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18TH US-JAPAN CONFERENCE ON COMPOSITE MATERIALS
ASTM COMMITTEE D30 MEETING

DYNAMIC IMPACT BEHAVIOR OF SYNTACTIC FOAM CORE SANDWICH COMPOSITES

PETER BREUNIG, VINAY DAMODARAN, KIRAN SHAHAPURKAR, SUNIL WADDAR, MRITYUNJAY DODDAMANI, P JEYARAJ, G. C. MOHAN KUMAR, PAVANA PRABHAKAR

ABSTRACT

Sandwich composites and syntactic foams have historically been used in many engineering applications to meet the needs of a system. However, there has been minimal effort to take advantage of the weight saving ability of syntactic foams in the cores of sandwich composites, especially with respect to the impact response of the structure. The goal of this experimental study is to investigate the mechanical response and damage mechanisms associated with sandwich composites with syntactic foam cores. The core was manufactured using epoxy resin as the matrix and cenospheres as the reinforcement with varying volume fractions of 0%, 20%, 40%, and 60%. The sandwich composites were manufactured with the vacuum assisted resin transfer molding (VARTM) process. Impact tests were performed on the specimens according to ASTM D7766 at two energy levels: 80J and 160J. The data from the tests was post-processed to gain quantitative understanding of the damage mechanisms present in the specimens. A qualitative understanding was obtained through MicroCT scanning imaging. The analysis showed that increasing the volume fraction of cenospheres in the syntactic foam made the damage mechanism more desirable, even at high energy levels.

DOI
10.12783/asc33/25972

FULL TEXT:
PDF

REFBACKS

There are currently no refbacks.

7th International Engineering Symposium - IES 2018
March 7-9, 2018, Kumamoto University, Japan

Flexural response of Cenosphere/Epoxy Syntactic Foams

Kiran Shahapurkar[1], Mrityunjay Doddamani[2] and **G. C. Mohan Kumar[3]**

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3 *Department of Mechanical Engineering, National Institute of Technology Karnataka, Surathkal, Mangalore 575025, India.*

ABSTRACT: In this work, effect of arctic and room condition on the flexural response of fly ash cenosphere/epoxy syntactic foams are investigated. The effect of surface modification and filler volume fraction of cenospheres is studied. Understanding the suitability of such foams subjected to extreme conditions for prolonged periods of time is very critical for marine applications. Syntactic foams were fabricated in as received and treated conditions of cenospheres with 20 vol.% in Lapox L-12 epoxy resin. Samples were conditioned under arctic environment at a temperature of -60°C for a period of 57 days. Tests revealed brittle mode of failure for all the samples. Modulus increased whereas strength decreases for both untreated and treated syntactic foams compared to neat epoxy resin subjected to dry and arctic conditioned environment. Micrographic analysis of fractured samples is done to understand the structure-property correlations.

***Keywords**: Flexural, Syntactic foam, Surface modification, Arctic condition.*

INTRODUCTION

Syntactic foams are a particular class of foam structure, consisting of hollow spheres embedded in a continuous matrix. The closed-pore structure gives advantages of low density, low moisture uptake, and excellent mechanical properties [1]. Syntactic foams are often used as core materials in sandwich composites because they ensure high rigidity and compressive strength of sandwich structures [2]. These foams in particular are used in marine and aerospace applications due to the light weight and favourable properties offered [3]. Hollow particles play an important role in determining the properties of syntactic foams. The hollow particles of glass, carbon, fly ash cenospheres, ceramics such as Al_2O_3 and SiC, and polymers have been used in syntactic foams. Previous researchers have widely investigated the behavior of syntactic foams with engineering glass microballoons as the filler material but studies based on fly cenospheres are very scarce. These are hollow particles from fly ash, which is an industrial waste material and a potential environmental pollutant. Use of cenospheres in syntactic foams can help the environment by minimizing waste, while creating foams with better properties. In addition to this, the surface of cenospheres is modified to check the effect of surface modification on the quasi-static compressive behavior. Majority of studies on mechanical properties is carried at room temperature [4,5]. Most prevalent environmental conditions for marine composites is at subzero temperatures. For marine vessel with a composite hull operating in the Arctic or Antarctic oceans is very important. In many of these studies the effect of change in cenosphere volume fraction on mechanical properties of syntactic foams is investigated.

7th INTERNATIONAL ENGINEERING SYMPOSIUM (IES2018)

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March 9, 2018

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This is to certify that **Mr Kiran Shahapurkar** has participated and presented a technical paper in the 7th International Engineering Symposium (IES2018) held at Kumamoto University, Kumamoto, Japan, during March 7-9, 2018.

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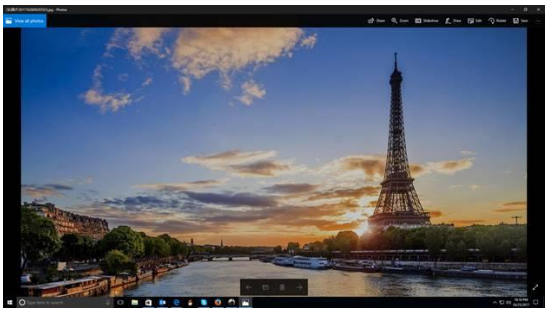

The Twenty-Sixth Annual International Conference on
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Official Acceptance Letter

Kiran Shahapurkar
Research Scholar, Department of Mechanical Engineering
National Institute of Technology Karanataka,
Surathkal, P.O. Srinivasanagar 575 025 Mangalore,
D.K., Karanataka, INDIA

March 12, 2018

Dear Kiran Shahapurkar:

The scientific committee has evaluated your submission and finds it a very exciting contribution to the field of composite materials. I am happy to inform you that your paper entitled *EROSION RESPONSE OF CENOSPHERE/EPOXY SYNTACTIC FOAMS* is accepted for **ORAL presentation** in 26th Annual International Conference on COMPOSITES/NANO ENGINEERING (ICCE-26) being held in Paris, France during **July 15-21, 2018**.
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We invite you to attend and present your research findings in this conference. Please bring this letter to the concerned Embassy or Consulate to obtain the necessary travel VISA.

