MS1L_12637

XXI International Congress of Theoretical and Applied Mechanics
Warsaw, Poland, August 15–21, 2004

Ultrasonic Characterization of Phase Transformation in NiTi Wire During Thermomechanical Loading

Michal Landa(1), Petr Sedlak(1), Frantisek Marsik(1), Petr Sittner(2), Vaclav Novak(2)

(1) *Institute of Thermomechanics, Academy of Sciences, Dolejskov, Prague, Czech Republic*
(2) *Institute of Physics, Academy of Sciemces, Na Slovance 2, Prague, Czech Republic*

Evaluation of thermo-mechanical properties of NiTi wires intended for vascular stent applications is carried out by combination of tensile tests at constant temperature with in-situ ultrasonic measurements (wave speed, attenuation) and electrical resistivity measurements. It is found that the mechanical and electric resistance results are mainly sensitive to R-B19 stress induced martensitic transformation, but the ultrasonic wave speed and attenuation vary most significantly when the R-phase reorientation or distortion take place.

View the extended summary