

FABRICATION OF POROUS NITINOL BY SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS (SHS)

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TÓM TẮT:

Fabrication of porous Nitinol (NiTi alloy) for biomedical purpose using SHS process has been researched. The results shows that at the ignition temperature of 1400°C, SHS reaction occurs with minimum preheating temperature of 600°C. Mechanical activation of raw materials has a direct effect on the reaction process. The desired phase namely NiTi was obtained. The sample has high porosity and high ratio of opened pore which is the requirement of materials using as a hard tissue implant. SEM shows that there is no boundary between separated powders' particles. It means that Ni and Ti were completely diffused to each other, which could not be obtained by other sintering methods.