Press Release

Aug. 10? 2021
Association of Asia-Pacific Physical Societies (AAPPS)
Division of Plasma Physics (AAPPS-DPP)

Subramanyan Chandrasekhar Prize of Plasma Physics

– Professor Taik Soo Hahm is selected as 8th (2021) Laureate –

The Division of Plasma Physics (CEO: Mitsuru Kikuchi, Chair: Baonian Wan) under the Association of Asia Pacific Physical Societies (President: Jun'ichi Yokoyama) has selected Professor Taik Soo Hahm of the SNU (Seoul National University) as the 8th (2021) Laureate of S. Chandrasekhar Prize of Plasma Physics, which is awarded to scientist who have made seminal / pioneering contributions in the field of plasma physics.

Citations

Taik Soo Hahm : *For his outstanding contributions to the understanding of turbulence and confinement physics in tokamak plasmas, i.e., notably, flow shearing effects and non-local transport processes, as well as to the pioneering development of modern nonlinear gyrokinetic theories.*

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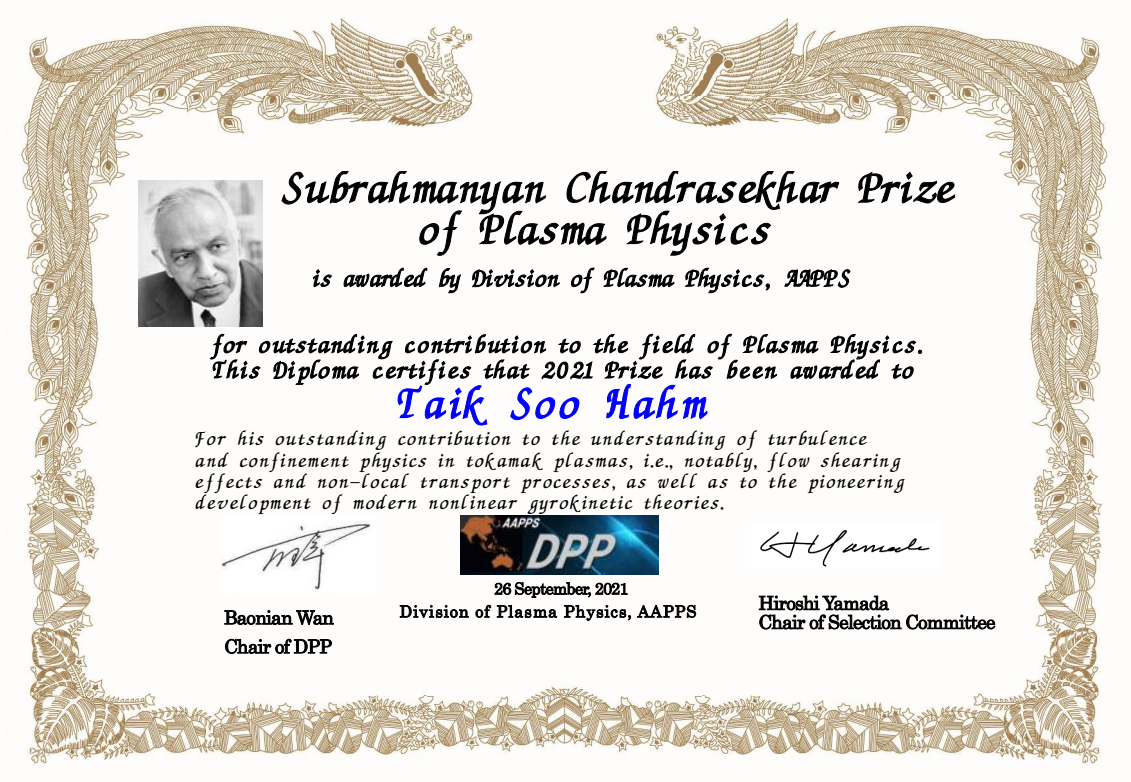

Certificates of 2021 S. Chandrasekhar Prize of Plasma Physics

Certificate and medal will be virtually given at the 5th Asia-Pacific Conference on Plasma Physics (AAPPS-DPP2021 online e-conference) Sept, 26-Oct 1, 2021.

