS

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