

Report on 2008 AIST John F. Elliott Lecture

Gordon A. Irons, Dofasco Professor of Ferrous Metallurgy and Director, Steel Research Centre, McMaster University, Hamilton, Ont., Canada



The 2008 AIST John F. Elliott lecturer was Gordon A. Irons, Dofasco Professor of Ferrous Metallurgy and Director of the Steel Research Centre at McMaster University, Hamilton, Ont., Canada. The title of his lecture was, “The Role of Process Metallurgy in Sustainability,” with the following synopsis:

“Sustainability has attracted a great deal of attention in the popular press recently, but the engineering aspects of the issue are seldom discussed, despite the fact that engineers are charged with implementing the solutions. Materials engineering has a large role in this issue in the production and use of metals and other materials. In this lecture, some sustainability metrics, such as materials intensity, energy intensity, and global warming potential, were reviewed. The sustainability problems facing several materials industries was examined. Many of these problems are directly related to process metallurgy, so that solutions can also be found in this field. Some specific examples of steps being taken to improve the sustainability of the steel and aluminum industry were presented. Finally, it was shown that the discipline of process metallurgy has much to contribute to sustainability issues, and that important and satisfying careers can be made in this field.”

The lecture was delivered at the following universities:

- University of Alberta, Edmonton, Alta., Canada, Nov. 13, 2008
- University of British Columbia, Vancouver, B.C., Canada, Nov. 14, 2008
- Colorado School of Mines, Golden, Colo., Nov. 19, 2008
- Missouri University of Science & Technology, Rolla, Mo., Nov. 20, 2008
- Swinburne University of Technology, Melbourne, Australia, March 3, 2009
- McMaster University, Hamilton, Ont., Canada, March 25, 2009
- University of Toronto, Toronto, Ont., Canada, March 26, 2009
- McGill University, Montreal, Que., Canada, April 8, 2009

At all the universities, Mr. Irons was given a warm reception, and the lecture attracted a vast audience. The lecture was aimed at undergraduate engineering students, but a number of graduate students and faculty members also attended. Information on the energy intensity (total energy requirements per tonne) for various metals was presented, and how this is closely related to global warming potential. The message to the students was that the subjects they are studying — such as thermodynamics, transport phenomena and process analysis — are central to these issues. Much of this information was new to the students, so there was a lively question-and-answer session after each lecture. This year's AIST John F. Elliott Lecture helped many students become engaged with the issues of sustainability.

