

# Exfoliated Graphite as a Reinforcement for Polymers

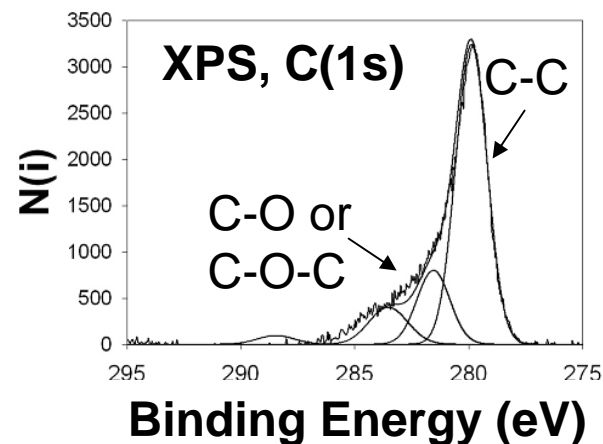
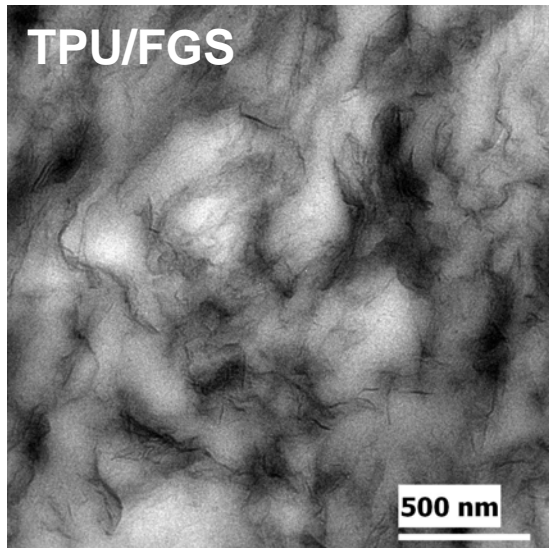
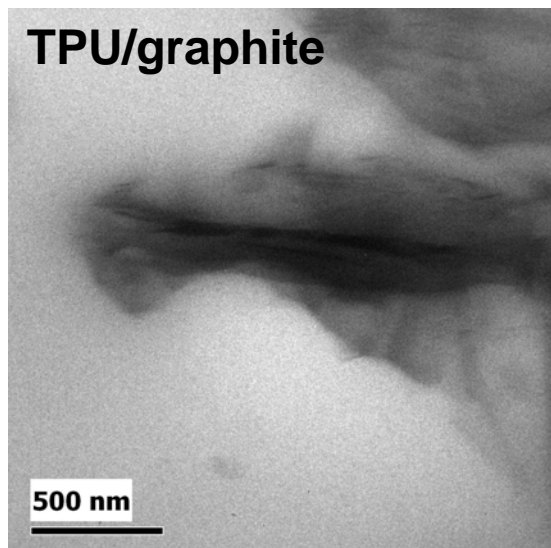
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NNIN Facility utilized: Characterization Facility

- ◆ Incorporation of high aspect ratio nano-platelets greatly improves properties of polymers.
- ◆ Graphite and functionalized graphite sheets (FGS, Princeton Univ.) dispersed into polymers
- ◆ Dispersion of graphite and FGS probed with transmission electron microscopy (TEM)
- ◆ TEM revealed an exfoliated morphology of FGS
- ◆ X-ray photoelectron spectroscopy (XPS) confirmed oxygen functionalities (C-O and C-O-C) on FGS which increase dispersability and adhesion
- ◆ Higher property enhancements with FGS dispersion

TEM of thermoplastic polyurethane (TPU) composites



## Publications

- ◆ Kim, H. and Macosko, C. *Macromolecules*, submitted.
- ◆ Schniepp, H. C. *et al. J. Phys. Chem. B* 2006.