



TMS 2011

140th Annual Meeting & Exhibition

February 27 to March 3, 2011

San Diego Convention Center • San Diego, California USA

Hall-Hérout 125th Anniversary Celebration

TMS Aluminum Plenary Session

Monday, February 28, 8:30 a.m. to 12:30 p.m.

Claude Vanvoren, Rio Tinto Alcan, France

8:30 a.m. Topic: "Paul Héroult: The Early Days of the European Aluminium Industry"

This lecture will reflect on the adventurous early days of Paul Héroult, a true entrepreneur and the co-inventor of the aluminium electrolytic process. It will illustrate how the discovery gave birth to an industry, which has relentlessly pursued innovation and facilitated access to a material that has evolved from semi-precious to commodity status in less than 125 years.

Gary Tarcy, Alcoa Inc, USA

9:05 a.m. Topic: "Charles Martin Hall and Warren Haupin: Over 100 Years of Technical Innovation"

Two scientists at Alcoa stand above all others: Charles Martin Hall, one of the co-inventors of the electrolysis process that is still used today, and Warren Haupin, one of the essential people to increase the understanding of the process that has led to a multitude of incremental improvements over the last 60 years. The lecture will discuss the contributions and some anecdotal information about both of these scientists.

Barry Welch, University of New South Wales-Australia; Welbank Consulting, New Zealand

9:40 a.m. Topic: "The Rise and Fall of the Knowledge Base for Aluminum Smelting – The Last 50 Years"

The Symposium on Aluminum organized by TMS in 1962 was the first to assemble some of the academic understanding and industrial issues associated with aluminum smelting. The impact of some of the "characters" who became leaders in the early 1960s, together with their contributions, will be traced and highlighted during this presentation. The decline that started following this change in emphasis in the second half of the 1980s through today will also be discussed.

Nolan Richards, Richards & Associates, USA

10:30 a.m. Topic: "The Early Years of Light Metals – TMS"

This presentation explores the first eight or nine TMS light metals symposia and how their cutting edge themes influenced the electrolytic production of aluminum and inspired competitive research. With improved funding, future technologists will be attracted to the industry to nurture the "centers of excellence" for research in the Hall-Héroult Process, novel processes and advanced materials.

Peter Polyakov, Professor Emeritus, Siberian Federal University, Russia and contributions by Victor Mann, Russian Aluminium Company (RUSAL)

11:05 a.m. Topic: "The Russian Aluminum Industry: Contributions of Abramov, Belyaev, and Malinovsky"

A chronological history of the Russian aluminum industry will be examined starting with investigations by professors Fedotyeff and Pushin prior to the early stage research in 1932. The discussion will culminate with a review of current research regarding the Soderberg technology improvement, PB-cells developments, and aluminum laboratory studies.

Erik Keul, retired and consultant to ALSTOM, Norway

11:35 a.m. Topic: "Brief Overview of Environmental Control within the Primary Aluminum Industry"

The Aluminum Industry has come a long way with respect to environmental control during the 125 years with the Hall-Héroult process. The initial smelters were small and any adverse effects were either of no concern or were not detected. As the smelters grew in size improved potroom ventilation was the major method for reducing exposure of the workers to fumes as well as for protection of equipment.

Mark Taylor, director, Light Metals Research Centre, University of Auckland, New Zealand

12:05 p.m. Topic: "The Future for Aluminum Smelting"

This presentation will focus on specific energy consumption across the aluminum smelting industry including the perceived barrier in reducing it and the enabling factors. Taylor will also explore the possibility that aluminum smelters could become an integral part of the network for power supply in the community and across communities and countries.

The Aluminum Plenary session is sponsored by



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