Journal of Scientific & Industrial Research

CONTENTS

Management & Information Technology

The measurement of innovation capability of an organisation is a difficult task. Various methods for the measurement of innovation have been developed. But a method involving fuzzy logic for the measurement of innovation in MSMEs has yet not been developed. In this study, eighteen factors affecting innovation capability of steel manufacturing MSMEs were obtained from literature. Experts from industry and academics were approached for prioritizing these factors. A survey was conducted based on the questionnaire prepared.

K R Kiron & K Kannan
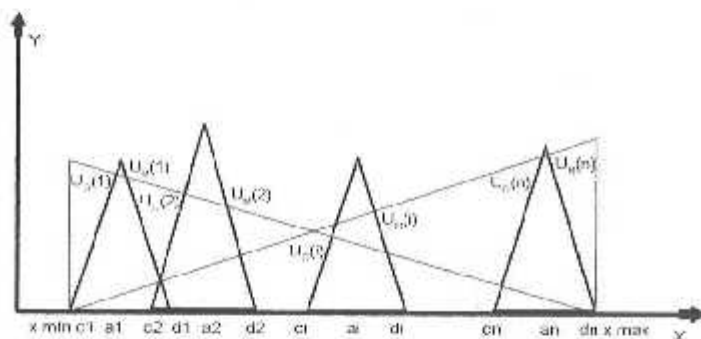
Emotions are a way to think which tune the machinery of the brain. People without emotions are less effective thinkers and decision makers. The concept of artificial intelligence was introduced so that machines can behave just like humans but they remain incomplete without emotions. This study brings out an algorithm for sentiment analysis which may deduce emotional state of the object, it is interacting with. A statistical and probabilistic approach is proposed in this paper to teach the model the essence of emotions using context based learning.

S Prabhadevi, S Jayavel & R Kapoor
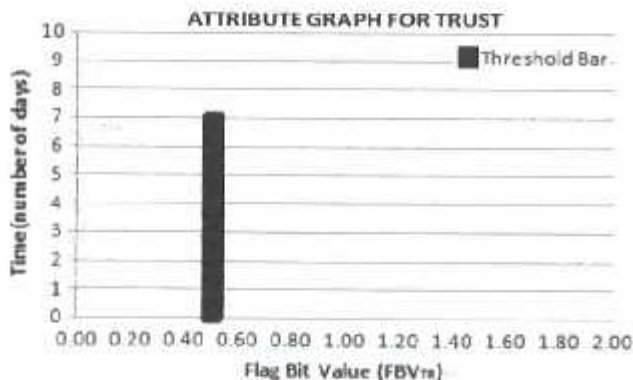
S & T and Industrial Research

The durability problems of Reinforced Cement Concrete Structures and the increasing use of concrete in exposure like sea water and acidic environment are making new demand on the material. This research Work intended to develop M_{70} grade structural Concrete using Chemical Admixture only. M_{70} Grade structural Concrete was cast, cured and tested by performing experiments like Compression Test (150mm size cubes), Sorptivity Test (100mm diameter,50mm thickness specimen), Sea water and Acid Attack Test (150mm×150mm×150mm size cubes), Accelerated corrosion Tests (100mm diameter and 200mm height cylinder).


