

알루미나 나노 Particle의 분산 평가 및 최적화

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Abstract : The generation of energy and the cooling of system using thermoelectric semiconductor material have been in spotlight. Thermoelectric effect increases with the decrease of the thermal conductivity. In the thermoelectric devices, thermal conductivity is related to phonon scattering. Therefore, few studies have been conducted in the thermoelectric materials dispersed nano oxide particle for increasing the phonon scattering. However, core-shell structure which nano particle disperses in solvents and then which thermoelectric materials coated on the nano oxide particles has not been reported. In this study, we selected commercial nano powder such as Al_2O_3 . This nano particle was about 20nm and was crushed aggregate by mechanical treatment. We have developed the effect of the dispersant and the solvent. The properties of particles were evaluated by SEM, TEM, particle size analysis, and BET. Dispersion and dispersion stability were evaluated by electronic microscope and turbidity.

Key Words : Al_2O_3 nano particle, dispersion, thermoelectric