# Interfacial Shear Strength Measurement for Interface-Controlled Carbon Fibers

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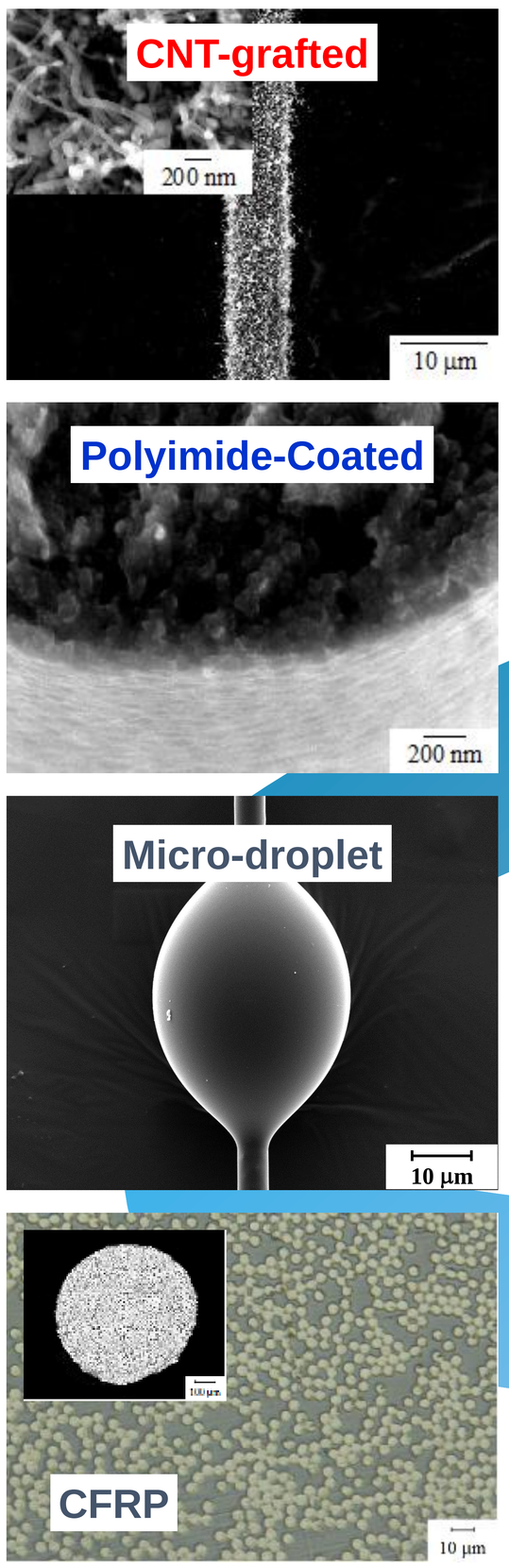
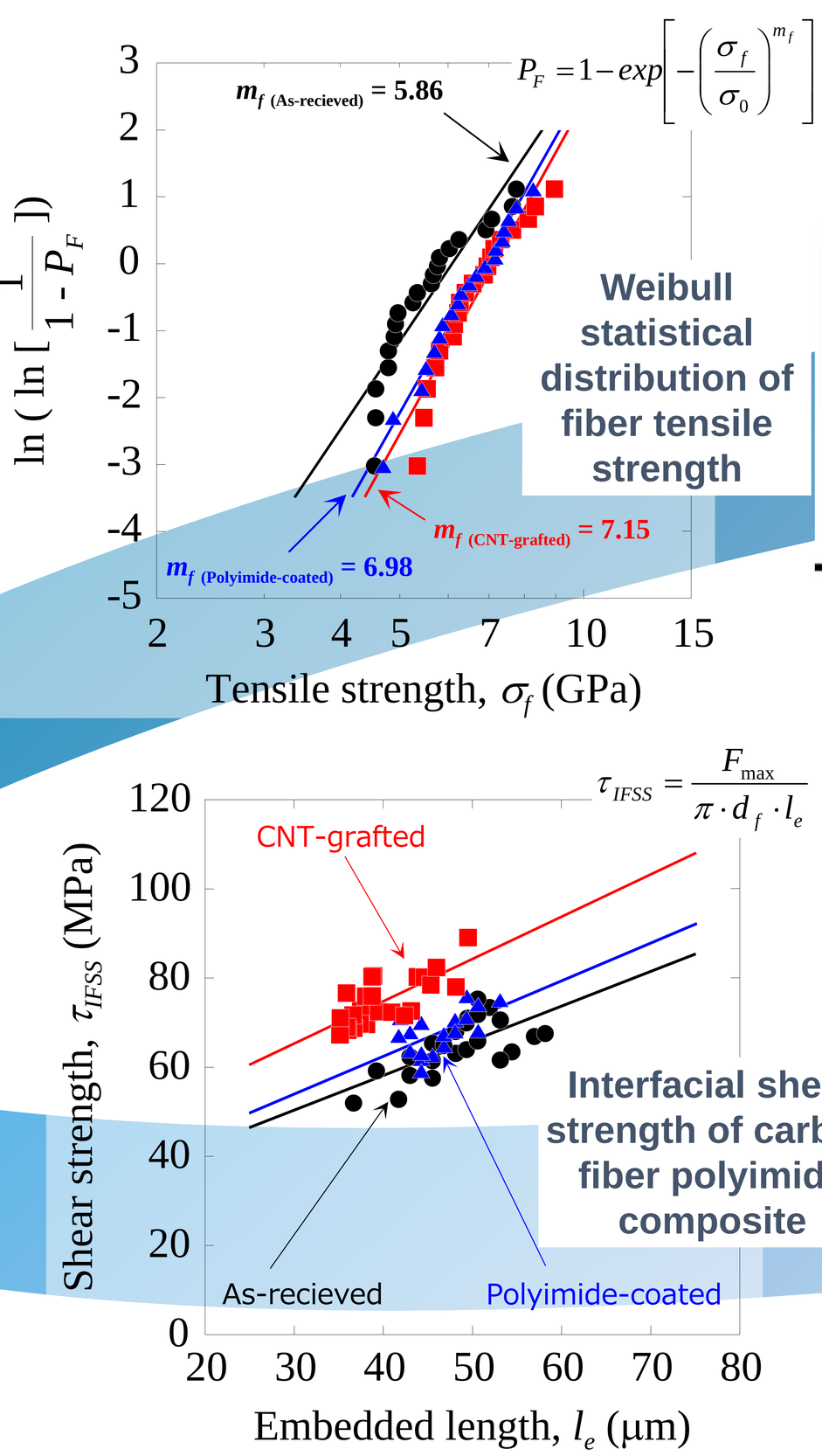
## Back-ground

