



InspireMe Talk: Stepping Out - There and Back Again

by Ir. Dr Tan Kim Seah and Ir. Dr Lee Choo Yong

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On 22 May 2021, IEM Electronic Engineering Technical Division (eETD) was pleased to invite an eminent physicist, Professor Cheah Kok Wai, Dr. Elizabeth K. S. Law Endowed Professor in Advanced Materials and Chair Professor of Physics Department at Hong Kong Baptist University, to deliver an insightful InspireMe Talk entitled “**Stepping Out-There and Back Again**”. The talk was conducted via Zoom virtual platform with a total of 85 participants comprises IEM members, university students and secondary school students from Penang State. The talk was moderated by Ir. Dr. Tan Kim Seah, the executive committee of IEM eETD.

The title of the talk was set to inspire young people to step out and see the world upon young, as Professor Cheah did in his journey in life. Professor Cheah stepped out of Penang 50 years ago in 1970, as a yet graduated Form 5 student from Chung Ling High School. He stayed in United Kingdom (UK) for 20 years before made his way back to Hong Kong; where he is staying now and is close to Malaysia.

Half of his time in UK was spent in studying, whereby he studied Form 6 at Warminster School, followed by 8 years studied at Imperial College from bachelor’s degree in Physics to PhD in electronic materials. After his PhD, Professor worked in UK starting from a multimedia company to a start-up company, and then space and defense company. The projects that he involved at the space and defense company included Meteosat 1 to 7 Satellites, and the design of “new” technology including flat panel display, voice control and “Google” glass used in NASA space station, which were extraordinarily advanced at that time (1986-1988) (see Fig. 1)

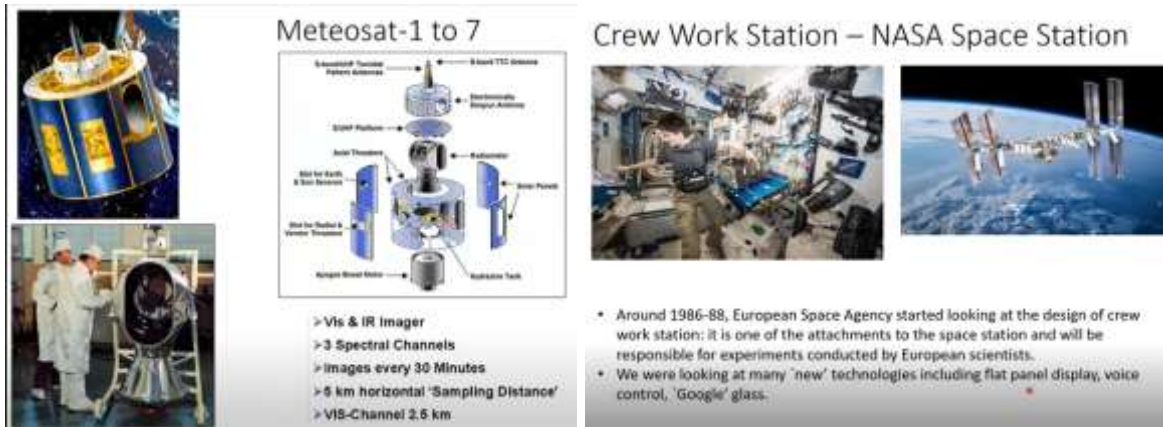


Fig. 1: Meteosat satellites project (left) and “new” technology design for space station (right).

In 1990 October, Professor left UK and started his academican journey in Department of Physics, Hong Kong Baptist University. He setup his own optoelectronic device fabrication laboratory in the department, and carrying his research interests in polymer laser materials, femto-second laser spectroscopy, sapphire thin film deposition on glass (ArmoGlass), integrated organic laser device, organic LED, laser oximetry, metamaterials, Rabi Splitting, cavity plasmonic, etc (see Fig. 2).

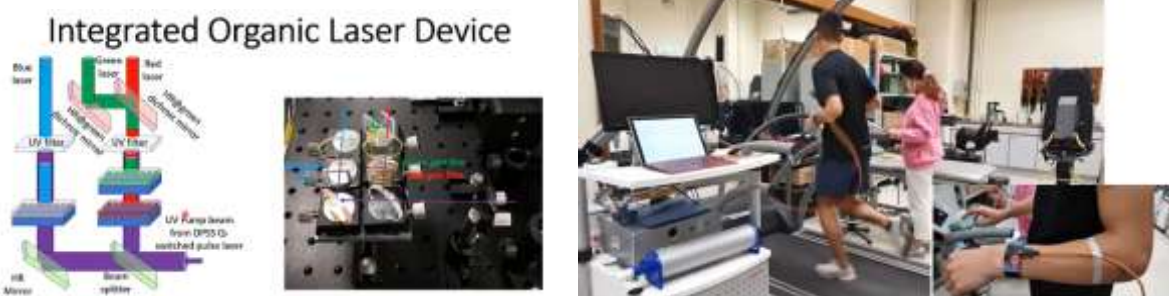


Fig. 2: Integrated organic laser device research (left) and laser oximetry research (right) undertaken by Professor Cheah and his team.

Amongst the research projects, the notable ArmoGlass stood out from 1,000 projects from 40 countries and won the Grand Prix Award, a Gold Medal and a Special Award at the International Exhibition of Inventions of Geneva, the world’s largest event of its kind, in 2016. Professor Cheah possesses 39 patents and has secured over 49 research grants. His papers and publications are frequently referred by scholars.

Over the years, Professor Cheah has met and collaborated with many great Physicists who have made significant contribution towards understanding the nature in Physics. Some of the great Physicists are Nobel Laureates, namely Steven Chu (1997), William D. Phillips (1997), Chen Ning Yang (1957), Samuel Chao Chung Ting (1976), Roy J. Glauber (2005), Willis Eugene Lamb (1955), etc (See photographs in Fig. 3).

Yang Chenning 杨振宁 – @1999, 2007, 2008



- Nobel prize in Physics 1957
- Now in Tsinghua University, Beijing
- Together with T. D. Lee are first Chinese to receive Nobel prize
- Honorary degree from HKBU in 1999



Roy Glauber 1997, 2006, 2012



- Nobel prize in Physics 2005
- Father of Quantum Optics
- Professor @ Harvard University
- Honorary degree from HKBU in 2012

Fig. 3: Photographs of Professor Cheah together with the great Physicists.

At end of the talk, Professor Cheah shared four precious thoughts gained in his life:

- There is no substitute to hard work.
- Understanding of the fundamentals in science is crucial to innovation.
- Be humble & be prepared to learn.
- Universe is about 13 billion years old, and we, human, can only describes 4% of this universe.