

David Prengaman (Biographical sketch)



David Prengaman was born in 1943 in Pittsburgh, PA, USA. He received his B.S. in metallurgical engineering from Carnegie Institute of Technology and his M.S. in metallurgy and materials science from Carnegie Mellon University.

His area of specialization is, strengthening mechanisms and solidification in metals. His work history starts in St. Joe Minerals Corporation in Monaca as Manager Lead Product Development. After 1973, he moved to Atlanta to join Evans Metal Co. as Plant Manager. Since 1975, he worked for RSR Corporation in Dallas, TX first as Senior Vice President and now as President of this company. The professional career of Dr. Prengaman has been devoted to research and development of lead alloys for batteries, lead anodes, lead recycling and processes to produce battery grids. He has published more than 80 papers on lead alloys, materials for maintenance-free lead-acid batteries, corrosion of lead anodes and metal deformation processes. He has received 14 patents on anodes for metal electrowinning, methods of coating materials with lead and lead dioxide, metal deformation processes, etc. He has presented seminars in USA, Europe, Asia, South America and Eastern Europe on processes to produce improved lead-acid batteries.

Dr. Prengaman is a member of the Battery Council International, the Electrochemical Society of Metals, The

Metals, Minerals and Materials Society, the German Metallurgical and Mining Society and The American Society for Testing and Materials. He has held various leading posts in the above societies. Now he serves as Technical Chairman of ALABC at ILZRO. He has received numerous awards, including the Hofman Memorial Prize, the Special Service Award, the Alpha Beta Society Award, etc.

The major achievements of Dr. Prengaman can be summarized as follows:

- Developed method to continuously cast and roll strip, which resulted in wrought expanded Pb–Ca–Sn alloys. This is the major material for positive grids of SLI batteries today.
- Developed the Pb–Ca–Sn phase diagram. Explained areas of stability and instability.
- Investigated the segregation of calcium, tin and silver in Pb–Ca–Sn alloys and the benefits of segregation in grid alloys.
- Explained the effects of tin and calcium content on the mechanical properties, grain structures, and corrosion behavior of Pb–Ca–Sn alloys.
- Developed method of adding aluminium to lead which resulted in easy production of Pb–Ca–(Sn)–Al alloys and

control of composition. Explained mechanism of aluminium protection for lead–calcium alloys.

- In 1975, developed and introduced the first low antimony maintenance-free battery grid alloy, which could be cast on conventional grid casting equipment without cracking.
- Developed methods to refine secondary lead to low levels of impurities so that it could be used as active material in VRLA batteries.
- Developed hydrometallurgical and electrolytic process to recover high purity lead from spent batteries.

- Developed wrought lead–calcium alloy anodes which have become the dominant anodes for copper recovery via electrowinning.

Thanks to his creative activities, Dr. Prengaman has been recognized as one of the leading world specialists in the fields of metallurgy of lead alloys and lead-acid batteries. The Gaston Planté Medal Committee congratulates Dr. Prengaman on being awarded this medal and wishes him further success in his work.