

Honoured by Society of Women Engineers for her outstanding technical excellence and accomplishments

FIRST WOMAN from the Asia Pacific to be elected an associate member of the International Academy for Production Engineering (CIRP), one of the most elite academies for manufacturing researchers in the world, Assoc Prof Ong Soh Khim is once again, honoured for her contributions in engineering.

On 16 October, she received the [Society of Women Engineers' 2009 Emerging Leader Award](#) in the field of Academia at the Society's Annual Conference held at Long Beach, California. The Award honours mid-career women engineers who have demonstrated outstanding technical excellence as individuals resulting in significant accomplishments.

Currently lecturing in the Manufacturing Division of the Department of Mechanical Engineering and a Junior Faculty Member of the NUS Graduate School for Integrative Sciences and Engineering, Assoc Prof Ong is no stranger to winning awards.

Besides teaching award from NUS and her first major award, the M Eugene Merchant Outstanding Manufacturing Engineer Award by the US Society of Manufacturing Engineers in 2004, this vivacious engineer has garnered many other accolades including Singapore Youth Award (Science and Technology Category) which she won in the same year, the Samsung DigitAll HOPE Award in 2005 for her project, Augmented Reality Assistive Keyboard which enables the elderly and disabled to use all the functions a computer can offer, as well as to operate household appliances.

It was also in 2005 that she was elected to CIRP. She was appointed by Singapore President S R Nathan in the same year to serve as a Nominated Member of the Parliament (NMP). While serving as NMP, she was on the Resource Panel for advising Women's Workgroups on Women and Leadership, Work, Life Skills and Socio-Community Development.

In 2006, she received the The Outstanding Young Person of Singapore Award (Science and Technology Category) from the Minister for Community Development, Youth and Sports Dr Vivian Balakrishnan, and was also elected to join elite leaders of the Asia 21 Young Leaders Summit.

Referring to her first major achievement, the M Eugene Merchant Award, she said, "I did not realise that I was good enough to compete with young researchers and academics worldwide in this field! I was the first woman in Asean to receive this award. Being a true product of NUS -- I did my undergraduate and PhD degrees at NUS -- receiving the Award has confirmed my longstanding belief that 'made-in-Singapore' can match up to the best in the world."

Assoc Prof Ong has always been passionate about getting innovations from the lab to the streets, especially in helping the disabled to become more mobile and independent. This is apparent as her research interests include Virtual and Augmented Reality Applications in Manufacturing as well as Augmented Reality Applications in Assistive Technology and Rehabilitation Engineering.

Despite her many awards, Assoc Prof Ong is still elated about her recent award. The Award by the Society of Women Engineers is an affirmation of her passion in engineering and what she does as an academic. She has been told that her eyes lit up whenever she is delivering a lecture. Passion is her driver on the road to success. She once told the media that she has a “die-die must try attitude” and that she would not be able to survive without work.

“Receiving this Award means a lot to me as I have become the first female engineer from Singapore honoured with this emerging leader award, signaling that NUS-trained engineers are at par. I am deeply honoured as it is the recognition of my hard work and achievement during the last 15 years.,” said Assoc Prof Ong.

As to what inspires her, she said, “I am inspired by capable men and women... people who dare to go against the norm and yet make good sense... people who dare to be different, people who are mavericks.”

Making AR a reality for the disabled and elderly

UNDER Assoc Prof Ong Soh Khim’s leadership, research on Augmented Reality (AR) assistive technology has been taken to application level, especially for the disabled and elderly. In collaboration with the Society for the Physically Disabled in Singapore, Assoc Prof Ong and her team have done surveys and trials on the use of AR to control appliances and access computer applications with positive user response. Their research has developed multiple modes of operations using head, finger and even eyebrow movements or just voice input to control appliances and equipment.

Assoc Prof Ong and team are currently researching on mobile AR in the form of wearable interfaces. Combining various technologies such as Differential Global Positioning System (GPS), her research addresses applications in precision navigation, mobile information delivery and 3D visualisation in fields such as product design and parts machining.

The team is also developing a rehabilitation system using AR technology to help accident or stroke victims recover their upper limb and hand movements. They have developed a working prototype which can track hand movements using computer vision and data gloves. The researchers have also developed a prototype based on bare-hand interaction and MEMS (Microelectro-mechanical systems) sensors to detect upper limb movements.



Assoc Prof Ong Soh Khim (standing, far left) is passionate in her research on Augmented Reality assistive technology.