On the achievements of Professor Taik Soo Hahm

Prof. Taik Soo Hahm

Prof. Taik Soo Hahm was born in 1957 in Seoul, received his Batchelor's degree from Seoul National University in 1980, and Ph.D. degree from Princeton University in 1984. After taking a postdoctoral position at University of Texas, he worked at Princeton Plasma Physics Laboratory since 1986, and became a Distinguished Laboratory Research Fellow in 2006. Then, he moved to Seoul National University as a full Professor of Department of Nuclear Engineering in 2011. In addition, he also worked at National Fusion Research Institute (upgraded to Korea Institute of Fusion Energy in 2020) as the Director of Advanced Technology Research Center from 2015 to 2017.

He is well-known internationally for his fundamental contributions to several subjects in magnetic fusion plasma research including:

1. The development of modern nonlinear gyrokinetic theory in toroidal geometry published in [Hahm, Phys. Fluids 1988] with 367 WoS citations and [Brizard and Hahm, Rev. Mod. Phys 2007] with 614 WoS citations.
2. The ExB flow shear reduction of plasma turbulence in general toroidal geometry in which radial variation of poloidal magnetic field in addition to that of radial electric field is shown to be important. This has been published in [Hahm and Burrell, Phys. Plasmas 1995] with 497 WoS citations and enhanced the level of theory-experiment validation regarding transport barrier formation.
3. The introduction of self-organized criticality to magnetic fusion as a nonlocal transport mechanism published in [Diamond and Hahm, Phys. Plasmas 1995] with 317 WoS citations, and the development of turbulence spreading theory and comparisons to gyrokinetic simulations in [Hahm, Diamond, Lin, Itoh and Itoh, PPCF 2004] with 153 WoS citations.
4. The modern gyrokinetic derivation of magnetic curvature driven non-diffusive momentum flux, known as the turbulent equipartition (TEP) momentum pinch published in [Hahm, Diamond, Gurcan and Rewoldt, Phys. Plasmas 2007] with 151 citations.
5. The key role in bridging theory, gyrokinetic simulations and experimental measurements, in particular on zonal flows in [Hahm, Burrell, Lin, Nazikian and Synakowski, PPCF 2000] with 91 WoS citations and in summarizing their status in a widely recognized review [Diamond, Itoh, Itoh and Hahm, PPCF 2005] with 1,389 citations.

His total citation is 10,971, with an average citations per paper 62, and H-index 48 according to Web of Science. He was elected to a Fellow of American Physical Society in 1995, and received the Kaul Prize for Excellence in Plasma Physics and Technology Development in 2005.

Appendix:

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 Jun'ichi Yokoyama, the University of Tokyo, Japan.

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. From Nov 28, 2018, AAPPS-DPP becomes legal entity http://aappsdpp.org/DPPhoujin/index.html .

4. Subrahmanyan Chandrasekhar Prize of Plasma Physics

Subrahmanyan Chandrasekhar Prize of Plasma Physics is a top plasma physics prize founded by the AAPPS-DPP in July 2014 and is endorsed by AAPPS. This prize is given to a plasma physicist annually for pioneering and/or seminal contribution to plasma physics. The prize recipients were Professor S. Ichimaru (2014), Professor P. Kaw (2015), Professor D. Melrose (2016), Professors C.Z. Cheng and Lou C. Lee (2017), Professor Toshiki Tajima (2018), Professors Liu Chen and Kazunari Shibata (2019), Professor Hyeon Park (2020) (http://aappsdpp.org/AAPPSDPPF/prizetable.html).

The 2020 Selection Committee composed of leading plasma physicists in Asia-Pacific region.
Chairman : Professor Hiroshi Yamada (The University of Tokyo)
Vice-chair: Professor Liu Chen (Zhejiang University)
Members : Professor Hideo Sugama (National Institute of Fusion Science)
Professor Michio Yamada (Kyoto University)
Professor Peng-Fei Chen (Nanjing University)
Professor Shaojie Wang (University of Science and Technology)
Professor Abraham Chian (University of Adelaide)
Professor Amita Das (Indian Institute of Technology Delhi)
Professor Sudeep Bhattacharjee (Indian Institute of Technology Kanpur)
Professor Lin-Ni Hau (National Central University)
Professor Chang-Hee Nam (Gwangju Institute of Science and Technology)
Dr. Jae-Min Kwon (Korea Institute of Fusion Energy)