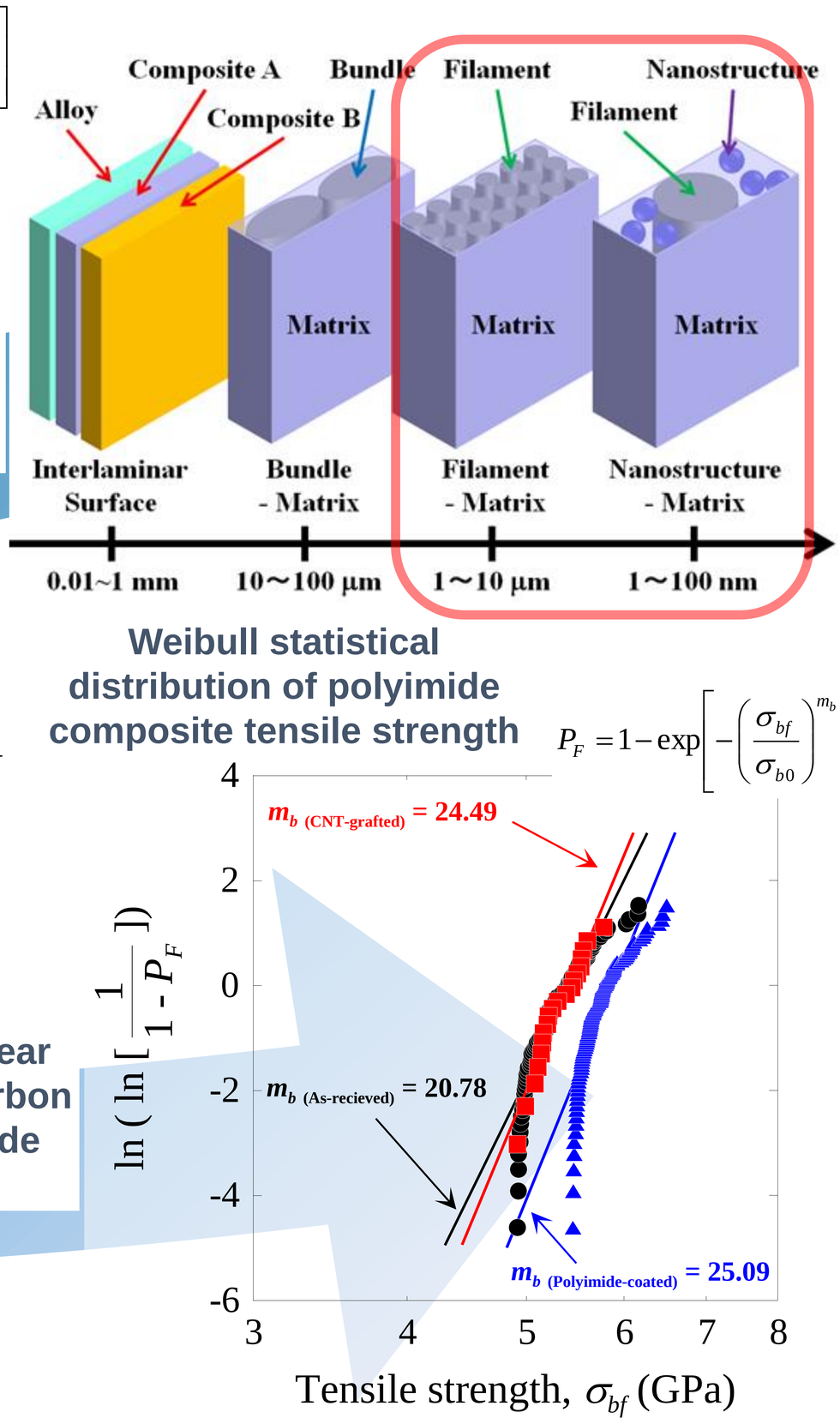
Carbon fibers are widely used as reinforcement in composite materials because of their high specific strength and modulus. Such composites have become a dominant material in the aerospace, automotive and sporting goods industries. The surfaces of carbon fibers affect the fabrication and use of carbon fiber reinforced composites.

## Current Issues

The effects of grafting of CNT and PI coating on the tensile and interfacial shear strength of PAN- and pitch-based carbon fiber polyimide composites were investigated. The results show that the average tensile and interfacial shear strengths in the CNT-grafted and the PI-coated fibers are higher than that in the as-received fibers.










## Research Outcome

CNT-grafted and the PI-coated carbon fibers offer the opportunity to add the potential benefits of nanoscale reinforcement to well-established fibrous composites to create interface-controlled composites. It is important to develop the polymer matrix hybrid composites based on the new concept with high-mechanical and multi-functional performance.

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