V Patel & N Shah
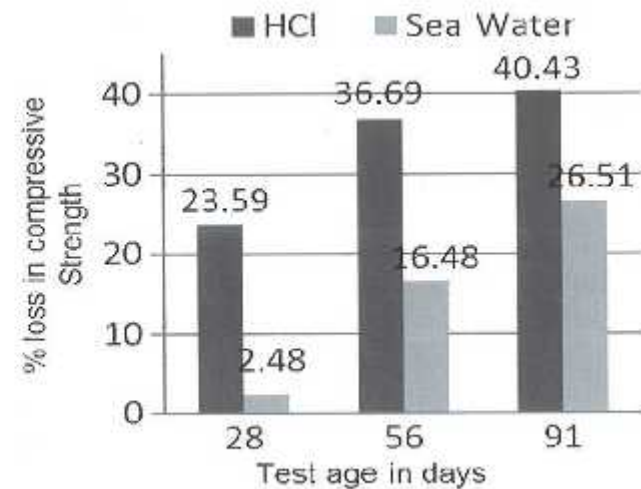
A laboratory study was undertaken in a ball milled natural zeolite (92.6 nm) in order to develop a surface modified nano-zeolite (SMNZ) for slow release of sulphate that can be used in crop production system. The nano-zeolite was surface modified with 135 mM concentration of hexadecyltrimethyl ammonium bromide (HDTMABr) for adsorption of anion on zeolite's surface. On surface modification, imaging the surface morphology of nano-zeolite by Scanning Electron Microscope (SEM) it was irregular flake like structure.
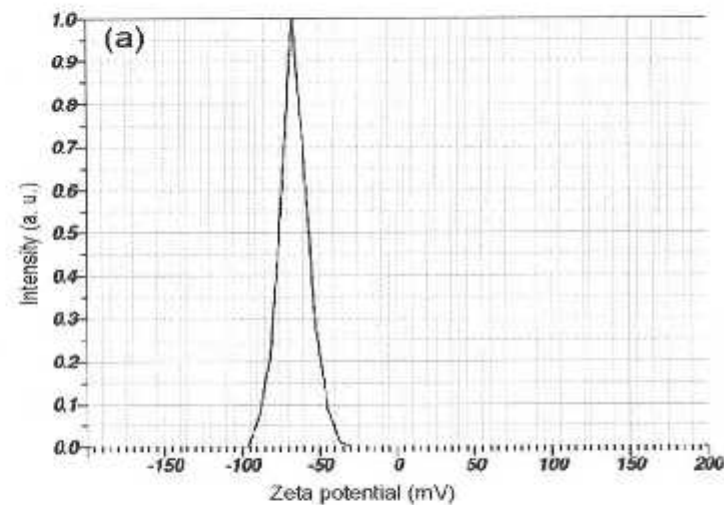
M Thirunavukkarasu & K S Subramanian

In this paper bi-directionally woven E-glass fabric/epoxy nanocomposite with different loading of halloysite nanotube (EP/GF/HNT) were made by hand layup followed by compression molding processes. Effectiveness of HNT addition on mechanical properties of the glass fiber reinforced epoxy nanocomposites were investigated by performing tensile and flexural property analysis as per ASTM standards. The results show that the addition of HNT significantly improved the mechanical properties compared with unfilled epoxy/glass fiber (EP/GF) composites and the maximum improvements in the properties were obtained at 4wt% addition of HNT.
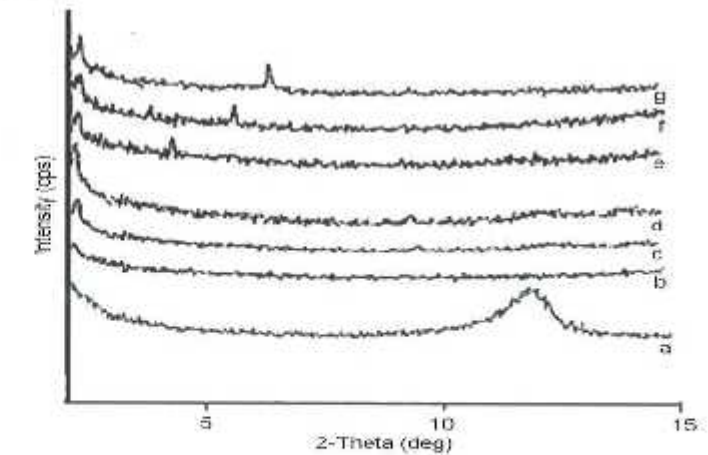

