Phase Segmentation in Uncured Composites Prepregs via Deep Learning

Pedro Galvez Hernandez

Karolina Gaska

James Kratz

13/04/2021

bristol.ac.uk/composites

Bristol Composites
Institute (ACCIS)

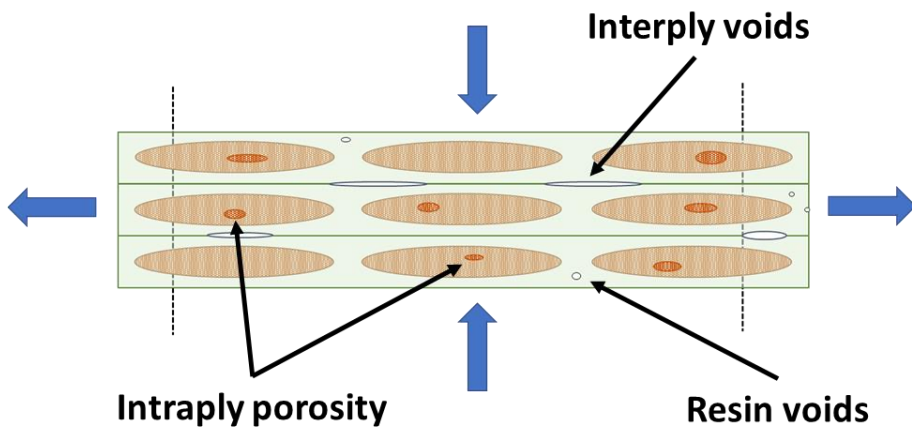Supported by

Composite Manufacturing

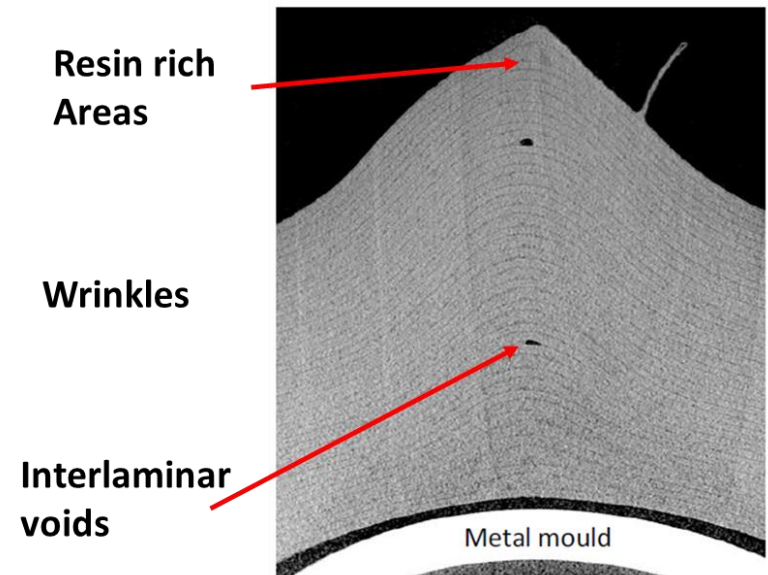| Real World	➡	Defects and Variability

Unsaturated fibre bed and entrapped air
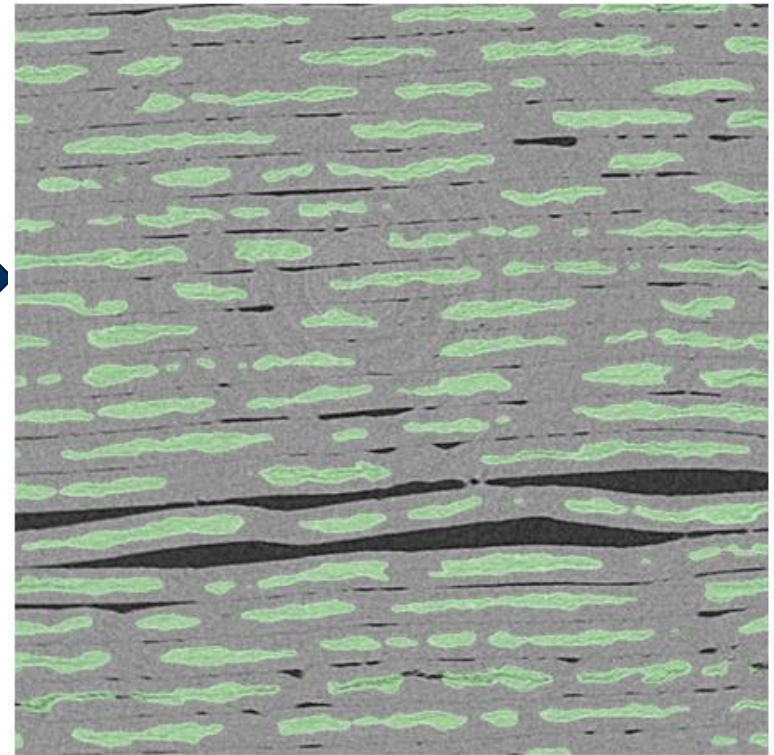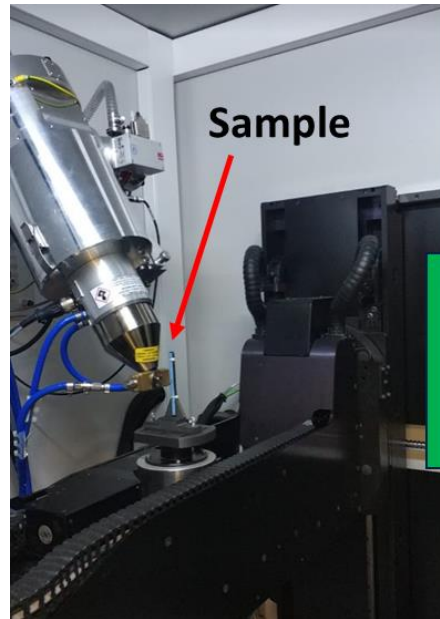

