Invention Title	ECO-FRIENDLY BRAKE FRICTION COMPOSITE USING WASTE MATERIALS AND BRAKE PAD MANUFACTURED THEREOF
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Abstract:

The brake friction composite prepared with fly ash-an industrial waste, white ark shell powder- a sea waste, reinforcing fiber, binder and the friction modifiers comprises composition of Phenol formaldehyde 18-20% by wt.; a glass fiber forming 3-5% by wt.; a Al2O3 5-8% by wt., Fly ash 25-30 % by wt.; a CNSL powder 8-10 % by wt., Graphite 3-5 % by wt., Nitrile Butadiene Rubber (NBR) 3-5 % by wt., White ark shell powder 6-11 % by wt., Barium Sulphate 15-20 % by wt. The composition is expected to satisfy most of the performance criteria. Besides, it can also offer less release of wear dust during braking, negligible heat transfer at the backing plate to avoid the risk of backing plate detachment, and less noise and vibrations. The use of more than 40 wt. % of waste materials can increase the waste material utilization as well as reduce the overall cost of development of the product.

Complete Specification

The invention is related to the development of a cost effective, eco-friendly and novel brake friction composite formula using waste materials for disc brakes. The brake friction formulation includes industrial waste, sea waste and an organic filler as a major constituents. This invention also relates to the brake pad manufactured with the composition containing waste materials and manufacturing method thereof.

BACKGROUND OF THE INVENTION

Technological developments, demand of high power braking with controlled NVH (noise vibration harshness), environmental friendliness and cost have changed the market for the brakes. The manufacturers are moving towards the fast curing resins to increase their productivity. But still it is under consideration for the research and development. The use of disc brakes with the every wheel of vehicles have increased the demand of high performance brake pads. This demand has also increased the risk of wear dust and emission of particulate matter in air as well as in the ground. The high rated performance can be achieved by reinforcing high performing ingredient in the composition which probably increases the cost. Besides, a good pedal feel is highly required for the high performing brake pads. It becomes a tedious