Press Release

Aug 21, 2017

Association of Asia-Pacific Physical Societies (AAPPS)

Division of Plasma Physics (AAPPS-DPP)

Subramanyan Chandrasekhar Prize of Plasma Physics

– Professors C.Z. Cheng and L.C. Lee are selected as Laureate of 2017 –

The Division of Plasma Physics (Chair: Mitsuru Kikuchi) under the Association of Asia Pacific Physical Societies (President: Gui-Lu Long) selected Professor Chio Zong Cheng of the National Cheng Kung University and Professor Lou-Chuang Lee of the Academia Sinica as the 2017 Laureates of S. Chandrasekhar Prize of Plasma Physics, which is awarded to scientists who have made seminal / pioneering contributions in the field of plasma physics.

Citations

C.Z. Cheng：*For original and pioneering contributions in fusion and space plasmas that include the theoretical discovery of Torodicity-Induced Alfven Eigenmodes, the invention of a splitting scheme for Vlasov simulation, pioneering three-dimensional Particle-In-Cell turbulence simulations in tokamaks, and the establishment of magnetized plasma experimental capability and space instrumentation development in Taiwan.*

L.C. Lee: *For his seminal contributions to space plasma physics in the theories of strong scintillations, auroral kilometric radiation, multiple X-line reconnection, and dynamic formation of solar prominences, as well as the discovery of gigantic jets in the atmosphere; and outstanding leadership in the successful FORMOSAT satellite program in Taiwan.*

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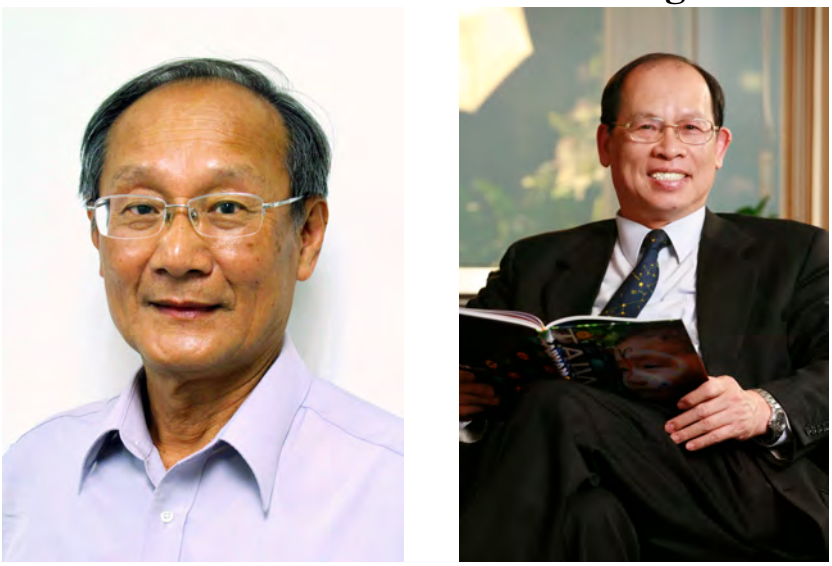
Press Release

On the achievements of Professors C.Z. Cheng and L.C. Lee



Professor Chio Zong Cheng (left) and Professor Lou-Chuang Lee (right)