Design constraints (e.g., corners)

Objective

Provide an **accurate quantification** of the different phases in an **uncured prepreg composite**
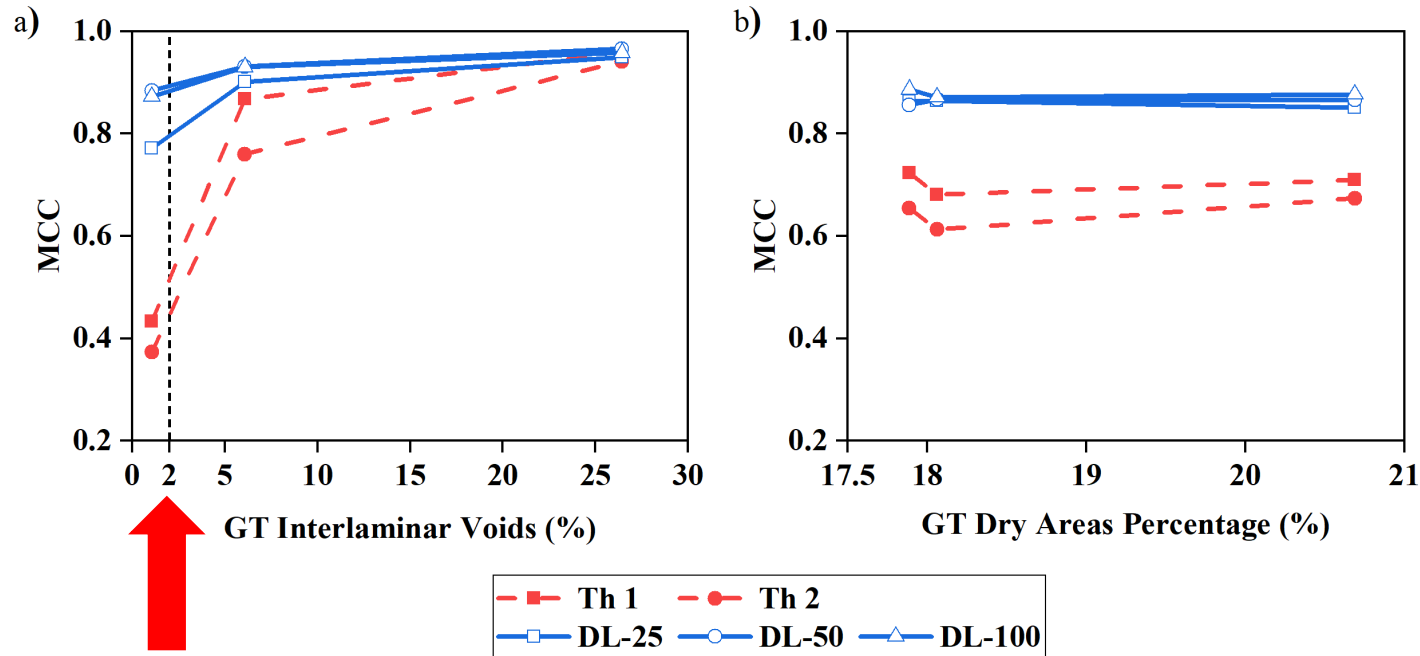
CT Scan

Uncured Sample

University of **BRISTOL**

Bristol Composites Institute (ACCIS)

13/04/20121
Pedro Galvez Hernandez
zz19101@bristol.ac.uk

a c c i s
ADVANCED COMPOSITES COLLABORATION FOR INNOVATION & SCIENCE

Segmentation Performance

Deep Learning **outperforms** Thresholding

Deep Learning successfully segments volumes with **low porosity**

University of **BRISTOL**

Bristol Composites Institute (ACCIS)

13/04/20121
Pedro Galvez Hernandez
zz19101@bristol.ac.uk

ADVANCED COMPOSITES COLLABORATION FOR INNOVATION & SCIENCE