Solventless fabrication of C@Fe_3O_4@GNP core-shell structure and its prominent electromagnetic shielding properties

주재철, 김영선, 최용흠, 심상은†
인하대학교
(seshim@inha.ac.kr†)

Electromagnetic interference has become a considerable problem with the increasing popularity of electronic devices, which would make a damage of sensitive apparatus and body of human beings.
The coating of magnetic materials on GNP has also been researched because of its magnetic properties with which much of radiant energy is transformed into heat energy. However, the process of adding metal to carbon-based materials is rather complex and time-costing.
In this research, to overcome such complicated-fabrication steps, solventless synthesis is well used to eliminate the steps of neutralization of basic or acidic products, or drying. In addition, not only formation of metal oxide particles in regular size but also carbon-coating surround the particles simultaneously emerge in just one-step, which means time-saving and facile. Finally, the as-prepared filler can have a potential to efficiently absorb electromagnetic wave.
This work was supported by a grant (1415140523/10052976) Korea Ministry of Trade, Industry and Energy (MOTIE), Republic of Korea (2016)