The present work, proposes a plasma process for surface modification of particles of graphite and graphene obtained commercially. The particles were modified in a plasma reactor with mechanical agitation to homogenize the surface modification of the particles; this modification was realized with monomer of propylene in vacuum at a plasma power of 70W and time of 30 minutes, during plasma treatment, the particles were coated with a thin film of a plasma polymer of propylene. Pristine and coated carbon particles were analyzed by transmission electronic microscopy (TEM), X-ray diffraction (XRD), infrared spectroscopy (IR), Raman spectroscopy (RAMAN) and thermogravimetric analysis (TGA). Pristine and modified graphite and graphene were used to prepare nanocomposites with polypropylene, composites were prepared by melt mixing using a small extruder coupled with ultrasound, and composites were prepared at 0.5 y 1.5% (weight) of carbon particles. Thermal properties of propylene composites were evaluated by differential scanning calorimeter (DSC) and TGA.

Keywords: graphite, graphene, plasma

References:

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