



THE UNIVERSITY OF
MELBOURNE

Mechanical Engineering

SEMINAR SERIES 2011

Prof Graham 'Gus' Nathan

Director, Centre for Energy Technology
The University of Adelaide

3pm Wednesday 23rd February 2011

Mechanical Engineering Lecture Theatre
Level 3, Building 170
Mechanical Engineering
Grattan St, Parkville

Thermal Energy Hybrids - Opportunities and Challenges.

MORE INFORMATION

For more Mechanical Engineering seminar
information contact:

Professor Ivan Marusic
Department of Mechanical Engineering
E: imarusic@unimelb.edu.au

Abstract:

Ongoing investment in renewable energy technologies is reducing their cost and increasing their penetration into energy supply systems. Nevertheless, their higher cost remains a significant barrier to their broader implementation. One approach to facilitate lower cost for renewable energy is hybrid technologies, which combine renewable energy with conventional energy sources. The talk will describe a range of hybrid technologies and will also present some recent work by the Centre for Energy Technology in developing novel hybrid systems. This includes the use of laser diagnostics to assess the impact of concentrated radiation on a flame. Finally it will discuss some ongoing technical challenges in this rapidly evolving sector.

Brief Biography:

Professor Nathan was appointed founding Director of The University of Adelaide's Centre for Energy Technology in 2009 to coordinate and grow its research in the development of clean energy technologies and know-how in partnership with industry and government agencies. He specialises in the integration of energy technologies and is experienced in thermal sciences and their application in energy systems spanning solar, geothermal and the combustion of fossil and bio-fuels. He was principal leader of the Chief Design Team for the award winning fuel and combustion system for the Sydney Olympic Relay Torch and was co-inventor of the patented combustor that was subsequently also used in the torch and Stadium flame for the Athens Games. He has jointly led the development of low NO_x combustion technology in rotary cement kilns and a technology to enhance the capture of ultra-fine particles and mercury. He has also worked widely with industries including power generation, cement, lime, steel, glass and aluminum. These technology developments are underpinned by the development and application of laser diagnostic methods to complex turbulent reacting flows.