

Monash e-Research Centre



Tuesday 22 November 2011
Monash-Technion MURPA Seminar

Advanced Composite Aerostructures Research at Monash University
Presented by Prof Brian Falzon
(Department of Mechanical and Aerospace Engineering,
Monash University)

Time: 6.30 - 7.30pm

Location: Room 135, Bldg 26, Clayton Campus

Visit: <https://messagelab.monash.edu.au/MURPA/TechnionMURPA>

Abstract:

The latest generation of wide-bodied passenger aircraft makes extensive use of carbon-fibre composite material in the primary structure. While this represents a step-change in the advancement of airframe technology, the use of carbon fibre material still requires extensive experimental validation during development and certification. The design philosophy of composite aerostructures is also a rather conservative one which is masked by the material's superior specific strength and stiffness over traditional aluminium alloys. This cautious approach is partly based on the difficulty in predicting the initiation and propagation of damage in a composite structure and the lack of in-service experience. Industry is also aiming to reduce development costs and timescales and the increased use of simulation at all stages of an airframe's life cycle can make a significant contribution towards achieving these goals.

The Advanced Aerostructures Research Group at Monash University is involved in a number of research projects looking at different aspects of virtual testing and design of composite aerostructures. This presentation will give a brief overview of some of these activities.

Biography:

http://www.monash.edu.au/research/profiles/profile.html?sid=17252&pid=4639#summary_hidden

Professor Brian G. Falzon is the Chair of Aerospace Engineering, Director of Research and Deputy Head of the Department of Mechanical and Aerospace Engineering at Monash University.

He obtained his Bachelor of Science in Physics and Pure Mathematics, Bachelor of Engineering with first class honours and PhD in Aeronautical Engineering from the University of Sydney. He spent twelve years at Imperial College London where he was involved in government and industry-funded research on advanced composite aerostructures. In 2008 Professor Falzon took up the Chair of Aerospace Engineering at Monash University.

His research interests include the development of robust finite-element algorithms for predicting the response of highly non-linear structures, fracture mechanics and damage in composites, structural optimisation, meshless methods, the dynamic response of composite structures to impact loading, structural testing, the development of virtual testing environments and the design and analysis of medical implants. T