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(57) Abstract :

Disclosed is a composite composition and method comprising collecting (102) and sieving (104) FA from a thermal power plant in the 106-125 µm range, determining (106) the zeta potential of alumina and CNTs across a pH range of 2 to 12 and suspending (108) 20- 60grams (g) of alumina in 1.5-3 litre (L) of distilled water with 700-900 milligrams (mg) of sodium dodecyl sulfate, and further suspending (110) 0.5-1.5g of CNTs in 0.5-1.5L of distilled water with 0.5-1.5g of cetyltrimethylammonium bromide and adjusting the pH to 7-9 using dilute NaOH or H2SO4 to achieve a positive zeta potential for the CNT suspension, adding (112) the alumina suspension dropwise to the CNT suspension, filtering and drying (114) the precipitate to obtain a heterocoagulated alumina-CNT composite powder; and mixing (116) the heterocoagulated alumina-CNT composite powder with the sieved FA in a ball mill (without crushing media) to achieve homogeneous composite powder. <>

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