# Effect of Nickel Particle Size on Eactive Sintering Production of Niti Shape Memory Alloy

Pavel Novák, Ivo Marek, Petr Dvořák, Tomáš Veselý, Vladimír Vojtěch, Andrea Školáková, Adriana Bernatiková
Department of Metals and Corrosion Engineering, University of Chemistry and Technology Prague, Technicka 5, 166 28 Prague 6 – Dejvice, Czech. E-mail: panovak@vscht.cz, ivo.marek@vscht.cz, petr.dvorak@vscht.cz, tomas.vesely@vscht.cz, vladimir.vojtech@vscht.cz, andrea.skolakova@vscht.cz, adriana.bernatikova@vscht.cz

**This work is focused on the description of the influence of the particle size of nickel on the synthesis of NiTi shape memory alloy by reactive sintering with high heating rate (300 °C.min-1). It was found that coarse nickel powders undergo only a limited thermally-activated reaction. On the other hand, too fine powders support the low-temperature (500-800 °C) diffusional formation of Ni-Ti intermetallics which could then suppress the rapid thermally-activated reaction. The optimum powder fraction of nickel to obtain the material with the lowest porosity and fraction of undesirable $Ti_2Ni$ phase is 25-45 µm.**

**Keywords:** powder metallurgy, NiTi, reactive sintering

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