



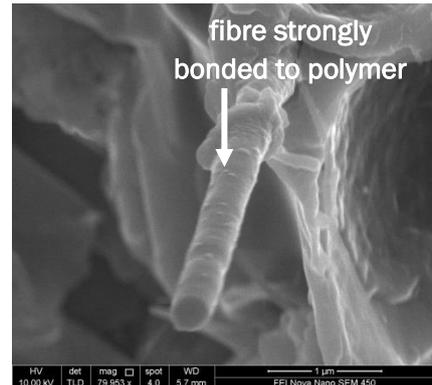
# SiC Polymer Composite

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Silicon carbide fibre and whiskers were added to an industrial shotcrete polymer at 1% and the properties were examined. The polymer and silicon carbide was tested for compatible coatings and further composites were prepared using coated silicon carbide.

Addition of silicon carbide did not increase the UTS of the polymer. Larger silicon carbide fibres did not significantly increase the UTS of the polymer even with a coating. A significant increase in the UTS was observed (16%) with coated whiskers.

This study showed the importance of fibre-matrix bonding and the improvements possible from improving the interface through beneficial coatings.



1% SiC whisker (coated) in shotcrete

Matrix	Polymer Shotcrete	SiC	SiC + coating
Additive	-	1 vol%	1 vol%
UTS (MPa)	10	10.3	11.6
Elongation (%)	3.3	3.2	2.5
Hardness (Shore D)	2.62	2.62	

