

# Fibre Waviness: Drivers and Mechanisms

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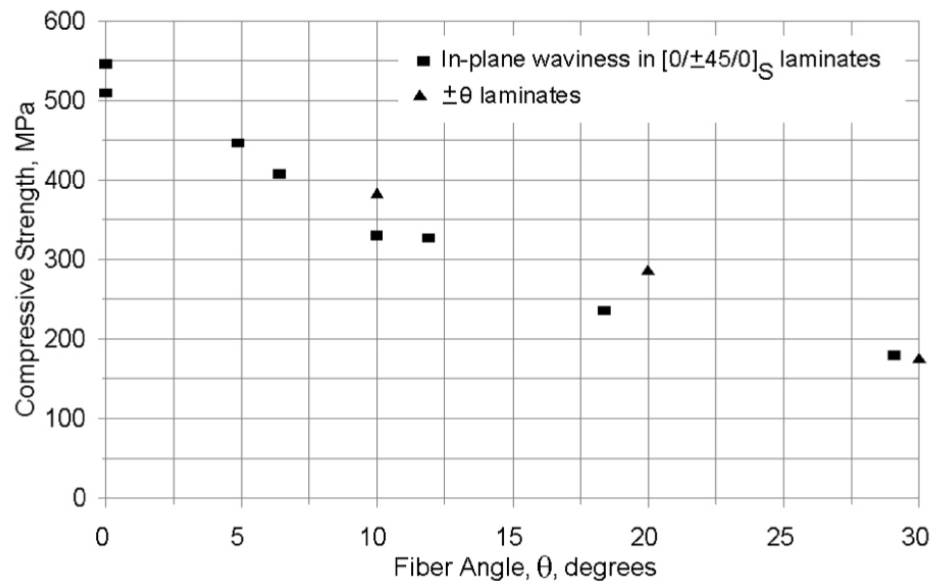
# Outline

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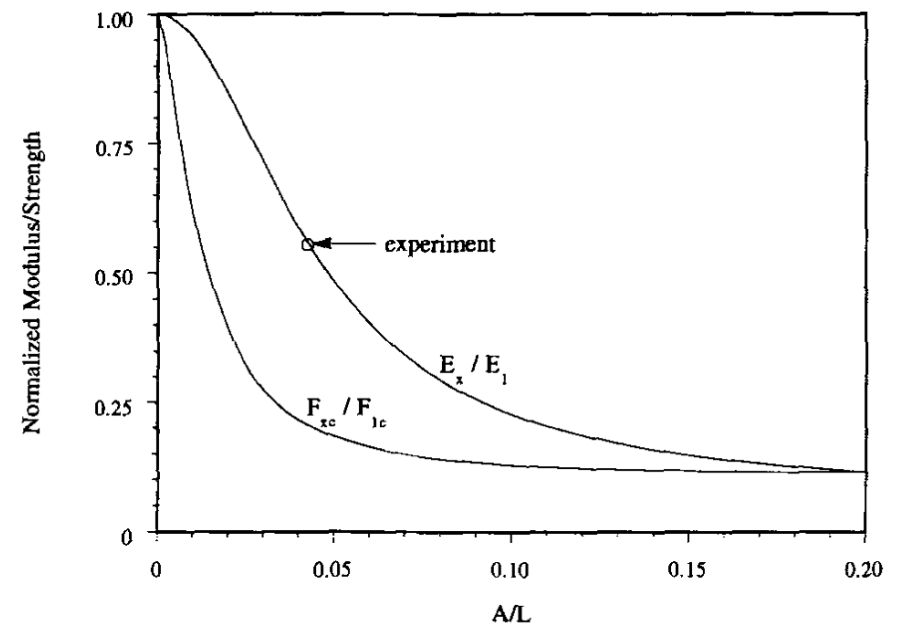
- Why study fibre waviness?
- Drivers and Mechanisms
  - Resin volume changes
  - Tool-part interaction
  - Laminate Design
  - Tool geometry and drape
- Future Work

# Why study fibre waviness?

- Significant reduction in compressive strength
- Detrimental effect on fatigue response of a composite

