polymers

MDPI

Supplementary Materials

Plasma-assisted Synthesis of Multicomponent Nanoparticles containing Carbon, Tungsten Carbide and Silver as Multifunctional Filler for Polylactic Acid Composite Films

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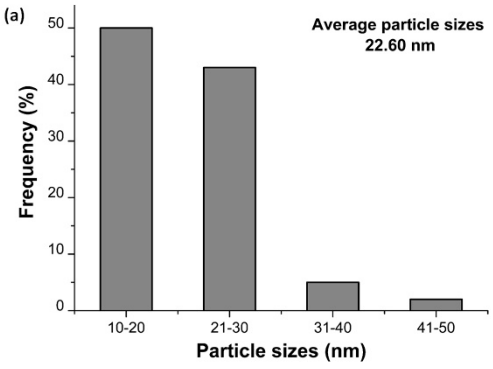
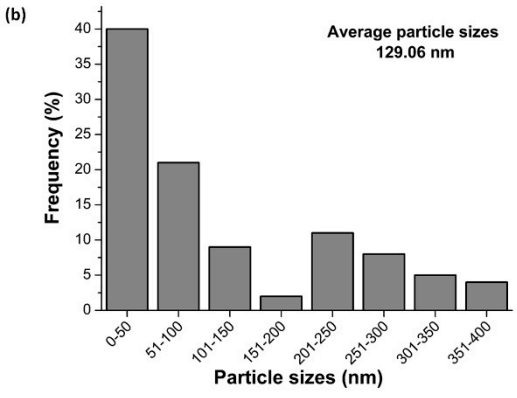
3. Results and Discussion

Particle size distribution of carbon-WC, carbon-WC-Ag nanoparticles and AgNPs existing in carbon-WC-Ag nanoparticles





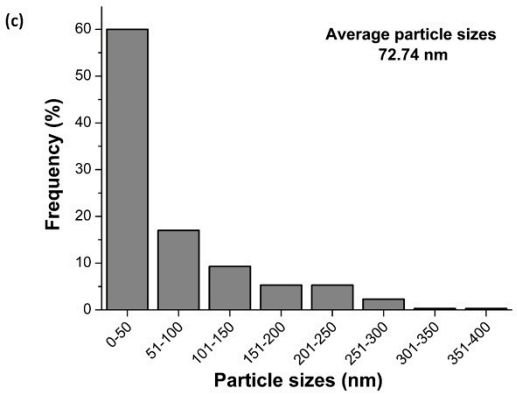


Figure S1. Particle size distribution of (a) carbon-WC nanoparticles from SEM images, (b) carbon-WC-Ag nanoparticles from SEM images and (c) AgNPs existing in carbon-WC-Ag nanoparticles from TEM images (n=300).

Surface morphology of neat PLA and PLA composite films having different filler contents

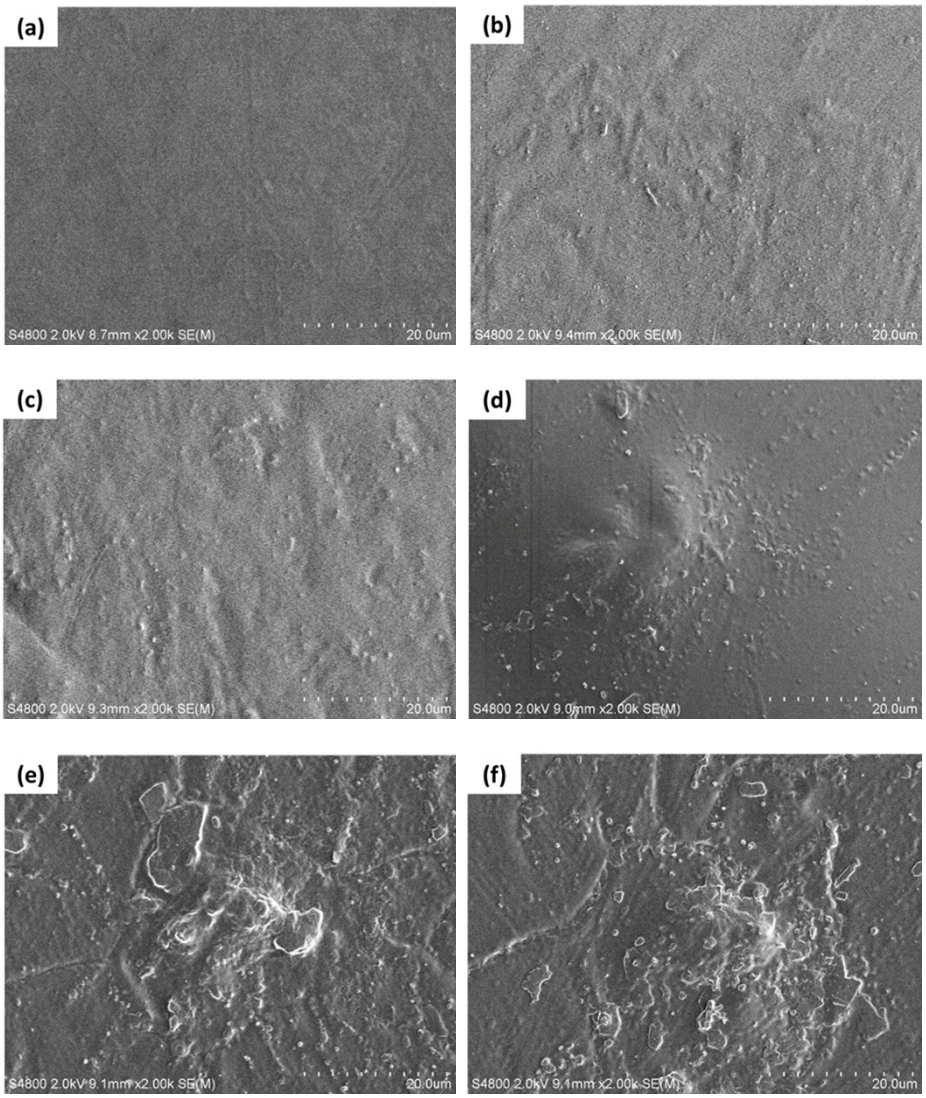


Figure S2. SEM images of surface morphology of (a) neat PLA film and PLA/carbon-WC-Ag composite films with different filler contents of (b) 0.25, (c) 0.75, (d) 1.23, (e) 1.72 and (f) 2.20 wt%.

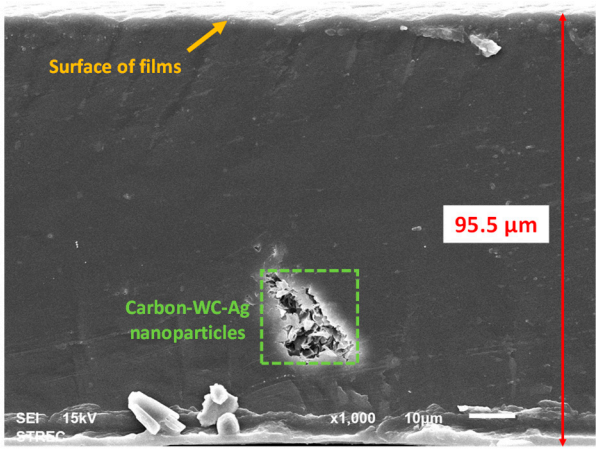


Figure S3. FE-SEM image of cross-sectional morphology of PLA/carbon-WC-Ag composite film at the filler content of 1.23 wt% (magnification of 1,000×).