


PRESS RELEASE


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Prof. Esashi received IEEE Andrew S. Grove Award



IEEE Andrew S. Grove RECIPIENT



2015 IEEE ANDREW S. GROVE AWARD

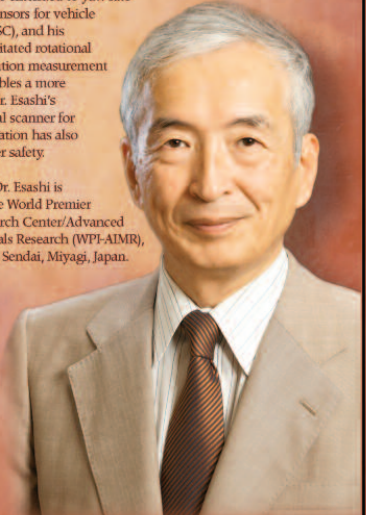
SPONSORED BY THE IEEE ELECTRON DEVICES SOCIETY
PRESENTED BY IEEE PAST PRESIDENT, ROBERTO DE MARCA, PH.D.

MASAYOSHI ESASHI

For Developments in
Micro-Electro-Mechanical Systems (MEMS)
Used in Transportation and Industrial Electronics

A pioneer of micro-electro-mechanical systems (MEMS) technology, Masayoshi Esashi developed ion sensitive FET (ISFET), which was commercialized as pH and CO₂ catheters in 1980 and provided an early example of lab-on-a-chip technology. He developed and commercialized many MEMS innovations. His integrated capacitive pressure sensor and MEMS switch for LSI testers are based on wafer level packaging. Dr. Esashi's resonating gyro was extended to yaw rate and acceleration sensors for vehicle stability control (VSC), and his electrostatically levitated rotational gyro, used for vibration measurement in railway cars, enables a more comfortable ride. Dr. Esashi's MEMS-based optical scanner for platform door operation has also improved passenger safety.

An IEEE Member, Dr. Esashi is a professor with the World Premier International Research Center/Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Sendai, Miyagi, Japan.



The director of the Fraunhofer Project Center for NEMS/MEMS devices and manufacturing technologies at Tohoku University, Principal Investigator of the World Premier International Research Center Advanced Institute for Materials Research (WPI-AIMR) and director of the Micro System Integration Center (μ SIC) at Tohoku University - Prof. Masayoshi Esashi - has been honored with IEEE Andrew S. Grove Award in 2015. He received the medal at the 28th IEEE International Conference on Micro Electro Mechanical Systems in Estoril, Portugal, taking place January 18-22, 2015.

Professor Esashi is a MEMS pioneer. He has not only a specialized knowledge and understanding of microelectronics, MEMS and integrated systems, but conducted a lot of collaborations with industry as well. Prof. Esashi's style of collaboration is referred to as "Open Innovation", which is now widely recognized as a successful scheme for innovation. He already started it more than 20 years ago. As a result, he

Editorial notes

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successfully commercialized many innovative prototypes and technologies with collaborating companies, starting from ISFETs in medical catheters, via inertial sensors for automotive, silicon microphones for recording TV programs up to a hermetic wafer-level packaging technology as a key enabling technology for the commercialization of MEMS devices. His basic policy in research is that the projects need to be industry relevant to meet social needs.

Moreover, Prof. Esashi has a comprehensive knowledge of the technology and market trends in sensor and smart systems integration. As an excellent scientist with far-sightedness he is addressing new research topics and brings technologies as well as devices into application and production. Professor Esashi is networking with specialists of different branches. Moreover, he is a brilliant teacher for students and young professionals, providing an excellent education, mentoring and support to the next generation of scientists.

The Center for Microtechnologies of Technische Universität Chemnitz and Fraunhofer ENAS have a long time scientific cooperation with Prof. Esashi. In 2007 he became an honorary doctor of the Technische Universität Chemnitz. The staff of Fraunhofer ENAS and ZfM of TU Chemnitz know Prof. Esashi as a very pleasant, hard-working and reliable person and mentor.

Fraunhofer Project Center “NEMS/MEMS Devices and Manufacturing Technologies at Tohoku University”

The Fraunhofer Project Center is a platform for common research and development activities of Tohoku University and Fraunhofer Institute for Electronic Nano Systems. The Fraunhofer Project Center is run to the benefit of both partners as a vehicle for:

- R&D cooperation in advanced manufacturing technologies as well as development and applications of new materials for microelectronic systems with a focus on NEMS/MEMS and micro/nano manufacturing technologies,
- Facilitating and expediting the commercialization of research and the transfer and adoption of new materials manufacturing technology by industry, particularly manufacturers of microsystems and semiconductor devices,
- Exploitation of new markets in the field of micro/nano systems manufacturing sectors,
- Introducing methods and standards of Fraunhofer-Gesellschaft for industrial collaboration to the research community in Japan and vice versa,
- Training the next generation of researchers, engineers and technicians through joint research programs.

Directors of the Fraunhofer Project Center are Prof. Thomas Gessner, Fraunhofer ENAS, Prof. Shuji Tanaka and Prof. Masayoshi Esashi, both Tohoku University.

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