



ASM International



The Manitoba Chapter

BULLETIN

Thursday, October 15, 2009

Canada Council M. Brian Ives Lecture

Joining Trends for Manufacturing and Repair of Advanced Materials

Priti Wanjara, Ph.D.

The integration of advanced joining techniques for the manufacturing and repair of aerospace materials is driven by the critical need to improve the buy-to-fly ratio and reduce the waste and life cycle costs of aeroengine components. For the key aerospace materials based on titanium and nickel alloys, the complexity in their compositional and phase constituents has necessitated the consideration of different enabling technologies for manufacturing. To support the ever-increasing performance requirements of aeroengines, the aim of research and development efforts has deliberated on a thorough and precise understanding of the inter-relationships between materials process manufacturing, microstructure and mechanical properties. To this end, this presentation will describe various emerging solid- and liquid-state joining technologies, such as friction stir and linear friction welding and laser and electron beam welding. The research and development work on the application of these technologies for manufacturing and repair of advanced aerospace materials will be discussed and introduce unconventional ideas for design demands.

Ms. 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 (NRC Aerospace), as an Assistant Research Officer.

Ms. Priti Wanjara full biography can be found on page 4.

Location: Assiniboine Gordon Inn on the Park, 1975 Portage Avenue, Winnipeg

Times: Registration/Reception 6:15 p.m., Dinner 6:45 p.m., Presentation 8:00 p.m.

Cost: Members \$15, Non-members \$20, Students \$10

Dinner Reservations Required. Please phone Victor Butts at 632-3985 or send him an e-mail to vbutts@rrc.mb.ca by noon Tuesday, October 13, with your name and the number of people who will be attending. Friends and colleagues are welcome. Map of the location can be found on page 4.

After-dinner attendance welcomed (no charge).

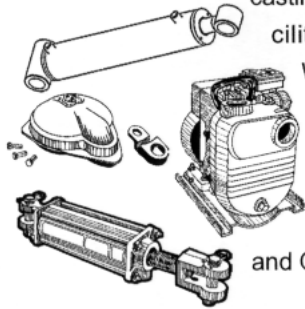


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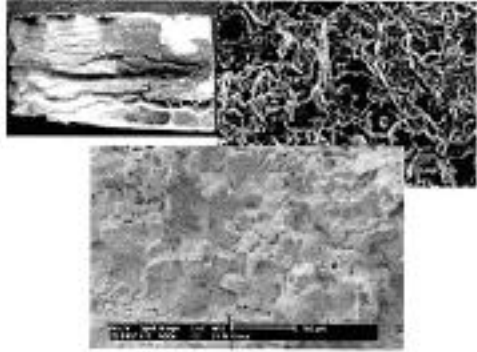
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Priti Wanjara , Ph.D.

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 (NRC Aerospace), as an Assistant Research Officer. At AMTC, her research work has focused on the application of novel joining and forming technologies for the manufacture of advanced aerospace materials. She has advanced rapidly within NRC Aerospace becoming an Associate Research Officer in 2006 and Interim 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). Dr. Wanjara is the author or co-author of over 80 technical articles and 40 NRC reports. As a member of ASM International since 1993, she has actively participated for many years in the Montreal Chapter, serving on the Awards Nomination, Social and Membership Committees, as well as serving as Vice Chairman. Currently she is the Chairman of the Montreal Chapter and ASM Canada Council Chapter Liaison. 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).

Location of Canada Council Lecture Event:

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