International Journal of ChemTech Research
CODEN (USA): IJCRGG ISSN: 0974-4290
Vol.9, No.04 pp 131-139, 2016

A Review on Mechanical and Tribological Properties of Epoxy Resin, SiO_2, TiO_2, BaSO4, Al_2O_3, CaO, MgO, K_2O, Na_2O, Fe_2O_3 Reinforced with Basalt Fibres

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Abstract: In modern years, both industrial and academic world are focussing their attention toward the development of sustainable composites, reinforced with natural fibres. In particular, among the natural fibres that can be used as reinforcement, the basalt ones represent the most interesting for their properties. The aim of this review is to illustrate the results of research on this interesting subject. In the introduction, mechanical, thermal and chemical properties of basalt fibre have been reviewed. Moreover, its main manufacturing technologies have been described. Then, the effect of using this mineral fibre as reinforcement of different matrices as polymer for thermoplastic and thermoset, metal and concrete has been presented. Furthermore, an overview on the application of this fibre in biodegradable matrix composites and in hybrid composites has been provided. Finally, the studies on the industrial applications of basalt fibre reinforced composites have been reviewed.

Keywords : Basalt fibre, epoxy resin, reinforcement, fillers, tensile strength.

T. Narendiranath Babu /International Journal of ChemTech Research, 2016,9(4),pp 131-139.

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