

## Emeritus Professorship – Bernard Tan Tiong Gie

Prof Bernard TAN Tiong Gie was presented the Emeritus Professorship award by Provost Prof TAN Eng Chye at tea reception organised by the Department of Physics on 20 June at Physics conference room.

The award of Emeritus Professorship is conferred to full professors on retirement in recognition of their sustained contributions in distinguished scholarship and service to the University.



Provost Prof Tan Eng Chye presented Prof Bernard Tan Tiong Gie the Emeritus Professorship award.



Deputy Dean Prof Peter Ho presented Prof Bernard Tan Tiong Gie an appreciation gift from the Faculty of Science.

### **Citation for Emeritus Professor Bernard Tan Tiong Gie**

Prof Bernard Tan had his hand in many of the developments in Science, and beyond, in Singapore. The following is a summary of some of Professor Bernard Tan's momentous efforts and contributions throughout his career.

- **Promotion of Information Technology and Applications, and the computational approach to scientific research** - Prof Tan introduced the first mini-computer (PDP-11) and Bitnet (the precursor to present day World Wide Web) on campus in the early 1980s, and later provided strong support in creating the Computational Science Programme/ Department in the Faculty of Science. The CPA (Computer Programming and Applications) courses were also introduced during his Deanship and provided students in Science with the opportunities to attain proficiency and literacy in computing skills.

- **Surface and materials science** – Prof Tan provided much leadership in the drive to establish capabilities in the study and manipulation of material surfaces at the height of the silicon wafer and magnetic storage manufacturing phase of the Singapore “high-tech” industries in the 1980s. The acquisition of the then state-of-the-art equipment and facilities (e.g. the ESCA –XPS) provided the much-needed impetus that propelled the surface science research group to a level that was competitive with many leading institutions in the world. He personally was involved in many of the projects. These efforts laid the foundation for the later creation of the Department of Materials Science (first in the Faculty of Science, before it was transferred to the Faculty of Engineering), and the many subsequent developments and achievements in the area of nano-scale science and technology. A recognition came with Professor Tan Kuang Lee, then A/P Neoh Koon Gee and then A/P Kang En Tang sharing the 1996 National Science Award “*for their outstanding contributions in photoelectron spectroscopic investigation of the structures and properties of polymers*”.
- **Nuclear beam science and technology** – Prof Tan pushed for the purchase of the first Van der Graaff generator in the 1980s, and with that, he was able to recruit a team of researchers that eventually built up a very respectable nuclear/ion beam setup, providing state-of-the-art XRF (X-Ray Fluorescence) and PIXE (Proton-Induced X-Ray Emission) facilities. That eventually evolved to the present day Centre for Ion Beam Applications (CIBA) in the Department of Physics. This experience and established expertise also contributed to the launch, at NUS, of the Singapore Synchrotron Light Source (SSLS), that now stands as a national research infrastructure.
- **Signal and image processing** – Prof Tan, having a long standing interest in signal processing, set up the first Laboratory for Image and Signal Processing (LISP) in the Faculty of Science in the late 1980s. LISP provided the space for the growth and nurturing of Singapore’s manpower, competence and confidence in signal and image processing, and these saw fruition in the establishment of the Centre for Remote Imaging and Signal Processing (CRISP) later. Again, Prof Tan’s efforts and leadership (from chairing the pro-tem board to the Management Board later) underscored this development. (Professor Lim Hock, also of Department of Physics, should share the credit in this effort.)
- **Music Landscape in Singapore** – Prof Tan is a serious classical music composer, and has been one of the prime movers in many developments in the music landscape in Singapore. He was involved in the setting up of the Singapore Symphony Orchestra (SSO) (including the invitation of Choo Huey as the first SSO Conductor) and its subsequent management for many years. On campus, he worked on/with the “Department of Music”/Centre for Musical Activities/Centre for the Arts over the years. With others, he

put in significant efforts towards the establishment the NUS Yong Siew Toh (then Singapore) Conservatory of Music with the Peabody Conservatory of Johns Hopkins University and was a part of the team that guided and nurtured the evolution of the Conservatory over the years and through three Directors.

- **Maritime industry in Singapore** - Prof Tan's involvement (as a member of the Board of Directors) with the Keppel Corporation from the 1980s to the early 2000s, and Keppel Telecommunications and Transportation from 2003, probably makes him the university academic with the longest link to the maritime industry in Singapore. These long years of affiliation must have (if indirect) impact on the institutional relationship between NUS and Keppel Corporation, as we saw the launch of the NUS Centre for Maritime Studies (of which Professor Tan is the Founding Director) in 2005, and the Keppel-NUS Corporate Laboratory in 2013.
- **Service contributions to NUS as Vice-Dean (1979-85) and Dean (1985-97) of Science** -A long and illustrious list of service contributions to NUS. Most notably as Vice-Dean (1979-1985) and Dean (1985-1997): the development of many educational programs, the setting up of several new departments, initiation of a number of research platforms, and aligning the Faculty of Science for the next phase of growth into a research intensive faculty in the following years

Looking at Prof Tan's lifetime of achievements, it is impossible to overlook the breadth and impact of his selfless service contributions to the University and to Singapore. Prof Bernard Tan is someone who set the trend and helped build the ecosystem that allowed those who come after him to attain the academic excellence that contributes to the prestige of NUS.