Synthesis of Metal-carbon Composite Composed of Expanded Graphite and Nanometal and its Properties

이원규†, 홍석환[1]
강원대학교; [1](재)영원산업진흥원 광물소재사업팀
(wglee@kangwon.ac.kr†)

Various methods of spreading heat are widely used in today's electronics, which is one of major application of expanded graphite(EG)/Ag nanoparticle composite. Heat spreaders are used in die level packaging to spread heat from the microprocessor chip into the packaging. The potential of EG/Ag nanoparticle composites for the heat spreader should be verified. The synthesis of EG/Ag nanoparticle composites has been performed by the chemical reduction of Ag ions followed by the addition of expanded graphite into the Ag reducing solution. The prepared EG/Ag nanoparticle composites showed the uniform dispersion of Ag nanoparticle on the surface of expanded graphite.
The EG/Ag nanoparticle composites exhibit relatively high thermal conductivities rather than that of pure expanded graphite. We suggest that the possibility of EG/Ag nanoparticle composites can be as a strong candidate for the advanced heat spreading material in the field of electronics.