

## Paul Ruetschi: The Gaston Planté Medallist 1993

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### **Planté medallist**

The lead/acid battery brings into motion hundreds of millions of cars and ensures the reliable operation of power stations, computer centres and telecommunications. If the production of lead/acid batteries stops, human life will go back a century.

In 1989, wishing to acknowledge deservedly the contribution of the lead/acid battery inventor, the prominent French scientist Gaston Planté, the Bulgarian Academy of Sciences granted a medal in his name. The first recipient of the Gaston Planté Medal was Dr Ernst Voss from Germany.

This year, an International Committee that comprised eminent scientists from Germany, France, Japan, Russian Federation, UK, USA and Bulgaria selected Dr Paul Ruetschi from Switzerland to be the second recipient of the Gaston Planté medal.



Paul Ruetschi, Gaston Planté Medallist 1993.

Dr Ruetschi was born on 3 September, 1925 in Regensdorf, a suburb of Zurich, Switzerland. Having graduated from the Teacher's College in Wettingen, he entered the Federal Institute of Technology in Zurich and obtained Ph.D. (Dr. Sc. Nat.) from the Department of Physical Chemistry under Professor Trumpler. He stayed on as Assistant, and later spent one year in the research group headed by Professor Delahay at Louisiana State University, Baton Rouge, USA.

In 1955, Dr Ruetschi was offered a position at the Electric Storage Battery Company (ESB) in Philadelphia. There, he became Manager of Electrochemical Research. He returned to Switzerland in 1964, and was appointed Technical Director at Leclanché SA in Yverdon-les-Bains. He held this position over 28 years. Dr Ruetschi retired at the end of 1992 and now works part-time as a consultant for Leclanché SA.

Dr Ruetschi has been active in many scientific societies. During his time in the USA, he served as Chairman of the Physical Electrochemistry Division of the Electrochemical Society and was Executive Committee Officer of the Battery Division.

He is the author of over 70 scientific publications and over 30 patents, mainly in the field of physical chemistry and electrochemistry.

The major scientific contributions of Dr Ruetschi in the field of lead/acid battery research are as follows.

- Discovery of  $\alpha$ -PbO<sub>2</sub> in corrosion films formed on lead and lead alloys at high anodic potentials.
- Disclosure of the individual self-discharge processes in lead/acid batteries, and the stability of lead oxides in H<sub>2</sub>SO<sub>4</sub> solution.
- Determination of the composition of the corrosion layer on lead electrodes in H<sub>2</sub>SO<sub>4</sub> at various potentials. Investigation of ion selectivity and diffusion potentials in such corrosion layers. Quantitative description of the pH gradient in the corrosion layer.
- Development of a cation-vacancy model that relates defects in the crystallographic structure of MnO<sub>2</sub> and PbO<sub>2</sub> to their electrochemical activity.
- Various other achievements in the research of HgO, Zn, MnO<sub>2</sub> and Ag<sub>2</sub>O electrodes.

Dr Ruetschi was awarded the Silver Medal of the Swiss Federal Institute of Technology in 1953, the Young Author Award of the Electrochemical Society in 1957, and the Frank Booth Medal of the International Power Sources Conference Committee in 1980.

Dr Ruetschi is married and has four children. He likes nature and country life, art and sports, and lives with his wife Elisabeth on a farm near Yverdon-les-Bains.

Lead/acid battery researchers and manufacturers throughout the world congratulate sincerely Dr Ruetschi on receiving this high award. All wish him the best of health and creative activity on the way to further success.