

International Lead Award

W. Wise

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On behalf of the global lead community, I have great pleasure in presenting the International Lead Award for 2005. This award is bestowed upon a person for exceptional contributions to the ongoing scientific, technical or commercial success of the lead industry.

This year's recipient – Dr. L.T. Lam – has established a distinguished record of research into advancing the science and technology of lead–acid batteries. Coincidentally, he was born in the town of My Xuyen that is about 280 km south of where we are gathered here in Vietnam for the Eleventh Asian Battery Conference. After his initial schooling, Dr. Lam travelled as an overseas student to Japan where he attained the degrees of Bachelor of Engineering and Master of Engineering from the Yokohama National University, and then a Doctor of Engineering from the Tokyo Institute of Technology.

Subsequently, Dr. Lam spent 6 years as the Chief of the Research and Development Laboratory of the Toshin Industry Co., Ltd., an electroplating business that manufactures precision components for computers.

In 1987, Dr. Lam migrated to Australia and joined the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Melbourne. He is now a Senior Principal Research Scientist in the Distributed Energy and Storage Theme of the CSIRO Division of Energy Technology.

Dr. Lam has been the research leader of many projects that have been well sponsored by companies and research organisations, both in Australia and throughout the world. The many successful outcomes of his dedicated and diligent work include the following.

- The design of novel plate-processing technology for a variety of flooded and valve-regulated lead–acid batteries.
- Definitive elucidation of the effects of bismuth in lead–acid batteries.
- The development of premium VRLA Refined™ oxide as a commercial product for valve-regulated lead–acid batteries.
- Fast-charging techniques for lead–acid batteries in electric-vehicle service.

- Determination of the maximum acceptable levels for residual elements in lead used in the production of valve-regulated lead–acid batteries for standby duty.
- Explanation of the early failure of original-equipment automotive batteries.



Dr L.T. Lam (left) receives the 2005 International Lead Award from Mr. Bill Wise.

- Disclosure of a novel pulse technique to improve the cycle-life of valve-regulated lead–acid batteries when operating under hybrid electric vehicle duty.

- Optimization of trace elements, plate-processing conditions and electrolyte concentration for valve-regulated lead–acid batteries designed for use in hybrid electric vehicles.

Together with his colleagues in CSIRO, Dr. Lam is presently developing the UltraBattery, which combines a lead-based supercapacitor and a lead–acid battery in a single unit. The capacitor component acts as buffer to share the discharge and charge currents with the lead–acid component. This unique arrangement protects the battery from being discharged and charged at high rates, and thereby, prolongs its service life. There are good prospects that this ground-breaking device will enable

lead–acid to become the battery of choice for application in hybrid electric vehicles.

Dr. Lam is held in high esteem as a keynote speaker at many international conferences and workshops and as a regular member of the expert panels at meetings of the Asian Battery Conference. He has also served as a scientific adviser to battery companies in China, Indonesia, Japan, Korea, Malaysia, The Philippines, Taiwan and Thailand. The scientific and technical expertise that he has provided in the Asian Region has been enhanced by his legendary linguistic skills in the English, Chinese (both Mandarin and Cantonese), Japanese and Vietnamese languages.

By virtue of these many attributes, Dr. Lam is indeed a worthy recipient of the 2005 International Lead Award.