

Comparison of Ni-Ti-Si Alloy Prepared by Various Powder Metallurgy Routes

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This work describes three ways of preparation of Ni-Ti-Si shape memory alloy by powder metallurgy methods. The self-propagating high-temperature synthesis, combination of self-propagating high-temperature synthesis, milling and spark plasma sintering and mechanical alloying with following spark plasma sintering were applied to Ni-Ti-Si powder mixture. The differences in microstructure, phase composition, transformation temperatures and mechanical properties were observed and at the same time these properties were compared with other Ni-Ti and Ni-Ti-X alloys.

Keywords: Ni-Ti-X alloy, Powder metallurgy, Self-propagating high-temperature synthesis, Spark plasma sintering, Mechanical alloying

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