

# Fabrication, testing and evaluation of composites

6- 7 OF APRIL 2016, NORTHWEST COMPOSITES CENTRE, THE UNIVERSITY OF MANCHESTER

NWCC is proud to announce a two day course - Composite Materials Testing and Evaluation. The course will be taught by the NWCC team who have combined expertise in all aspects of composites manufacture, sample preparation, testing, non-destructive testing and real time SHM. Our portfolio covers a vast range of aspects in composite materials and structures.

## Programme Outline

### Day 1 - Manufacturing of Composite parts

09:00 Registration / Welcome

09:05 Composite Materials - An Overview  
by Dr Edward McCarthy

#### 10:45 Coffee Break

11:00 High-performance Textiles by Professor Prasad Potluri Research Director for the NWCC

11:45 Characterization of Thermosetting Resins by Dr Arthur Wilkinson

#### 12:30 Buffet Lunch

13:00 *Design and manufacture of extensively instrumented composite test-scale rotor blades* by Dr Samuel Furtado

13:30 Manufacturing of composite Laminates:

- Resin Transfer Moulding (RTM)*
- Autoclave*
- Tufting and woven manufacturing of structural T-Shape beam*
- Resin infusion of complex parts*
- Weaving, Filament Winding, Braiding*

#### Coffee Break

16:30 The challenges and opportunities in high-volume manufacturing of automotive composites by Dr Clara Frias

17:00 END Day 1

### Day 2 - Testing & Evaluation of Composites

09:00 Coffee/Arrival

09:15 Mechanical Testing of composites by Bill Godwin, Technical Manager at NCCEF

10:00 Non-Destructive Testing and Structural Health Monitoring (SHM) of Composite Structures by Dr Matthieu Gresil

#### 10:45 Coffee Break

11:00 'Lightweighting luxury: the challenges of introducing composites in the automotive industry' by Rob Crow Materials Innovation Manager and Dr Dee Harris Materials Engineer, at Jaguar Land Rover

#### 12:00 Buffet Lunch

13:45 Destructive Inspection & Non-Destructive Techniques with Practical Demonstrations:

- Mechanical Testing; Static & fatigue*
- Laser Extensometer*
- Ultrasound*
- Thermography*

#### 15:15 Coffee Break

15:30 Mechanical Testing - Post Test Analysis

*Failure Mechanisms*

15:50 Mechanical simulation - predicting failure by Dr David Arregui-Mena

16:35 Question & Answer

## Registration

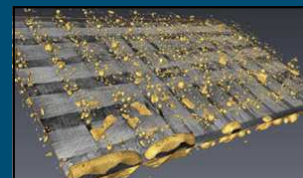
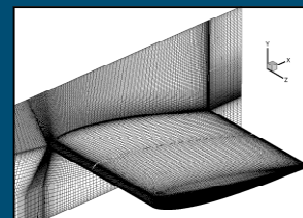
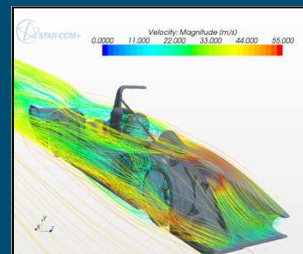
Registration fee:

- \* Two day event £ 500 (ex. VAT) per delegate;
- \* One day event £300 (ex. VAT) per delegate;

This rate includes tuition, lecture notes, lunch and refreshments. Find more information here:

<http://www.nccef.manchester.ac.uk/services/training>.

Please book your place through Claire Taylor Email: [claire.taylor@manchester.ac.uk](mailto:claire.taylor@manchester.ac.uk), phone: +44 (0) 161 306 8592.



**Contact:** Dr Clara Frias  
Research Project Manager  
(or)  
Adam Joesbury  
Knowledge Exchange Fellow in  
Composites

**NWCC**  
The University of Manchester  
79 Sackville Street, James Lighthill Building  
M1 3NJ Manchester

Email: [clara.frias@manchester.ac.uk](mailto:clara.frias@manchester.ac.uk) or  
[adam.joesbury@manchester.ac.uk](mailto:adam.joesbury@manchester.ac.uk)  
Telephone: +44 (0)161 306 4570/4546