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Proclamation of the Gaston Planté Medal Committee

Last year, the Lead-Acid Battery Community celebrated the 150th anniversary of the invention of the lead-acid battery. In 1989, in honour of the inventor of the lead-acid battery, the French scientist Gaston Planté, the Presidency of the Bulgarian Academy of Sciences established a medal after his name to be awarded to distinguished scientists who have contributed greatly to the development of lead-acid batteries. The medal is traditionally presented during the LABAT international conferences held every three years in Bulgaria.

The 8th LABAT conference, held this year in Albena Resort, was attended by more than 300 delegates from 41 countries. 72 lectures were presented by speakers from 6 continents and 31 companies chose to exhibit their products and services at the conference. Thus, LABAT'2011 became an important international event in the field of lead-acid batteries.

The recipients of the Gaston Planté medal are elected by a two-step procedure. First, all members of the International Advisory Committee of LABAT, a total of 29 researchers and battery experts from 15 countries, are asked to send their rating of the three most distinguished scientists who should compete for this award. The Organizing Committee summarizes all proposals and nominates the three highest ranked candidates for the Gaston Planté Medal Award. Then, the International Planté Medal Committee comprising 15 scientists and battery experts from 12 countries elects, by secret vote, the actual medalist.

This year, we received proposals for 27 battery scientists and experts to be considered for nomination. The highest number of rating points gained:

Dr. Lan Trieu Lam
Mr. Kenneth Peters
Dr. Eberhard Meissner
Dr. Boris Monahov

These four scientists were nominated and offered to the International Planté Medal Committee to vote for.

An interesting result was obtained, namely, the great majority of votes were equally divided between the first two nominees, Dr. Lan Lam and Mr. Kenneth Peters. We approached the Presidency of the Bulgarian Academy of Sciences and informed them of the voting results. The Presidency's decision was that this year the Bulgarian Academy of Sciences would grant two Gaston Planté Medals to the two candidates having received equal number of votes.

The 2011 Gaston Planté Medallists: Mr. Kenneth Peters (left) and Dr. Lan Lam (right)

The Gaston Planté Medal Committee congratulates the 2011 medalists Mr. Ken Peters and Dr. Lan Lam, and wishes Dr. Meissner and Dr. Monahov to win the award during the next nomination. We are convinced that they fully deserve it.

And now let me present brief scientific biographies of the Gaston Planté medalists – Dr. Lan Lam and Mr. Ken Peters.

Dr. Lan Trieu Lam

Dr. Lam obtained his Bachelor of Engineering degree in 1977 and Master of Engineering in 1979 at Yokohama National University, Japan, where he had conducted the research on chemical solution for silver polishing and electroplating of lead. He then obtained his Doctor of Engineering degree in 1982 at Tokyo Institute of Technology, where he had researched on the fundamental study of pulse plating, particularly, on the diffusion control, nucleation of growth and preferred orientation of silver, zinc and nickel during pulsed current plating.

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Dr. Lam worked subsequently at Toshin Industrial Co., Ltd., an electroplating company for switches and connectors used in computers, as the Chief of Research and Development Laboratory for six years. He was responsible for the research and development of plating machines, plating solution, gold and silver recovery, pollution treatment, quality control and staff training.

Dr. Lam joined CSIRO in 1988 and is now a Senior Principal Research Scientist in the Fuel Cell, Ionics & Storage group of the CSIRO Energy Technology (CET). Since 1988, he has been the research leader of many projects that have been well sponsored by either domestic or international companies/research organizations. His work has been concerned with the advancement of lead-acid batteries.

Dr. Lam's research has resulted in a sustained record of major contributions to both the lead and the battery industries that have resulted in the commercialization of new products and processes. Notable examples are as follows:

- Development of advanced leady oxide for valve-regulated batteries. This material is being marketed as VRLA Refined^{TM} lead by Pasminco Ltd., now known as Nyrstar.
- Development of two specifications for lead used in batteries. These specifications are now widely accepted by lead and battery industries.
- Development of mechanism explaining the premature failure of lead-acid battery under HEV duty and discovery of the battery-life enhancing benefits of fast charge using pulsed current technique for EV and HEV applications.