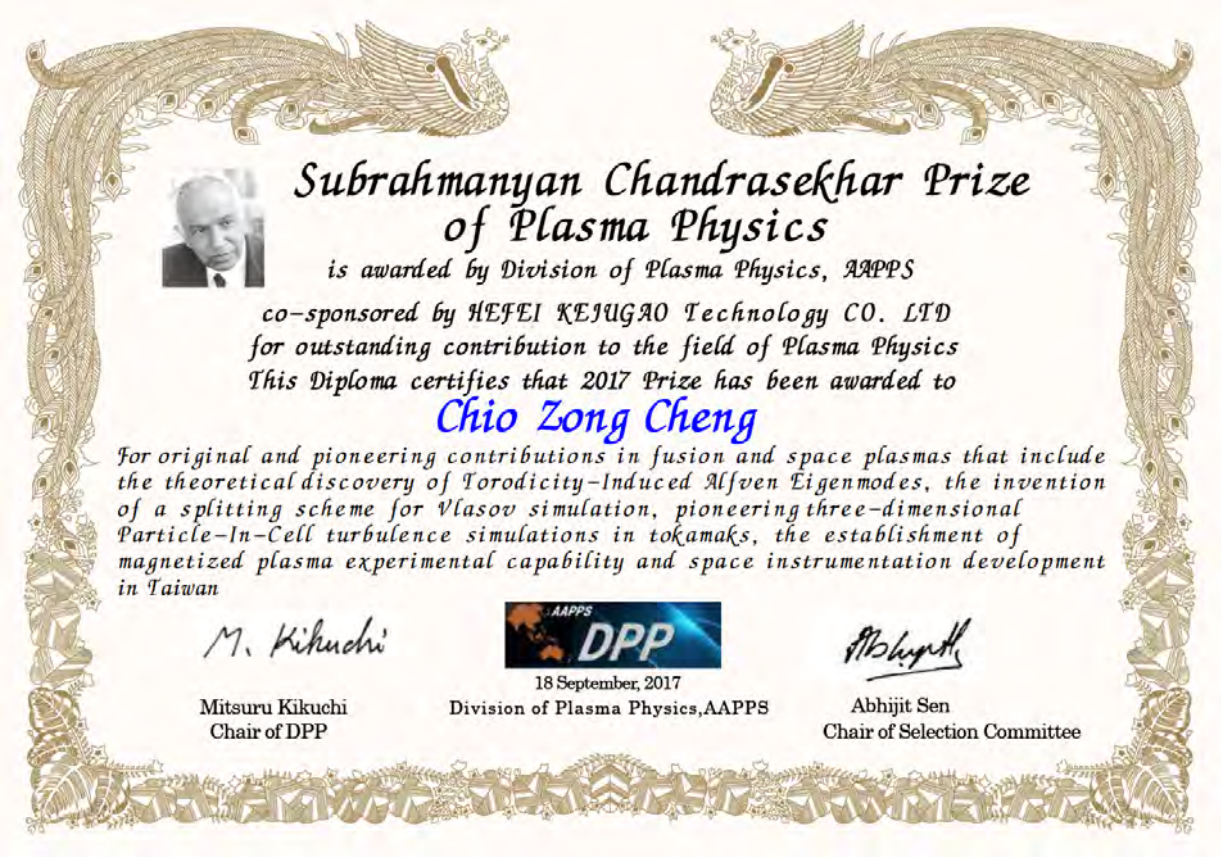
Professor C.Z. Cheng and Professor L.C. Lee have made original and seminal contributions in plasma physics as in their citations above.

Prof. C.Z. Cheng worked at Princeton Plasma Physics Laboratory in USA (1975-2005) and made theoretical discovery of the plasma instability driven by energetic particles called the TAE mode (Cheng, Chen, Chance 1985; Cheng, Chance 1986) that will be an important for the mission achievement in ITER. Then, he developed a numerical code NOVA-K (Cheng 1992; Cheng, Chance 1987) which has been widely used to study TAEs in tokamaks such as TFTR (USA) and JT-60U (Japan). He also made original contribution to simulation scheme of the Vlasov simulations (Cheng, Knorr, 1976). He developed the kinetic ballooning instability theory as substorm onset mechanism (Cheng, Lui 1998). His publications received over 10, 300 citations in Google Scholar (H-index 54) and over 6900 citations in Web of Science (WoS) (H-index 45), with 10 articles having more than 100 WoS citations.

Prof. L.C. Lee is one of the pioneers in space plasma physics. He developed a strong scintillation theory for the scattering of radio waves by turbulent plasma observed in radio astronomy (Lee, Jokipii I, II 1975) and also predicted Kolmogorov spectrum for the interstellar medium. He developed a landmark theory of auroral kilometric radiation (AKR) known as the cyclotron maser theory of AKR (Wu, Lee 1979; Lee, Wu 1980). He also identified key energy transfer process from the solar wind to the magnetosphere through magnetopause (Lee, Kan 1979; Kan, Lee 1979) and explained the intermittent magnetic reconnection called the flux transfer event (FTE) by a multiple X line reconnection (MXR) process (Lee, Fu, 1985). His publications have received over 10, 600 citations in Google Scholar (H-index 56) and over 7700 citations in WoS (H-index 45), with 14 articles having more than 100 WoS citations.

Appendix-1: Certificates of 2017 S. Chandrasekhar Prize of Plasma Physics

Certificate and medal will be given at the First Asia-Pacific Conference on Plasma Physics in September 18-23 at Chengdu, China.