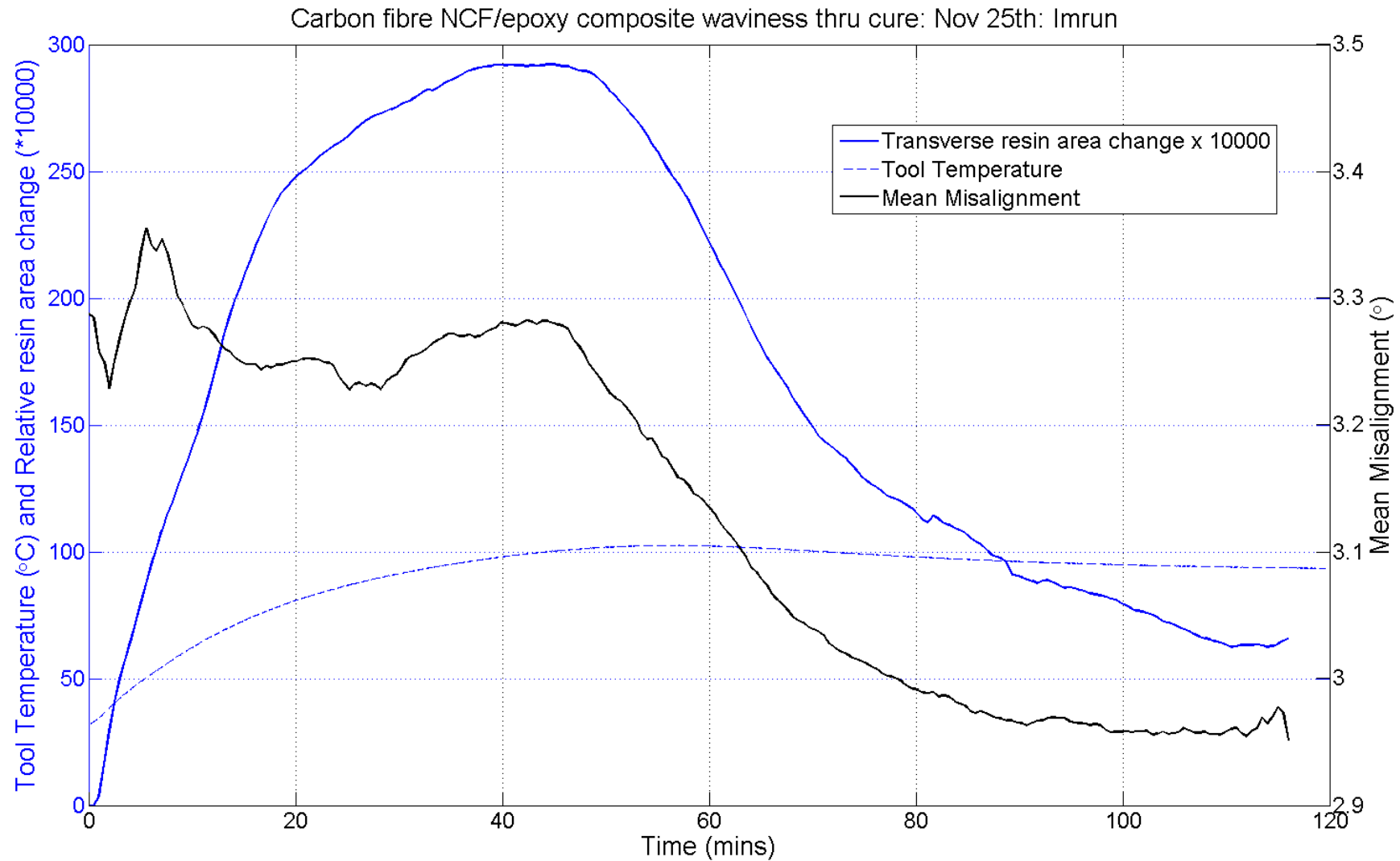


Mandell 2003

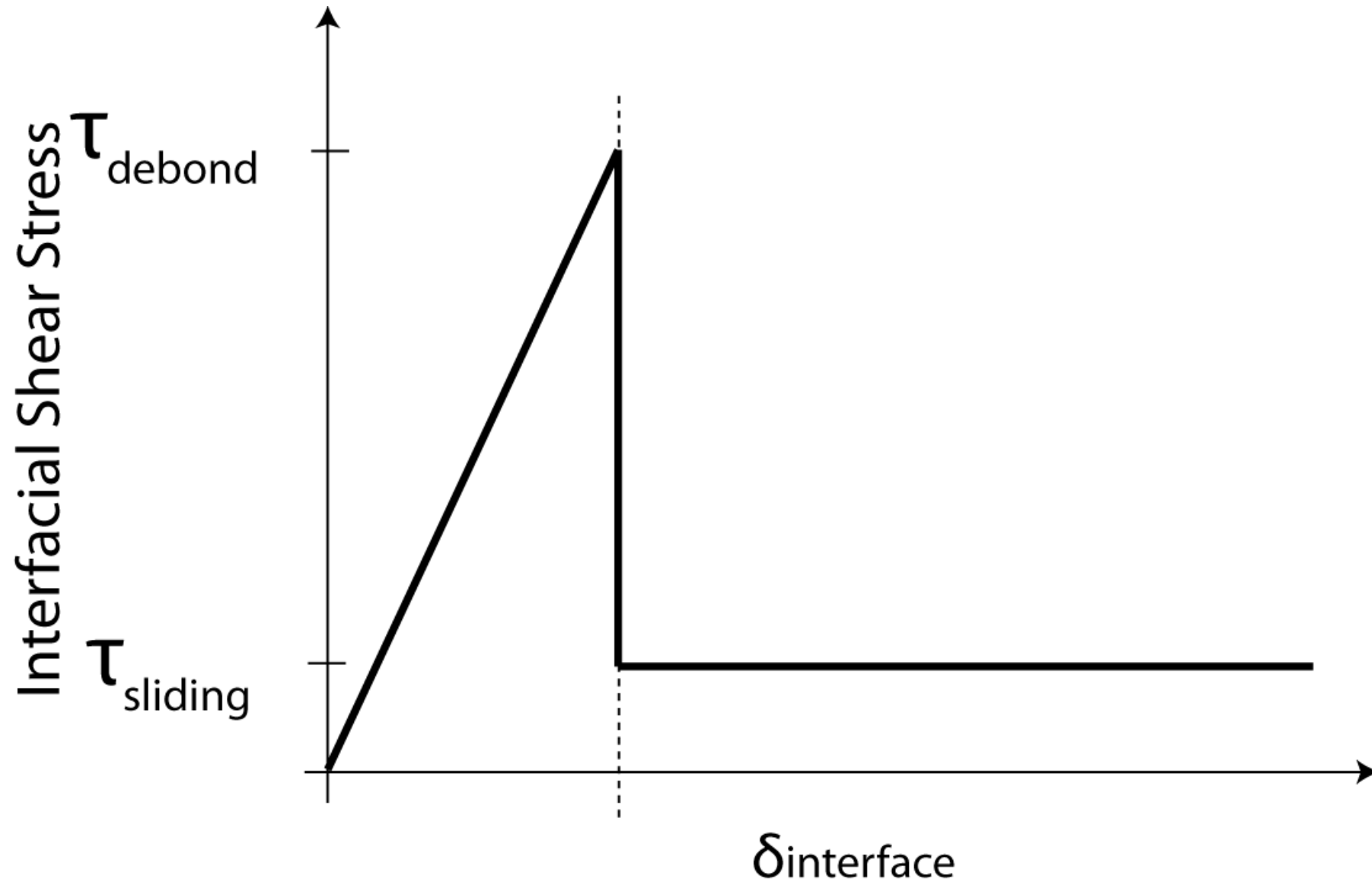


Hsiao 1996

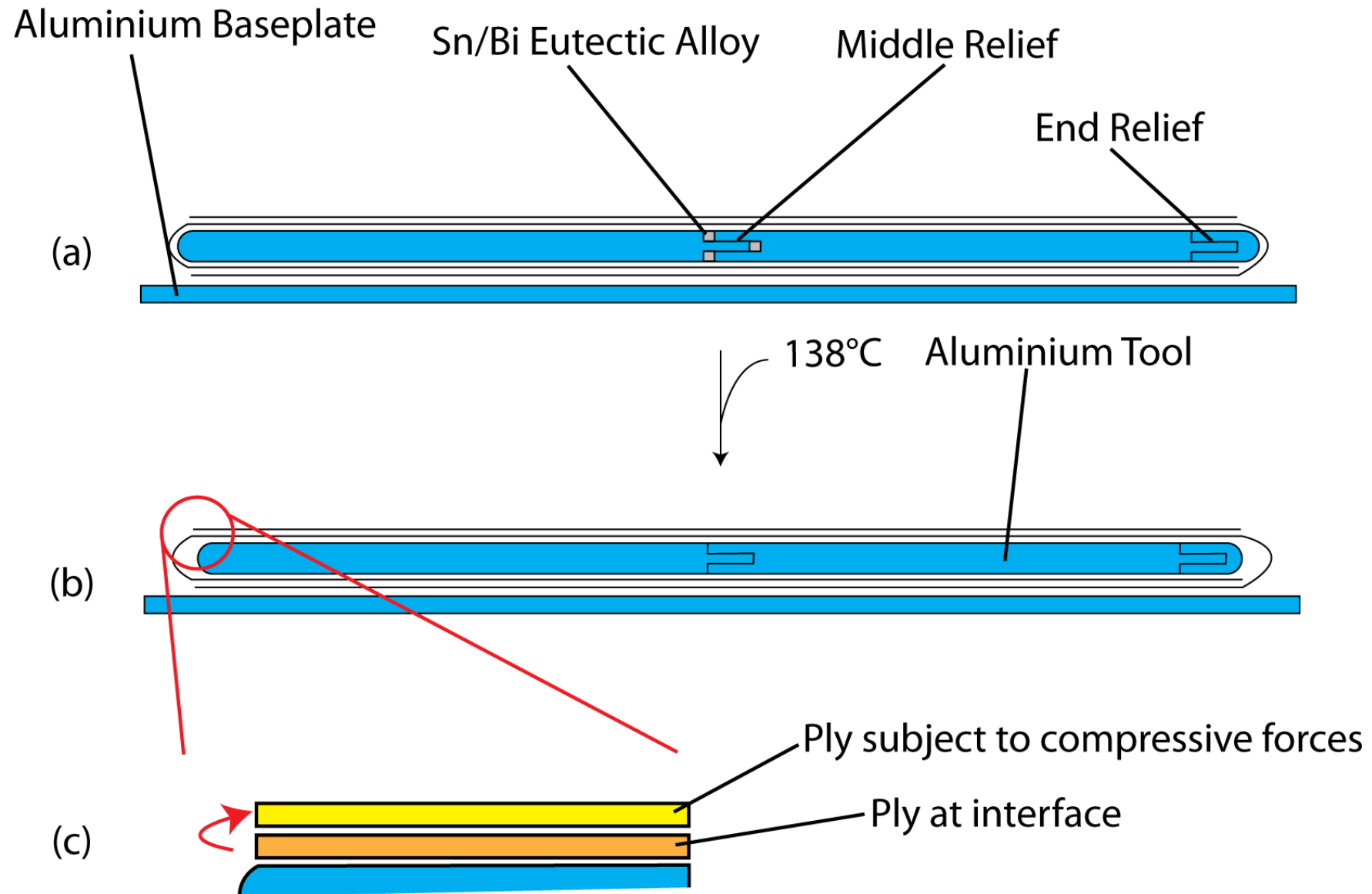
# Effects of resin volume change



