

## Senichi Masuda 1926 - 1995



Prof. Senichi Masuda passed away in 27 April 1995 in Tokyo. He graduated from the University of Tokyo Department of Electrical Engineering in 1953. He became a full professor in 1968, occupying the chair "Application of Electrical Engineering". He retired from the University of Tokyo in 1987, where he remained professor emeritus. He served as president of the Fukui Institute of Technology until April 1993 and was then named president emeritus.

After retirement, he founded Masuda Research Incorporated in Tokyo and was chairman. He continued research and development in the application of electrostatics, especially in two cold plasma technologies, pulse corona induced plasma chemical process (PPCP) and surface discharge induced plasma chemical process (SPCP) for environmental pollution control.

Masuda was involved in research on electrostatics, focusing on electrostatic precipitation (ESP) and cold plasma applications for pollution control and ozone generation. After graduation of the University of Tokyo, he joined Onoda Cement Company, Ltd., where he studied the high resistivity problem of ESPs, and developed conditioning techniques for ESPs. After moving back to the University of Tokyo, he developed the "Electric Curtain", or so-called "Masuda panel", together with computer simulations of the motion of charged particles. Using standing wave or propagating wave electric fields, confinement or transportation of fine particles could be done. This system has been applied recently to single-cell manipulation in liquids and by NASA for cleaning of solar cells for space vehicles to Mars and the moon. His research in ESPs has been acknowledged internationally, including analysis of back corona in ESPs caused by high resistivity dusts, pulsed energization for suppression of back corona, propagation of nano-second pulses and energy-recovery-type pulse power supplies, pre-chargers such as Boxer chargers with the ion emission panel using ac surface discharge. The ac surface discharge ceramic panel has been used for ozone generation. He also suggested utilization of low temperature heat energy of liquid natural gas because ozone generation can be more efficient at low temperatures and low temperatures can be effectively used in the suggested system.

Masuda published 300 papers in refereed journals, as well as three books. He founded the Institute of Electrostatics Japan (IEJ), and served as its first president. He served as the first president of the International Society for Electrostatic Precipitation (ISESP) and as a vice president of the International Aerosol Research Assembly (IARA). He served as president of Japan Association of Aerosol Science and Technology (JAAST). He was elected as an honorary member of the IEJ, a corresponding member of Verein Deutscher Ingenieure (VDI), a member of the Electrostatic Society of America (ESA), a board member of ISESP, and a member of the Institute of Electrical Engineers Japan (IEEJ). He was a member of IEEE (Fellow '78, LF '92). He received many awards, including the F.G. Cottrell Award and the International Fellow Award of ISESP, the Frank A. Chambers Award of the Air Pollution Control Association, paper awards of the IEEE, the Award of Merit of ESA, the Achievement and Paper Award of IEEJ, and the Award of Merit and Paper Award of IEJ.

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