B05

# (Ti+Ni) 혼합분말의 고온자전합성 거동에 미치는 TiNi 분말 첨가의 영향

# Effect of the Addition of TiNi Powder on the SHS Reaction of (Ti+Ni) Powder Mixture

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For production of porous body the SHS (Self-propagating High-temperature Synthesis) method was used to a powder mixture of (Ti+Ni). To change the behavior of combustion wave propagation during SHS reaction and investigate its relationship with pore structure of porous TiNi product TiNi powder was intentionally added to the powder mixture of (Ti+Ni) as a reaction diluent.

Maximum combustion temperature, the velocity of combustion wave and the temperature distribution in the green compact during SHS process were measured. Porosity and pore size of the porous product were investigated. Microstructure of porous product were observed with use of opticla microscope and SEM. Phase analysis was carried out by XRD. Relationship between the additive amount of TiNi, the combustion behavior and the pore structure was investigated.

Ignition temperature for proper combustion increased with increase of the amount of TiNi additive. The velocity of combustion wave decreased with increase ot the amount of TiNi. Low velocity of combustion wave propagation resulted in small pores in the porous product. Maximum combustion temperature seemed to have almost no relationship with pore structure.