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Raman scattering studies of Ge-Sb-Te nanoparticles[1] CHRISTINE KIM, HAE-YOUNG SHIN, AH REUM JEONG, WILLIAM JO, SEOKHYUN YOON, Department of Physics and Division of Nano Sciences, Ewha Womans University, Seoul 120-750, Korea — We have measured Raman scattering spectra of Ge-Sb-Te (GST) nanoparticles which are synthesized by a pulsed laser ablation method. The nanoparticles were grown under different growth conditions such as temperatures and/or pressures. Our measurements could provide information towards the optimal growth conditions for better crystalline quality of the GST nanoparticles. We have also measured nitrogen-doped GST nanoparticles. Comparision between Raman responses of nitrogen- doped- and undoped-GST nanoparticles will be presented. Our results suggest that Raman scattering spectroscopy can be used to study phases and phase changes through local structural information in the GST nanoparticles, which are being developed for low-power non-volatile memory applications.

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