Subrahmanyan Chandrasekhar Prize of Plasma Physics

is awarded by Division of Plasma Physics, AAPPS

co-sponsored by HEFEI KEJUGAO Technology CO. LTD

for outstanding contribution to the field of Plasma Physics

This Diploma certifies that 2017 Prize has been awarded to

Chio Zong Cheng

For original and pioneering contributions in fusion and space plasmas that include the theoretical discovery of Torodicity-Induced Alfven Eigenmodes, the invention of a splitting scheme for Vlasov simulation, pioneering three-dimensional Particle-In-Cell turbulence simulations in tokamaks, the establishment of magnetized plasma experimental capability and space instrumentation development in Taiwan

M. Kikuchi — Mitsuru Kikuchi, Chair of DPP

18 September, 2017, Division of Plasma Physics,AAPPS

Abhijit Sen, Chair of Selection Committee

Subrahmanyan Chandrasekhar Prize of Plasma Physics

is awarded by Division of Plasma Physics, AAPPS

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for outstanding contribution to the field of Plasma Physics

This Diploma certifies that 2017 Prize has been awarded to

Lou-Chuang Lee

For his seminal contributions to space plasma physics in the theories of strong scintillations, auroral kilometric radiation, multiple X-line reconnection, and dynamic formation of solar prominences, as well as the discovery of gigantic jets in the atmosphere; and outstanding leadership in the successful FORMOSAT satellite program in Taiwan

M. Kikuchi — Mitsuru Kikuchi, Chair of DPP

18 September, 2017, Division of Plasma Physics,AAPPS

Abhijit Sen, Chair of Selection Committee

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Appendix-2: Glossary

1. Subrahmanyan Chandrasekhar

Astrophysicist born in India. He received the Nobel Prize in Physics in 1983 *for his theoretical studies of the physical processes of importance to the structure and evolution of stars,* including the Chandrasekhar limit on the mass of white dwarf stars. His research covered several broad areas, as seen from his texts, which included *Principles of Stellar Dynamics* (1942), *Hydrodynamics and Hydromagnetic Stability* (1981), and an influential book based on his lecture notes in *Plasma Physics* (1960).

2. AAPPS: Association of Asia-Pacific Physical Societies

（HP: http://www.aapps.org/main/index.php）

The Association of physical societies in the Asia Pacific region founded by the Nobel Laureate in Physics C.N. Yang, and Professor Akito Arima in 1983. The AAPPS held the 12th Asia Pacific Physics Conference under the president (at that time) Shoji Nagamiya in Makuhari, Japan. The current president is Professor Gui-Lu Long, Tsinghua University, China.

3. AAPPS-DPP: Division of Plasma Physics, AAPPS

（HP : http://aappsdpp.org/AAPPSDPPF/index.html ）

The first division under the AAPPS based on the success of the plasma physics program in the APPC-12. This division was formed in January 2014 based on the recommendation of Professor Nagamiya at the AAPPS council.

4. Subrahmanyan Chandrasekhar Prize of Plasma Physics

Plasma physics prize was founded by the AAPPS-DPP in July 2014. This prize is given to a plasma physicist annually for pioneering and/or seminal contribution to plasma physics. The 2014, 2015 and 2016 prize recipients were Professor S. Ichimaru, Professor P. Kaw and Professor D. Melrose (http://aappsdpp.org/AAPPSDPPF/prizetable.html). The 2017 prize is co-sponsored by HEFEI KEJUGAO Technology CO. LTD (合肥科聚高技术有限责任公司).

The 2017 Selection Committee composed of leading plasma physicists in Asia-Pacific region. The chairman is Professor Abhijit Sen (Institute for Plasma Research) and members are, Professor Yasushi Ono (The University of Tokyo), Professor Hideo Sugama (National Institute of Fusion Science), Professor Liu Chen (Zhejiang University), Professor Yutong Li (Institute of Physics, CAS), Professor Chan-He Nam (Gwangju Institute of Science and Technology), Professor Dong-Hun Lee (Kyung Hee University), Professor Robert Dewar (Australian National University), Professor Don Melrose (University of Sydney), Professor Ravindra Kumar (Tata Institute of Fundamental Research), Professor Lin I (National Central University), Professor Kwo Ray Chu (National Taiwan University).

5. H-index:

The definition of the index is that a scholar with an index of *H* has published *H* papers each of which has been cited in other papers at least *H* times