Purification and Doping of Nano-Thin Exfoliated(NTE) Graphite for EMI shielding by RF thermal plasma system

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Nano thin exfoliated (NTE) graphite powders normally contain a considerable amount of imperfections and impurities from previous chemical exfoliation process. The NTE-graphite powder is fallen into the RF plasma arc with NH3 gas. In-situ purification and nitrogen doping of the NTE-graphite powder is achieved by passing through a hot zone of thermal plasma arc at temperature of more than 10,000°C and by a decomposed nitrogen from a NH3 gas. The effects of N-doping on the structure of NTE-graphite have been investigated by various characterization techniques. SEM, Raman and XRD analysis were used to distinguish the difference of the structure. And XPS were explained to the bonding information.

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