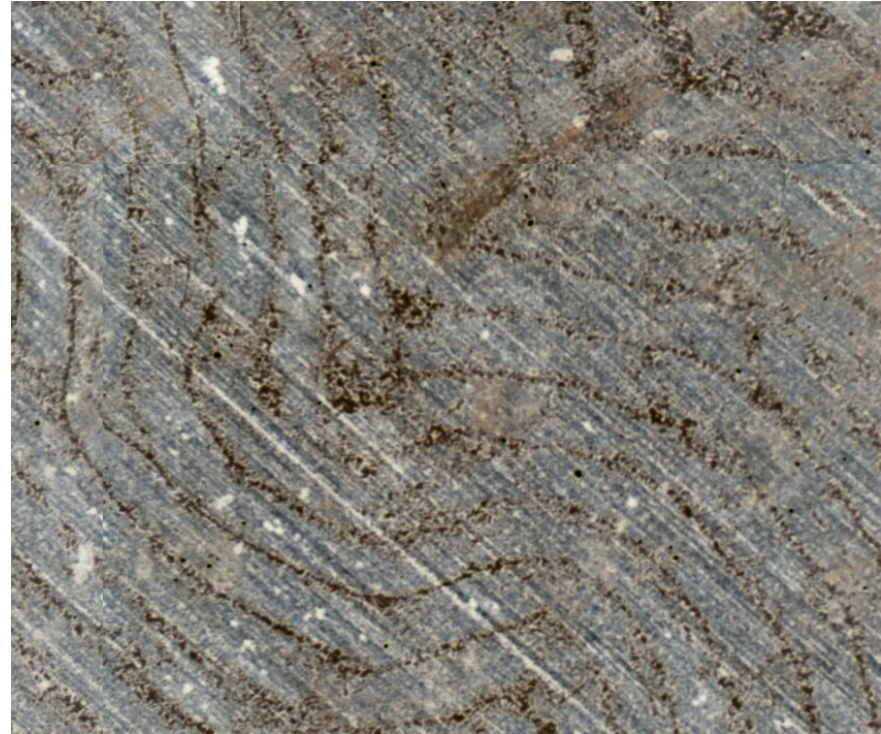
# Tool-Part Interaction



# Tool-Part Interaction

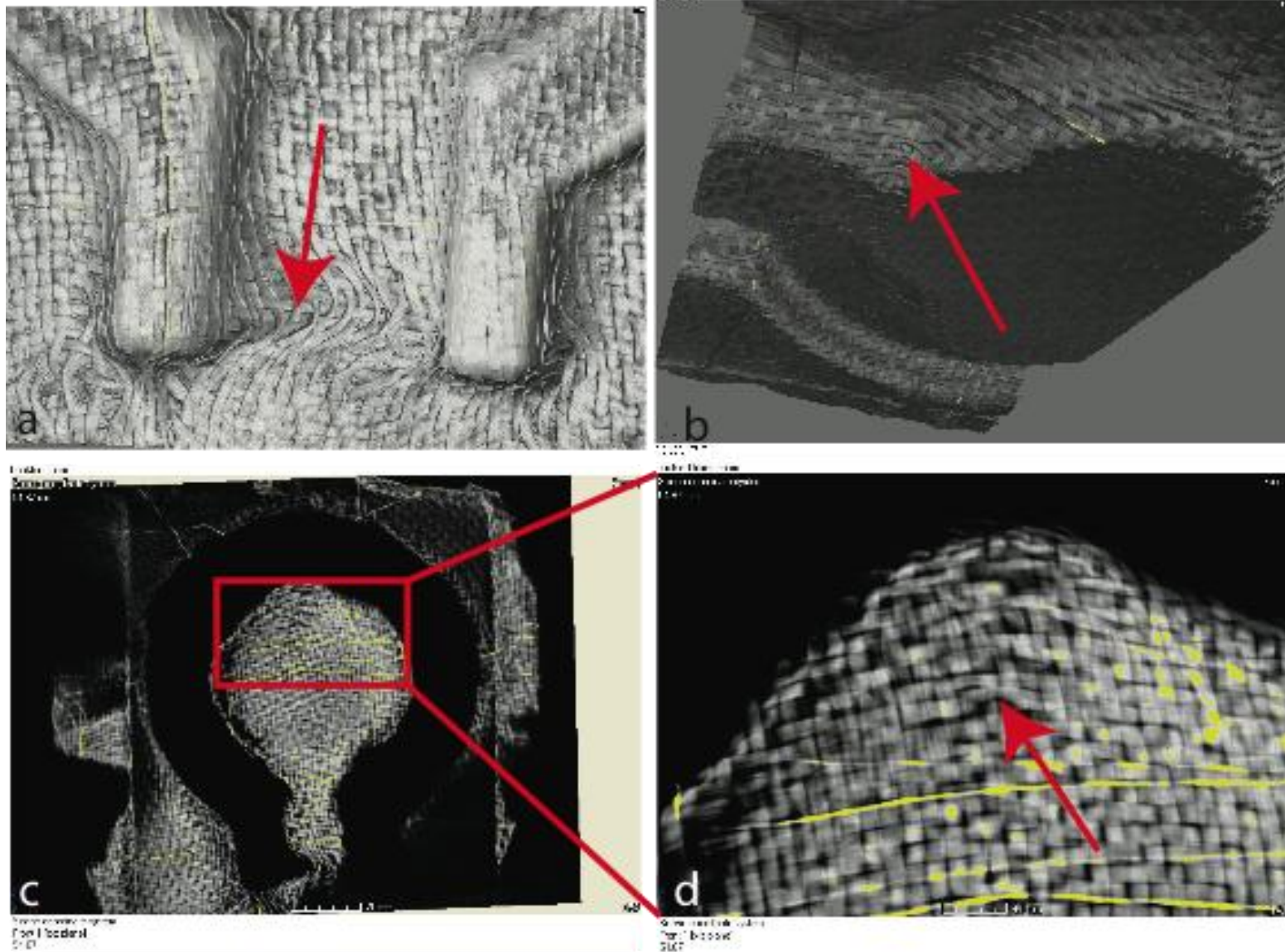


# Laminate Design





# Drape-Induced Misalignment





# Future Work

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- Further quantify effects of tool-part interaction
- Use CT scanning to elucidate the formation of wrinkles during the manufacture of propeller blades
- Investigate the link between laminate design and tool geometry

# Acknowledgements

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