

# AEC Extrusion Excellence Workshop Presented in Montréal

The Canadian International Aluminium Conference (CIAC), with the Aluminum Extruders Council (AEC), will co-sponsor the AEC workshop “Extrusion Excellence: Applied Fundamentals for Aluminum Extruders,” during the CIAC and its companion conferences during the week of October 21-25, 2013 in Montréal, Canada. The workshop’s presentation during the CIAC is the only time in 2013 that this comprehensive tutorial on aluminum extrusion fundamentals is scheduled to take place.

The intensive short course focuses on the fundamentals of the aluminum extrusion process, stressing analytical skills for process and product optimization. Both theory and practical concepts of extrusion are discussed for products that use aluminum profiles. The workshop will be presented by renowned aluminum extrusion expert Dr. Wojciech Z. Misiolek (pictured), director of the Institute for Metal Forming at Lehigh University in Bethlehem, PA. Misiolek, the Loewy professor of Materials Forming and Processing, conducts extensive interdisciplinary research in materials processing and process engineering, focusing on metal forming with a special emphasis on extrusion, powder and machining processes, and applications for structural and bio-materials.

Basics of aluminum alloy composition, mechanical properties, standards, quench sensitivity, natural and artificial aging practices, and temps are examined. Aluminum billet metallurgy is presented, including microstructure development from casting through homogenization, to establish a broad understanding of mechanical property requirements needed for product manufacture. Extrudability factors affecting output, quality, and scrap are reviewed, and metal flow within the container and die and their impact on product quality is analyzed.



Dr. Wojciech Z. Misiolek

Extrusion dies are discussed in the workshop, as relates to overall die cost, die design basics, and proper handling techniques, including topics such as die nitriding and tooling cost relative to productivity. Quality assurance techniques are addressed, pertaining to analysis and testing of microstructures covering elongation, yield strength, and tensile strength. Misiolek said, “The workshop is designed to improve understanding of the capabilities of the extrusion process and aluminum alloys.”

Key trends in aluminum extrusion technology will be highlighted. Misiolek notes, “In my opinion, the most important of these trends is improved understanding of the precipitation hardening phases in 6xxx aluminum alloys, which allows for production of higher-strength Al-Mg-Si alloys. This is a very significant finding, which can develop new applications of many engineered aluminum profiles.” The course is designed for anyone involved in aluminum extrusion, whether one is new to the industry or experienced in extrusion production, including: extrusion, die shop, and maintenance managers; process engineers; production supervisors; lead extrusion operators; superintendents; and engineering staff. Those working in all areas of extrusion will broaden their knowledge of engineering fundamentals, metallurgy, and alloys as they pertain to the extrusion process, thus enhancing safety, productivity, and quality, as well as achieving extrusion excellence.

The AEC Extrusion Excellence Workshop will be held on Tuesday, October 22, and Thursday, October 24, in conjunction with the CIAC and INALCO 2013 at the Palais des congrès de Montréal. Workshop spaces are limited and early registration is suggested. For more information or to register online, visit [www.ciacmontreal.com](http://www.ciacmontreal.com) or [www.inalco2013.com](http://www.inalco2013.com).