

## Hong Kong Electronic Forum

### 香港電子論壇

## **AI Enhanced Reliability and Functional Safety for Electronics System**

### **人工智能如何提升產品與系統之功能安全設計及可靠性**

Date 日期 : 15 / 10 / 2018 (Monday 星期一)

Time 時間 : 10:15am – 12:30pm

Venue 地點 : Seminar Room, Hall 5FG, Hong Kong Convention & Exhibition Centre  
香港會議展覽中心展覽廳 5FG 研討室

Language 語言 : English and Putonghua (With simultaneous interpretation service)  
英語及普通話 (附設即時傳譯服務)

Remarks 備註 : Free Admission (Please click [HERE](#) to register online) 免費入座 「[按此](#)」登記

Time 時間	Programme 程序表
10am – 10:15am	Registration 登記
10:15am – 10:18am	<b>Welcoming Remarks by 致歡迎辭</b> Dr C.H. Ng, Chairman, Hong Kong Electronic Industries Association 香港電子業商會會長 吳自豪博士
10:18am – 10:23am	<b>Souvenir Presentation to Speakers 頒發紀念品予演講嘉賓</b> Mr Daniel Lam, Senior Exhibitions Manager, Hong Kong Trade Development Council 香港貿易發展局展覽事務高級經理 林國駿先生 Ms Joanna Wong, Project Director, MMI Asia Pte Ltd 慕尼黑國際博覽亞洲有限公司展覽總監 黃偉莊女士
10:23am – 10:25am	<b>Group Photo Taking with all representatives 代表合照</b>
10:25am – 10:55am	<b>Using AI- based Data Analytics to Assess the Health and Predict the Reliability of Electronics Systems</b> Prof Michael Pecht, Chair Professor and Director Center for advanced Life Cycle Engineering (CALCE), University of Maryland, USA
10:55am – 11:15am	<b>Machine Vision on SMT Production</b> Mr Norbert Meuser, Managing Director, Viscom Machine Vision Pte Ltd
11:15am – 11:35am	<b>Cybersecurity in Automation</b> Mr Ron Starman, President, Intertek EWA
11:35am – 11:55am	<b>Industry 4.0 for reliability and resilience - Opportunities for microelectronics production?</b> Mr Patrick Kabasci, Technology Manager, Business Development Asia Pacific, KEX Knowledge Exchange AG and INC Invention Center
11:55am – 12:30pm	Q&A Session and Panel Discussion 問答及討論 Moderator: Ir Dr H.L. Yiu, Head of Advanced Manufacturing, HK Science & Technology Parks Corporation 香港科技園公司先進製造產業主管 姚慶良博士工程師

### **Organisers 主辦機構:**



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**Prof Michael Pecht, Chair Professor and Director,  
Center for advanced Life Cycle Engineering (CALCE), University of Maryland, USA**



Prof Michael Pecht has a BS in Physics, an MS in Electrical Engineering and an MS and PhD in Engineering Mechanics from the University of Wisconsin at Madison. He is a Professional Engineer, an IEEE Fellow, an ASME Fellow, an SAE Fellow and an IMAPS Fellow. He is the editor-in-chief of IEEE Access, and served as chief editor of the IEEE Transactions on Reliability for nine years, and chief editor for Microelectronics Reliability for sixteen years. He has also served on three U.S. National Academy of Science studies, two US Congressional investigations in automotive safety, and as an expert to the U.S. Food and Drug Administration (FDA).

He is the founder and Director of CALCE (Center for Advanced Life Cycle Engineering) at the University of Maryland, which is funded by over 150 of the world's leading electronics companies at more than US\$6M/year. The CALCE Center received the NSF Innovation Award in 2009 and the National Defense Industries Association Award. Prof Pecht is currently a Chair Professor in Mechanical Engineering and a Professor in Applied Mathematics, Statistics and Scientific Computation at the University of Maryland.

He has written more than twenty books on product reliability, development, use and supply chain management. He has also written a series of books of the electronics industry in China, Korea, Japan and India. He has written over 700 technical articles and has 8 patents. In 2015 he was awarded the IEEE Components, Packaging, and Manufacturing Award for visionary leadership in the development of physics-of-failure-based and prognostics-based approaches to electronic packaging reliability. He was also awarded the Chinese Academy of Sciences President's International Fellowship.

