

Ben Chappell

EngD Research
Engineer at iCOMAT

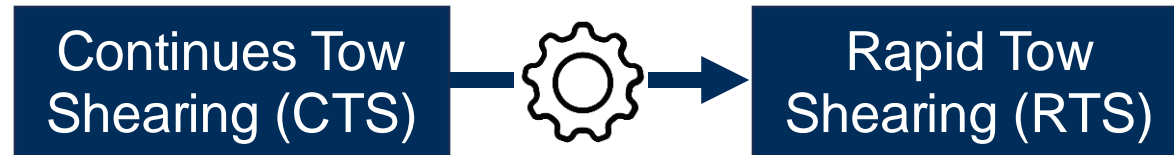
Skills developed during an Engineering Doctorate.

Introduction

Why have I undertaken an EngD?

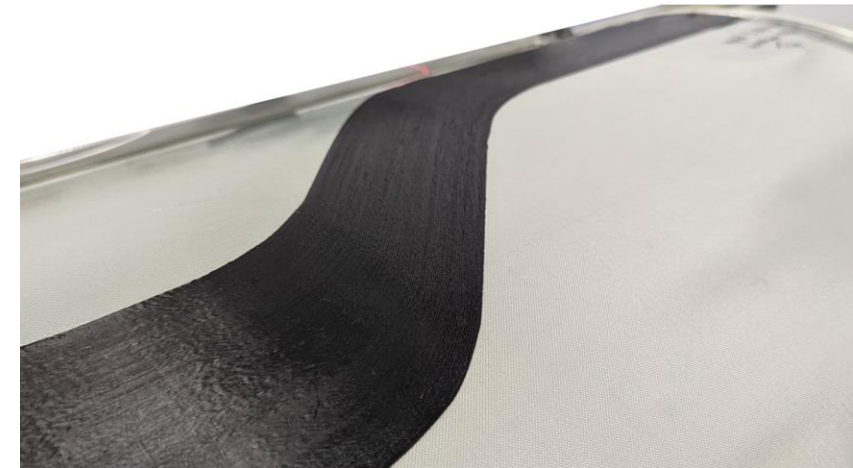
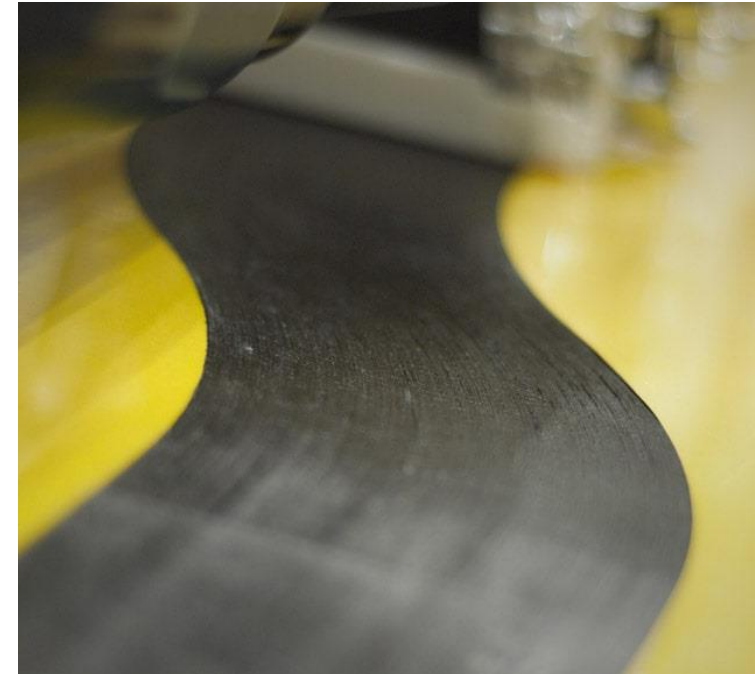
EngD in Composites Manufacture with iCOMAT and UoB iCOMAT

- Start-up company spun out from UoB
- Industrialise the automated fiber steering mechanism



Engineering Doctorate subject

- Aim to developed 3D Rapid Tow Shearing.



Industrial and academic collaboration

Academic taught elements

Composite
Theory

Composite
Simulation

Composite
Manufacture

Commercialisation

Business
strategy

Public
Speaking

Scientific
reasoning

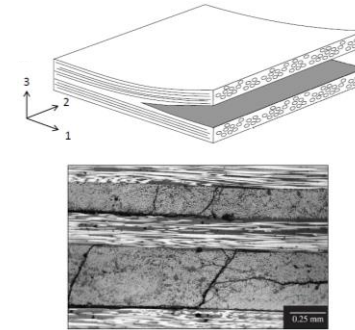
Industrial development at iCOMAT

Communication

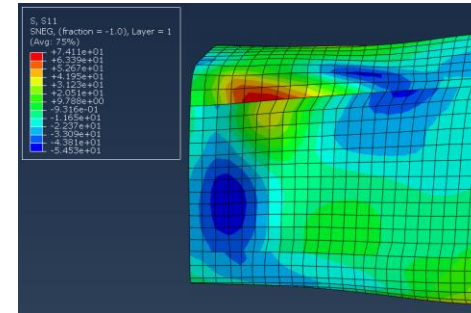
Project
management

Start-up
culture

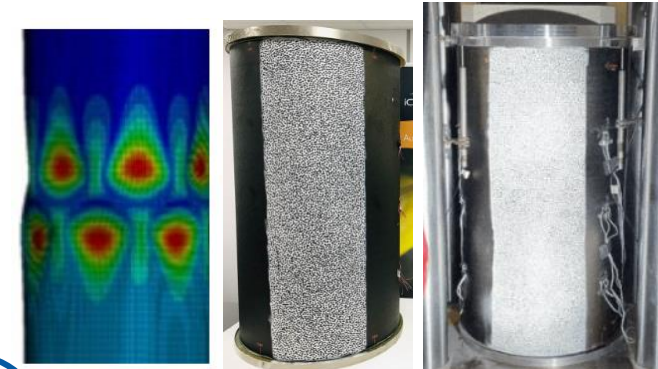
IP protection



Examples of composite interlaminar failure.



Abaqus Composite Propeller hub design and analysis.



European Space Agency fibre steered cylinder buckling test.

Facilitating for the future

What is needed to teach new engineers the skills required to succussed in high tech composites manufacture?

- An industrial based project, exposing candidates to the work environment.
- Accountability of a clearly defined project aim.
- Clear understanding of the value of the research.
- Take risks to win big.

Do we need a culture shift? – Thoughts from a US experience.

Optimistic → Fast project approval & Well funded → Fast development

High optimism → High investment → High Risk

THANK YOU FOR YOUR ATTENTION

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