

ISSUES IN DEVELOPING AND APPLYING PROCESS MODELS TO AID IN COMPOSITES MANUFACTURING

Keynote lecture given on Day 1 of FPCM-9, Tuesday July 8th 2008, 8 h 30 – 9 h 15

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Over the last 20 years, my academic colleagues and I have been working on modelling aspects of the manufacturing of composite structures. By luck and happenstance, we initiated good industrial interactions early in our endeavours and this has led to a continuing effort to balance academic curiosity, rigour and focus with industrial relevance, timeliness, and value.

Early on we found that the usual technology transfer approach of developing something to an adequate level of maturity and then handing it off to an independent third party was not feasible as our knowledge was and is, to put it mildly, imperfect. We soon realized that a critical part of our development of understanding required an intimate and rather painful exposure to the applications. The last ten years of work reflect our efforts to achieve a balance between academia and applications.

This talk uses case studies ranging from simple to complex structures to review lessons learned and offer suggestions for the effective development of scientifically sound, but application friendly, models. This is timely, as the recent step increase in composites usage is creating even more opportunities for the use of appropriate models.