

Materials Science Short Course:

Fracture Control and Structural Integrity

Presenter's short biographies

Presenters: Prof. F. Cheng – University of Calgary, Dr. Bill Tyson – CANMET, Dr. M. Elboudjaini – CANMET, Dr. Priti Wanjara – NRC

Dr. Bill Tyson graduated from Engineering Physics at the University of Toronto in 1961 and completed his doctorate at the University of Cambridge in Metallurgy in 1965. For the last 30 years he has been at CANMET – Metals Technology Laboratories in Ottawa, where he is the leader of the materials performance group and previously was the leader of the joining and structural integrity group. He also worked as an academic in the Physics department at Trent University during its early years from 1967 to 1973. He served as the Canadian editor for *Acta Metallurgica* (now *Acta Materialia*) from 1972 to 1999. He is the author of over 150 papers on mechanical properties of materials, concentrating on steels. He is part of the national review team on integrity issues for CANDU pressure tubes. He works for the Canadian Standards Association as the chair of the materials working group on structural steels (S473) and is also very active in the pipeline materials technical subcommittee. Dr. Tyson is a Fellow of ASM International, has received the Dofasco Award for Materials Engineering from CIM, and was awarded the Canadian Metal Physics Medal at the Canadian Metal Physics Conference in 1999.

Dr. Priti Wanjara graduated from McGill University with a Bachelor's degree (1993) and Ph.D. degree (1999) in Metallurgical and Materials Engineering. In 1997, she started her professional career in the field of physical metallurgy and worked with Ivaco Rolling Mills on process development of dual phase steels. In 2002, she joined the Aerospace Manufacturing Technology Center (AMTC), one of five laboratories at the National Research Council of Canada's Institute for Aerospace Research, as an Assistant Research Officer. At AMTC, her research work has focussed on the application of novel joining and forming technologies for the manufacture of advanced aerospace materials. She has advanced rapidly with NRC Aerospace becoming an Associate Research Officer in 2006 and Group Leader of the Metallic Products Manufacturing (MPM) Group of AMTC in 2008. As Group Leader, she manages the multi-disciplinary activities of various research and technical staff, whilst aiming to develop scientific collaborations and/or business partnerships with industry, academia, and other government organizations to promote emerging technologies for manufacturing applications in different industrial sectors (aerospace, automotive, renewable energy). She is the author or co-author of over 80 technical articles and 45 NRC reports. She is the recipient of the Metallurgical Society of CIM Best Paper Award (2007), the ASM Canada Council Brian Ives Lectureship (2008) and the Metallurgical Society of CIM Brimacombe Award (2009).

Prof. Frank Cheng earned a Ph.D in Materials Engineering at the University of Alberta in 2000. After two years as an Industrial Research Fellow in the NOVA Research and Technology Center and three years as a Research Scientist in the Centre for Nuclear Energy Research at the University of New Brunswick, Frank joined the University of Calgary in 2005 where he is an Associate Professor and Canada Research Chair in Pipeline Engineering in the Department of Mechanical and Manufacturing Engineering. He has worked on a wide spectrum of corrosion and pipeline engineering areas, including pipeline stress corrosion cracking, hydrogen-induced cracking, internal corrosion, external corrosion, coating failure and effect analysis, CO₂ corrosion, erosion-corrosion, passivity and pitting corrosion, electrolytic deposition and

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electrochemistry. He has published over 90 journal articles in the general areas of corrosion, electrochemistry and materials science. Frank is serving as the Honorary Theme Editor in Pipeline Engineering for the Encyclopaedia of Life Support Systems (EOLSS) of UNESCO.

Dr. Mimoun Elboujdaini received a mechanical engineering degree and Diplôme d'Étude Approfondie (DEA) from Université de Technologie of Compiègne, France, and M.Sc. degree in physical metallurgy from École Polytechnique, Montreal, and a Ph.D. in physical metallurgy and corrosion from the Université Laval, Quebec. He has been a Senior Research Scientist with the Materials Technology Laboratory/CANMET, Department of Natural Resources Canada since 1998. He has gained extensive research experience in engineering materials, and their properties and performance in various service environments. He has led projects dealing mainly with pipeline, oil and gas / petrochemical industries, including stress-corrosion cracking (SCC), hydrogen-induced cracking (HIC) in H₂S environment, hydrogen embrittlement, fatigue and corrosion fatigue.