Recently, Dr. Lam has developed the UltraBattery, an integrated supercapacitor/lead-acid hybrid energy-storage device, for hybrid electric vehicle (HEV) and renewable applications. This hybrid battery has been considered as a step-change technology and has been covered by eleven patents. The technology has been licensed to Furukawa Battery Co., Ltd., Japan and East Penn Manufacturing Co., Inc., USA. At present, together with Furukawa Battery and East Penn Manufacturing, this technology is also under licensing negotiation with companies in Europe, China, India, South East Asia and Australia. *The greatest evidence to date of the success of the UltraBattery lies in the much-heralded US Government (Obama) Stimulus Package, the U.S. Department of Energy has voted US$32 million for the development of the CSIRO-invented UltraBattery technology by East Penn Manufacturing Co Inc.*

Since 2000, Dr. Lam has been awarded with four medals: (i) the CSIRO Chairman's Medal in 2000; (ii) the International Lead Medal in 2005; (iii) the CSIRO Medal for Research Achievement in 2008 and (iv) the Technical Development Award of The Electrochemical Society of Japan in 2009.

Mr. Kenneth Peters

Ken Peters obtained Honours degrees in General Science, and Special Chemistry from The University of London in 1951 before National Service in the Royal Electrical and Mechanical Engineers for two years. On leaving the army he joined The Chloride Electrical Storage Company at their new R&D facility under the direction of Dr. Montefiore Barak.

In 1957 he was appointed Manager of Lead Acid Developments at Chloride with a staff of 25 graduate chemists, engineers and technicians engaged in process and product development, including the study of oxides, additives/expanders, alloys, grid, plate and cell designs.

Early assignments included the development of impregnated cellulose separators for SLI batteries, subsequently manufactured at Chloride plants, and the assessment and qualification of leady oxides made in a new design of oxide mill.

He served as industrial tutor to sponsored students, visiting and advising students at University of Loughorough, University of Manchester Science and Technology and the University of Salford, and co-authored several publications. Subsequently, the University of Salford awarded him a Masters degree for assistance in their electrochemical studies.

In 1964, he studied the feasibility of an oxygen recombination cycle similar to that in sealed Ni/Cd cells, then widely used in cordless appliances and equipment. Good recombination efficiencies at high charging rates were feasible with saturation being the main controlling parameter. He made several hundred D cells with wound electrodes. The performance was relatively poor and Chloride were not interested in that market and the work was shelved.

Don McClelland and John Devitt of Gates Rubber Company had been working along similar lines and subsequently sent to Ken 50 D size sealed lead cells for testing. They used highly porous, and compressible glass filter paper as separator (the main inventive claim of US patent 3,862,861, published in 1975) and the cells had high power capability, cycled well and could be charged extensively without water loss. After testing, he suggested to Chloride management that a similar approach, but with prismatic design for their industrial and automotive batteries. He was invited to visit Gates at their Denver, Colorado head office for discussions with their Board of Management.

A joint working group with Gates was set up to consider the way forward. Gates were keen to keep to their wound cell design, while Chloride would manufacture the larger batteries for industrial and automotive needs.

Under Ken's supervision, extensive trials were carried out to define design parameters and in cooperation with a UK supplier to optimize separator structure and saturation levels for gas transport rates appropriate to the charging and capacity requirements. Methods of acid filling, formation schedules and assembly procedures were developed and low pressure one way valve designed, together with structural improvements to the container.

Cells were supplied to British Telecom for trials in 1978/9 and production commenced in 1983. By 1989, BT had installed 500,000 2 V/100 Ah valve regulated cells in power racks in their System X digital telephone exchanges.

Ken Peters retired from Chloride in 1991 and has since advised battery companies and suppliers in the USA and Europe. He was a member of the Editorial Board of the Journal of Power Sources for 20 years and has served on the Technical Advisory Committee of European Lead Acid Battery Conference for 25 years.

On behalf of the Gaston Planté Medal Committee, we would like to congratulate once again the new Gaston Planté Medalists and wish them good health and lots of success and creative energy in their future activities to the benefit of the development of our beloved lead-acid battery.

Prof. D. Pavlov (Chairman of LABAT'2011)
On behalf of the International Gaston Planté Medal Committee

Prof. A. Popov
Vice President of the Bulgarian Academy of Sciences