

## Nanoparticles prepared by Sol-Gel method used in the formation of nanocomposites with nylon, 6,12

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**Abstract.** Nanocomposites are nanometrical material particles embedded in a specific matrix. The degree of organization of the nanostructures and their properties depend on the nature of the organic and inorganic components of the structure that can generate synergic interactions [1]. *Polymeric nanocomposites are related to a class of hybrid materials where inorganic substances of nanometric dimensions are dispersed in a polymeric matrix. A small amount of inorganic material has a great effect on the structure performance. The nanoparticles of inorganic materials have high specific surface area that promotes the dispersion of the polymeric matrix and the properties depend on the homogeneity of the dispersion. In the present work nanocomposites of nylon 6,12 with different concentrations of pseudoboehmite obtained by sol-gel process [2,3] were prepared with and without the presence octadecilamine. The pseudoboehmite was characterized by X-ray diffraction, scanning electron microscopy (Figure1), differential thermal analysis and thermo gravimetric analysis. The nanocomposites were characterized by thermal and mechanical tests. The addition of pseudoboehmite reduces the melting flow evidencing the interaction of pseudoboehmite with the polymeric matrix, modifying its crystalline structure.*

Key-words: pseudoboehmite, nylon 6,12, nanocomposite.

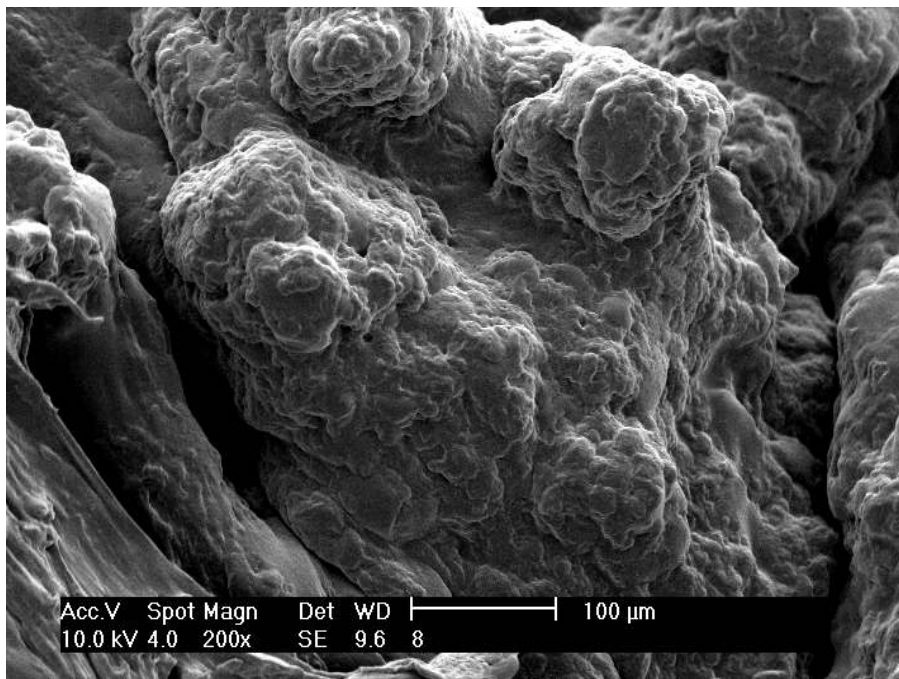


Figure (1) scanning electron microscopy of the pseudoboehmite

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