

Synthesis of nanostructured materials by a new solid state pyrolysis organometallic polymer method

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In this study, the preparation of nanostructured particles of metal/metal oxides by using a pyrolysis of organometallic polyphosphazenes having the metal anchored to the polymeric chain is described. The elaboration process is based on the thermal decomposition of organometallic derivatives of polyphosphazenes in air at temperature of 800 C°. As an example, the preparation of chromium, iron, ruthenium and manganese nanoclusters have been described, but the method is very general and a variety of meta/metal oxide materials can be obtained. Preliminary results on some special properties of the products are given and potential applications are discussed.