

## Microwave Absorption Properties of Low Density Polyethelene-Cobalt Ferrite Nanocomposite

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**Abstract :** Low density polyethylene (LDPE) nanocomposites with 3, 5 and 7 wt. % cobalt ferrite (CoFe<sub>2</sub>O<sub>4</sub>) nanopowder fabricated with extrusion mixing and followed up by hot press to reach compact samples. The transmission/reflection measurements were carried out with a network analyzer in the frequency range of 8-12 GHz. By increasing the percent of CoFe<sub>2</sub>O<sub>4</sub> nanopowder, reflection loss (S<sub>11</sub>) increases, while transferring loss (S<sub>21</sub>) decreases. Reflectivity (R) calculations made using S<sub>11</sub> and S<sub>21</sub>. Increase in percent of CoFe<sub>2</sub>O<sub>4</sub> nanopowder up to 7 wt. % in composite led to higher reflectivity amount, and revealed that increasing the percent of CoFe<sub>2</sub>O<sub>4</sub> nanopowder up to 7 wt. % leads to further microwave absorption in 8-12 GHz range.

**Keywords :** nanocomposite, cobalt ferrite, low density polyethylene, microwave absorption

**Conference Title :** ICMSET 2015 : International Conference on Material Science and Engineering Technology

**Conference Location :** Paris, France

**Conference Dates :** December 30-31, 2015