

ENGINEERING CORNER

Cutting-edge expertise

> Southampton leads the way

DR SEUNG HWAN WON has been teaching at the University of Southampton Malaysia Campus (USMC) since April 2013.

Currently the associate professor teaches Programming, Digital Systems, Mobile Communications and Mathematics in the Electrical and Electronic Engineering programme.

Won (pix) was the recipient of the 2004 State Scholarship of the Information and Telecommunication National Scholarship Programme, awarded by the Ministry of Information and Communication, South Korea.

Here, he shares his thoughts with *theSun* readers:

Can you tell us about your academic and research background?

I received BSc. and MSc. degrees in Radio Science and Engineering from Korea University, Seoul, in 1999 and 2001 respectively, and a PhD degree from the Communications Research Group, Electronics and Computer Science, University of Southampton, UK, in 2008.

I was a research engineer with the Mobile Communication Technology Research Laboratory, LG Electronics R&D before I completed my PhD. After I graduated from the University of Southampton, I was a senior engineer with Modem Team, Digital Media & Communications Business, Samsung Electronics Co. Ltd.

I now work for the University of Southampton Malaysia Campus as an associate professor.

What inspired you to follow your area of expertise?

In 1995, one of the commercial 2G mobile communication systems, Code Division Multiple Access (CDMA) had been deployed in the Republic of Korea. It was the first commercialisation of the new system around the world—at that time, only Global System for Mobile Communications (GSM) had been deployed around the world. In order to gain a competitive edge over other developed countries, Korea developed this new technology. I became interested in this area of expertise due to CDMA's commercial success.

What would you say is the most challenging project that you have undertaken?

As a senior engineer at Samsung Electronics, I was involved in a commercial mobile station modem design project. This modem is currently being used in the well-known Galaxy S and Note series. Making a commercial level of mobile station modem was extremely challenging; indeed, many big companies around the world had given up on this project. However, Samsung made it work at a commercial level.

To achieve commercial success, countless obstacles had to be overcome. During the final stage of the project, there were no weekends for me; I worked 21 days in a row with no breaks.

What current research projects are you working on?

Currently, I am working with Prof Lajos Hanzo, head of Communications Research Group, Electronics and Computer Science, University of Southampton.

Our research interests encompass synchronisation (including cell search schemes) and estimation schemes (including speed, location, and channel status) in diverse cooperative MIMO-

aided multi-carrier systems and MIMO-aided mmW mobile broadband communication systems.

As examples of our research plan, with over eight years of industrial research experience gained at both LG and Samsung Electronics, I will be investigating feasible solutions and their possibilities of extensive cell search and key parameter estimation schemes through both theoretical and practical approaches. I believe this opportunity is capable of taking the initiative over other 5G research activities.

What advice do you have for students entering your field of study?

My advice to students would be to continue pursuing their studies relating to their field and obtaining practical experiences in the long term. Achieving a position of either senior level engineer or professional academic staff takes many years and requires candidates to remain committed and focused on achieving their goals. Therefore, constantly getting themselves updated plays a pivotal role in their career path.

How do you see your graduates making an impact in the field?

To achieve a successful career, graduates should work in a specific field over many years. Without gaining profound knowledge of their area of expertise and related practical experiences, they cannot be the master of a specific area. With the University of Southampton's well-designed teaching and learning schedules, I believe that our students are able to maximise their potential. After graduation, they will have a solid background to embark on their successful career path.

Can you share with us your previous experience working in LG Electronics & Samsung Electronics?

