



## Peter C. Hayes

Peter Hayes is well known to metallurgists internationally as a prolific researcher, teacher and innovator. His University teaching career spans many decades and his work has helped to guide the career of hundreds of postgraduate students from all over the world. He is a firm believer that the way to research excellence is through critical analysis, identifying and understanding fundamental processes and the application of scientific principles. In 2001, Peter established the Pyrometallurgy Innovation Centre (PYROSEARCH) to provide research services, consulting and test work in smelting, refining, new materials and recycling, creating a cutting-edge research capability that continues to this day. He is passionate in his support of metallurgical engineering, believing that the technology is more important than it has ever been to supply the raw materials needed by our technologically-focused society.

In January 1976, Peter arrived at UQ to take a position lecturing in ceramic materials, having completed a Bachelor of Science (Hons) and research Masters in Metallurgy at Newcastle on Tyne, UK, a PhD at the University of Strathclyde in Scotland and a Postdoctoral Fellowship at the British Steel Corporation. He has remained in the then Department of Mining and Metallurgical Engineering, teaching and conducting research in metallurgy and materials science. He has been proactive in the development and growth of the metallurgical engineering program at UQ since the mid 1980s. He was appointed a full professor in 2001 and Program Leader in Metallurgical Engineering in 2004, a position he holds to this day. In the early 2000s Peter saw an opportunity to build capability in hydrometallurgy in the Department, a strategic decision that underpins the continuing success of UQ's program. Over those years Peter has taught many hundreds of Australia's metallurgists and mineral processing engineers, and supervised dozens of Masters and PhD graduates.

Although he started at UQ with a focus on materials science, it is in the field of pyrometallurgy where Peter's name is best known. His research focuses on the high temperature processing of minerals and materials, with particular application to the pyrometallurgical production and refining of metals. He has approaching 400 research publications in international journals, and international conferences and has contributed to many textbooks and journals.

For many metallurgy graduates Peter is best known as the author of the undergraduate student textbook Process Selection in Extractive Metallurgy, later titled Process Principles in Minerals and Materials Production. Now in its third edition, the text has sold over 3000 copies worldwide, and is still used in undergraduate teaching in metallurgy programs internationally. The book focuses strongly on the fundamental scientific principles underpinning the physical and chemical processing of minerals, and the

way that mineral processing, hydro-, pyro- and electro-metallurgical processing complement one another in efficient metal production and recycling.

The quality of Peter's research work has been recognised by The American Institute of Mining and Metallurgical Engineering (TMS), Metallurgical Society of Canadian Institute of Mining, Metallurgy and Petroleum (CIM) and Institution of Materials, Minerals and Mining (London) (IOM3) with the following awards:

- 2004 - The Metallurgical Society of the American Institute of Mining and Metallurgical Engineering (TMS) Science Award Extraction and Processing Division
- 2008 - Billiton Gold Medal Award – Best Publication in Transactions IMM-C
- 2009 - Metallurgical Society of CIM, Non-Ferrous Pyrometallurgy Best Paper Award in Canadian Metallurgical Quarterly
- 2010 - TMS Science Award Extraction & Processing Division.
- 2012 - TMS Science Award Extraction & Processing Division,
- 2018 - TMS Science Award Extraction & Processing Division
- 2018 - Best Paper Award TMS Extraction & Processing Division.
- 2018 - Peter Hayes Symposium on Pyrometallurgical Processing at Extraction2018, TMS/CIM, Ottawa, Canada
- 2019 - Billiton Gold Medal Award - Best Publication in Transactions IMM-C.

Peter has been a longstanding member of Australasian Institute of Mining and Metallurgy (AusIMM), and The Minerals, Metals & Materials Society (TMS).