In 2013, he was awarded the University of Wisconsin-Madison's College of Engineering Distinguished Achievement Award. In 2011, he received the University of Maryland's Innovation Award for his new concepts in risk management. In 2010, he received the IEEE Exceptional Technical Achievement Award for his innovations in the area of prognostics and systems health management. In 2008, he was awarded the highest reliability honor, the IEEE Reliability Society's Lifetime Achievement Award.

**Mr Norbert Meuser, Managing Director, Viscom Machine Vision Pte Ltd**



Norbert Meuser is serving as the Managing Director for Viscom AG's Asian Operations based in Singapore. Viscom AG, founded 1984, is a public listed company at the German stock exchange since 2006 manufacturing a full range of automated inspection systems. Mr. Meuser held various management positions at Hoppecke Batterien, the leading privately held German industrial battery manufacturer. Amongst others, his responsibilities included manufacturing Operations in an German/Indonesian JV which he served as President Director as well as worldwide sales of Fibre NiCd batteries for application in energy storage and mobility. Mr. Meuser holds both a Master Degree in Physics (Universitaet Essen, Germany) and Business Administration (National University of Singapore).

**About the Presentation**

Machine Vision has long been successfully applied for quality and process control in the manufacturing of electronics (SMT). AOI and AXI machines have initially replaced low skilled workforce and supported the remaining humans in gaining productivity to achieve high yields by inspecting solder print, component placements and solder joints formed after reflow soldering on printed circuit boards (pcb). The utilization of such automated inspection machines has had tremendous positive impact on the reliability of electronics and driven strong savings for both the manufacturer and lastly for the consumer. The large amounts of production data collected by these inspection machines is now driving the training of AI, that will eventually take over the final classification of products and production process optimization leading to the lights-out factory.

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## Mr Ron Starman, President, Intertek EWA



Ron Starman is the President of Intertek EWA who is graduated from the University of Alberta (B.Sc. Electrical Engineering) and engaged in various facets of cybersecurity for 15 years. Ron is responsible for day-to-day operations of Intertek EWA and definition & execution against strategic growths in cybersecurity for Intertek. Ron leads a team of highly skilled cybersecurity specialists who provide the following services:

- Organization security process audits and certification
- Product security testing and certification to standards
- Consulting services
- Provision of cyber operations assurance activities
- High assurance security testing and evaluation to the critical infrastructure that augments traditional vulnerability assessment and penetration testing

Ron Starman 是 Intertek EWA 的總裁，他畢業於阿爾伯塔大學（B.Sc. 電氣工程）並從事不同網絡安全範疇已有 15 年。Ron 負責 Intertek EWA 的日常營運以及針對 Intertek 的網絡安全發展戰略作出定位和實際執行。Ron 領導著一支高技能的網絡安全專家團隊，他們提供以下服務：

- 組織安全流程審核和認證
- 產品安全測試和標準認證
- 諮詢服務
- 提供網絡營運保障議案
- 對關鍵基礎架構進行高保證安全測試和評估，以增強傳統的漏洞評估和滲透測試

## Mr Patrick Kabasci, Technology Manager, Business Development Asia Pacific, KEX Knowledge Exchange AG and INC Invention Center

Patrick has led the consortial study on advanced data analytics by KEX Knowledge Exchange AG in 2017-2018, where he has helped around 20 companies from major industrial sectors including automotive, electronics and consumer goods to assess their short- and long-term potentials of using data analytics in the context of Industry 4.0. He has been involved in Industry 4.0 since its very beginning in 2013 and has led benchmarkings, strategy definitions and assessments on the possibilities of Industry 4.0 for companies in various sectors in both Germany and different countries in the Asia-Pacific region.

INC Invention Center is a global community of around 40 world-class innovator companies set up in cooperation between Fraunhofer IPT, RWTH Aachen University and KEX Knowledge Exchange AG. In Cooperation with HKPC, the Invention Center has just opened an office in Hong Kong

### About the Presentation

Industry 4.0 opens new potentials for production by using industrial data analytics for getting a real-time overview on the state of a production, and using this digital twin to predict various information around production. Applications such as predictive maintenance and predictive quality control enable more resilient production while at the same time saving resources and decreasing waste. This talk gives an overview of these applications and gives impulses on how to leverage these applications for reliability optimization in microelectronics production.

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