



Editorial to mark the eightieth birthday of Academician Detchko Pavlov



On the occasion of the 80th birthday of Academician Detchko Pavlov, the Editors of the *Journal of Power Sources* would like to recognize the enormous contribution that he has made to the research and development of lead–acid batteries.

Detchko Pavlov was born on the 9th of September 1930 in Shipka, a town in Central Bulgaria. After gaining a degree in electrochemistry from the Higher Institute of Chemical Technology in Sofia, he was employed by the Institute as an assistant in the physical chemistry department for 8 years. When the Institute of Physical Chemistry was founded at the Bulgarian Academy of Sciences, Academician Pavlov was invited to serve as a research scientist in the Department of Electrochemistry. It was then that he began his studies of the behaviour of lead-based electrodes in sulfuric acid solutions.

In 1967, Academician Pavlov and his colleague Professor E. Budevski established the Central Laboratory of Electrochemical Power Sources (CLEPS), in which he became the head of the Lead–Acid Battery Department (LABD). Without a shadow of doubt, the LABD has been, and continues to be, one of the foremost scientific schools devoted to the theory of lead–acid batteries. For this we should all be grateful as it is likely that, through its progressive improvement, this battery chemistry will play an important role in the storage of renewable energy, and even in the powering of increasing numbers of hybrid electric cars. Such developments are key steps along the pathway to securing a sustainable future for mankind.

Whenever the lead–acid manufacturing industry has met with a problem that requires scientific interpretation, it has invariably called upon the ‘Bulgarian School of Pavlov’ to undertake the necessary investigation. Consequently, the range of studies conducted by the LABD over the years has been extremely wide and comprehensive, as demonstrated by the following examples:

- the electrochemistry of lead electrodes,
- the semiconductor properties and morphology of lead oxides,
- the properties of lead sulfate and basic lead sulfates,
- the characteristics and function of the positive and negative active masses,

- the electrochemistry of antimony–, tin– and calcium/tin–lead alloy electrodes,
- processes related to the technology of lead–acid battery manufacture,
- thermal phenomena in valve-regulated lead–acid batteries,
- elucidation of premature capacity loss, and
- effects of carbon on negative plate performance.

In addition to these major contributions, the recognition by Academician Pavlov in 1989 of the need for an international meeting with a strong focus on battery science and technology, rather than on commercial considerations, has led to the outstanding success of the LABAT series of conferences. As testimony to their importance, the proceedings of these meetings have been published as Special Issues of the *Journal of Power Sources*. Academician Pavlov has also served for many years as a distinguished member of the International Advisory Board of the journal.

Academician Pavlov was awarded a Doctor of Science degree in 1984, and was appointed as Professor of Electrochemistry in 1985. In the same year, he was elected as a corresponding member of the Bulgarian Academy of Sciences, and in 1997 he became a Full Member (Academician).

Academician Pavlov has published extensively (often in the *Journal of Power Sources*) and has been invited to present his work at many conferences and to national bodies throughout the world. The value of his contribution has been acknowledged through a series of awards and honours: 1976, The Cyril and Methodius Medal; 1980, The Award of the Federal Ministry of Australia; 1984, The Research Award of the Electrochemical Society; 1986, The National Dimitrov Award for Science; 1994, The Gaston Planté Medal; 1995, The International Cultural Diploma of Honor; 2006, The Marin Drinov Medal with Ribbon – the highest award of the Bulgarian Academy of Sciences.

Academician Pavlov is acknowledged as a scientist and a scholar with a world-wide reputation for his contributions to the development and accompanying fundamental understanding of the first practical – and most enduring – rechargeable battery which, by a happy coincidence, also reaches a special (150th) anniversary this year! We wish Academician Pavlov continued success and good health for the years to come.

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