

Synthesis and characterization of an intelligent material (Polyurethane with Shape memory).

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Abstract. Shape Memory Polymers Composite SMPCs are materials classified in the family of intelligent materials. The type of polymer and the reinforcement introduced into the manufacturing processes of this type of material play a very important role in these properties. Even the processes of stimulating elaborate composites occupy a large part of the scientific work for having programmed the memory of materials.

In our work, a method of synthesis of a thermally stimulated shape memory polyurethane, followed by a characterization by DSC, FTIR, UV and SEM to determine the properties of this type of materials. Another study on the process of recovering the initial form by thermal stimulation was followed in order to have the possible applications.

Keywords: Shape Memory Polymers Composite SMPCs, Stimulation, Intelligent Materials, reinforcement.