R Ramamoorthi & P S Sampath

Energy and Environment

A field experiment was conducted in Agricultural college and Research Institute, Madurai, TamilNadu Agricultural university to evaluate integrated use of animal manures along with inorganic fertilizers on soil available major and secondary nutrients in bhendi crop (Arka anamika) with organic sources like goat manure and pig manure combined with inorganic fertilizers on availability of soil available major and secondary nutrients. There were ten treatment combinations replicated thrice in Randomized block design (RBD) in Maddukkur soil series (*Typic Haplustalf*).
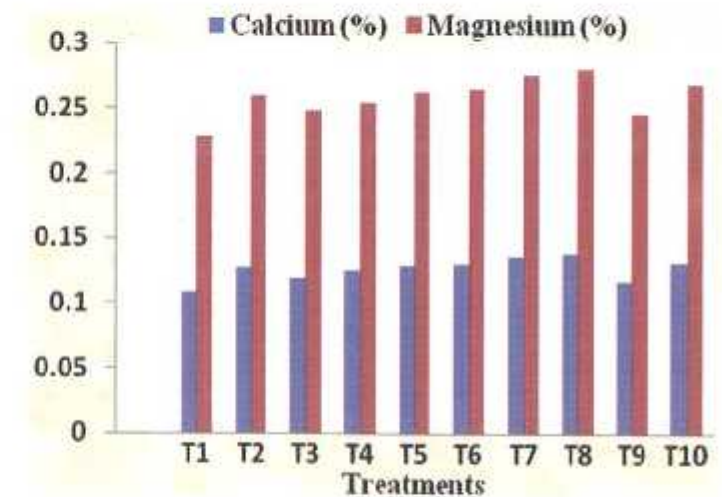

A Dhavappriya & V Sanjivkumar

695   **Effect of varying the Compression ratio and Injection timing on Performance and emission parameters in CI engine using Mahua Bio-diesel**

Biodiesel derived from non-edible oils have become the need of the hour in order to solve the problem of oil crisis. In the present work, B20 blend of Mahua biodiesel was tested in a single cylinder diesel engine. The engine variables like CR and IT were adjusted together where CR was varied from 16 to 18 with injection timing 20°, 23° and 25° bTDC in order to evaluate the performance and emission parameters. BTE increased slightly and BSEC shown a very slight reduction at higher loads with B20 blend at standard setting. Higher increase in BTE and reduction in BSEC was observed with the advanced injection timing at higher loads.

V Hariram & G M Kumar
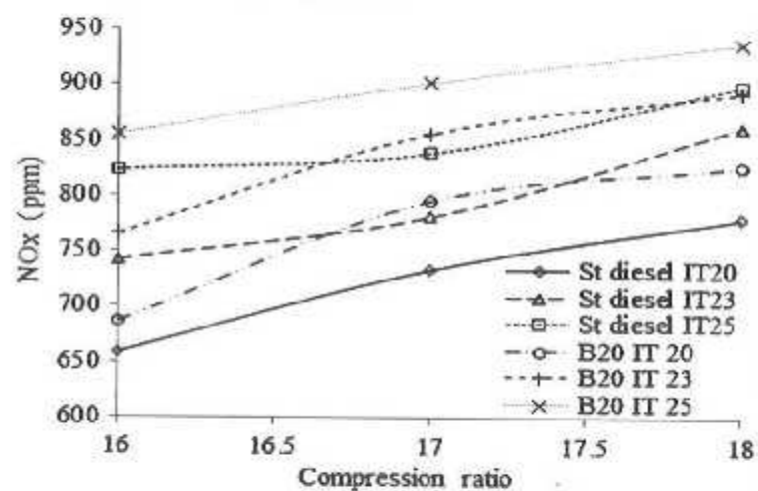
Waste Utilization

702   **Auxin treatment of wetland and non-wetland plant species to enhance their phytoremediation efficiency to treat municipal wastewater**

Auxin treatment of wetland and non-wetland plant species for increasing their phytoremediation efficiency to treat municipal wastewater was studied. The mesocosms were set up with gravels and polyethylene balls as the inert support media. The wetland plant species (*Alternanthera philoxeroides, Eichhornia crassipes;* and non-wetland species (*Chrysopogon zizanioides, Festuca arundinaceae*) were treated with six concentrations (0.5, 1.0, 2.0, 4.0, 8.0 and 10.0 mg/L) of natural auxins (Indole-3-acetic acid, Indole-3-butyric acid) and a synthetic auxin (1-Naphthaleneacetic acid).

S A Tandon, R Kumar & S Parsana

Author-Reader Platform