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Departement : Civil engineering

Research interest: Building materials, low cost construction materials

Proposed area : Improvement in pozzalanic reaction products in cement mortar using calcined quarry dust (CQD) and calcined laterite soil (CLS)

Keywords: hydration products, laterite soil, quarry dust, calcination, cement mortar, activators

The study area aims at improving the quality of cement products like mortar by increasing the CSH and CAH products during hydration reaction. Research are still going on this area and here my intention is to do a research with natural and waste materials which can contribute to low cost construction materials and techniques.

I am looking forward for the potential usage of natural materials like laterite soil which is available in sites thereby reducing the cost of construction and effective use of waste material like Quarry dust thereby reducing the environmental issues related to it This can be achieved through using materials like laterite soils and quarry dust after calcinations at various temperatures. The material for calcinations can be selected after analysis of chemical composition tests. The calcined samples will be chemically analyzed and added in various cement mortar as replacement to fine aggregate in various proportions. The samples must be then analyzed for strength test , bond test , various chemical attack tests, thermal tests and X- ray diffraction analysis. Added to this the samples can also be analyzed by incorporating chemical activators like Na_2SO_4 , CaCl_2 etc in addition to the CQD and CLS. The economical aspects can also be studied.