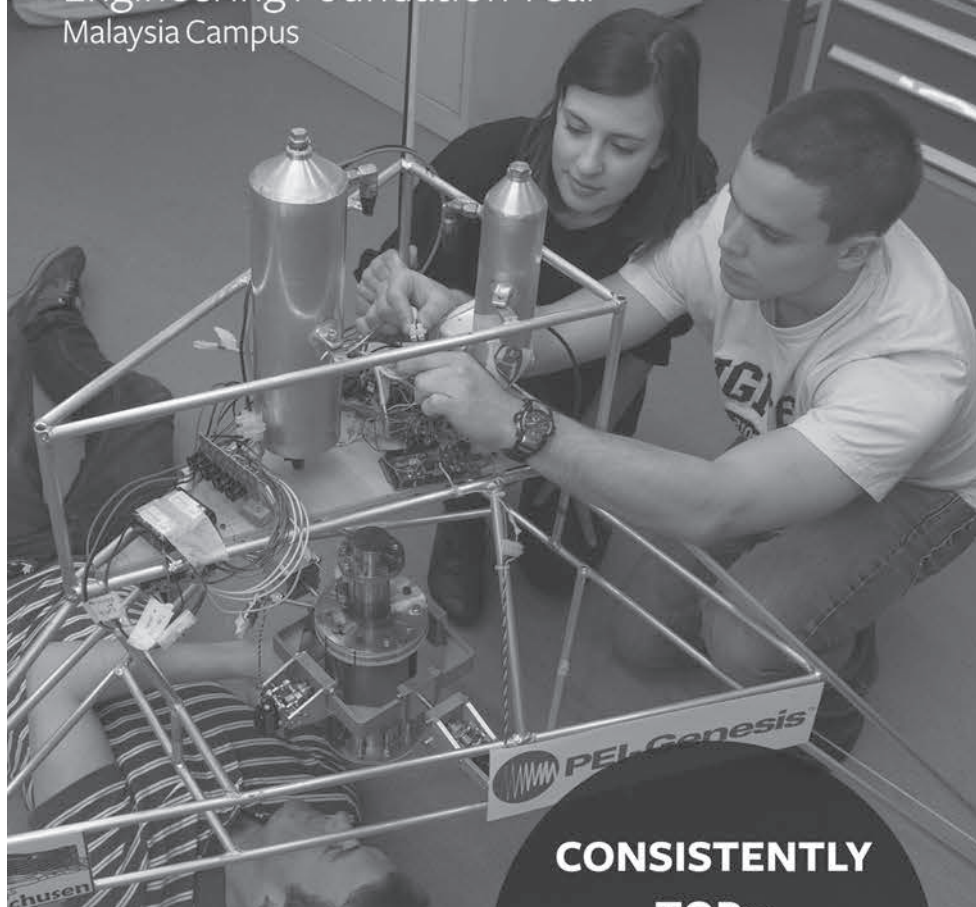
Throughout over eight years of industrial research experience gained at both LG and Samsung Electronics, I was involved in the design of commercial mobile station modem, 3G W-CDMA network optimisation and standardisation of 3G systems. As a result of my research and development in these areas, 21 US patents and more than 50 Korean patents have been granted or applied for.



UNIVERSITY OF
Southampton

LAYING A SOLID FOUNDATION

Engineering Foundation Year
Malaysia Campus



CONSISTENTLY
TOP 3
IN THE UK FOR
ENGINEERING
EDUCATION*

SCHOLARSHIPS
AVAILABLE FOR
APRIL INTAKE
CALL US FOR MORE
INFORMATION

Courses offered

– Engineering Foundation Year (starts in April 2015)

MQA/PA5359

– MEng Aeronautics & Astronautics

JPT/BPP(U)1000-801/97/Jld.1(18)

– MEng Electrical & Electronic Engineering

JPT/BPP(U)1000-801/97/Jld.1

– MEng Mechanical Engineering

JPT/BPP(U)1000-801/97/Jld.1(5)

* The Guardian University Guide, 2011-2015



Scan here for
Scholarships
information.

Contact us

Email: marketing.malaysia@southampton.ac.uk | Phone: 07-560 2560

University of Southampton Malaysia Campus (913717-X),
No. 3 Persiaran Canselor 1, Kota Ilmu EduCity@Iskandar, 79200 Nusajaya, Johor, Malaysia

www.southampton.edu.my

www.facebook.com/MalaysiaCampusSoton