Please let me know if you need any other assistance.

David Hui, Ph.D., Doctor Honoris Causa,
Chairman ICCE-26 Paris, France
Founder and Current Editor in Chief Composites B journal (Elsevier)
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EROSION RESPONSE OF CENOSPHERE/EPOXY SYNTACTIC FOAMS

Kiran Shahapurkar[1*], Mrityunjay Doddamani[1] and G. C. Mohan Kumar[1]

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Introduction

Syntactic foams are extensively used in various engineering fields like automobile, aerospace, marine applications due to their excellent specific properties [1]. Syntactic foams are particulate filled composites formed when hollow particles are dispersed in a matrix resin. Incorporating hard filler particles into polymers, synergistic effects are attained in the form of higher modulus and reduced material cost. Progressive removal of material from a target surface due to the repeated impact of solid particles is termed as erosion. It is widely recognized that polymers and their composites have poor erosion resistance and their erosion rates are considerably higher than metals. Further erosion is also governed by the impingement angle, particle size, shape and hardness [2].

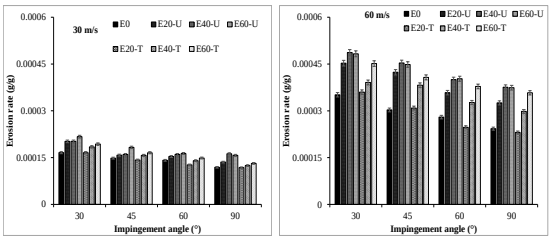
Although, extensive reports are available on the erosive behavior of composites [3], studies on foams are very scarce. The present work is carried out to investigate the solid particle erosion behavior of cenospheres reinforced epoxy syntactic foam composites. Erosive response of cenospheres with as received and silane treated conditions are also compared.

Materials and Methods

Lapox L-12 epoxy resin with K-6 hardener, supplied by Atul, Valsad, Gujarat, India is used as the matrix resin. Fly ash cenospheres of CIL 150 grade obtained from Cenosphere India Ltd., Kolkata, West Bengal, India are used as filler. Syntactic foams are prepared with as received and surface modified cenospheres. Silane coating on cenospheres is carried out using 3-Amino propyl triethoxy silane (APTS), obtained from Sigma Aldrich, Bangalore, India. Silica sand particles are used as erodent. Syntactic foams are fabricated by mixing measured quantity of epoxy resin with desired volume fraction of cenospheres until uniform slurry is obtained. Subsequently, hardener is added to the mixture prior to pouring in aluminium mold. The cast slabs are cured at room temperature for 24 hours. For easy removal of cast slabs, mold is coated with silicone releasing agent. Three different syntactic foams with varying cenosphere volume fraction of 20, 40 and 60% in epoxy matrix are fabricated. This procedure is adopted for both as received and silane treated cenospheres. Neat epoxy samples are also prepared under similar processing conditions for comparisons. Erosion tests are performed under ambient conditions as per ASTM G76 standards on an erosion test rig procured from DUCOM, Bangalore, India. Erosion tests are performed for four impingement angles (30, 45, 60 and 90°) and three impact velocites (30, 45 and 60 m/s). The samples are coded as per EXX-Y convention, where E denotes epoxy resin, XX denotes volume fraction of cenospheres and Y represents filler modification condition (U-untreated, T-treated cenospheres).

Results and discussion

Effect of impingement angle and velocity of erodent on erosion



(a) (b)

Fig. 1. Steady state erosion for sliding velocity of (a) 30 and (b) 60 m/s.

It is observed from Fig. 1 that steady-state erosion rate is maximum at 30° for neat epoxy and all the syntactic foams. Ductile behavior is characterized by maximum erosion at low angle of impact, typically between 15 to 30° and brittle behavior is characterized by maximum erosion at normal impact.

Neat epoxy being relatively brittle exhibits a peak erosion at 30°. All syntactic foams with untreated and treated cenospheres show a peak erosion rate at 30° indicating ductile erosive behavior. Low angle of impact chips off large pieces of material from the surface of the sample. Such events increase erosion rate significantly. Increase in impingement angle from 30° to 90°, decreases the erosion rate linearly for all samples. It is reported that no fixed trends are available which associate ductility or brittleness of materials with maximum or minimum angle of impingement [4]. With increase in angle of impact, the erodent creates an elastic-plastic zone beneath the specimen on impact. Once cenosphere particles come in contact with the erodent, the magnitude of impact reduces significantly cenospheres being hollow. Thereby, the erosion rate decreases linearly with increase in impingement angle. It is quite clear from Fig. 1 that the erosion of all the syntactic foams increases with increase in impact velocity. The velocities of the erosive particles have a very strong effect on erosion rate of the syntactic foams. Erosion behavior of polymer composites is characterized by the value of the velocity exponent 'n' ($E \alpha V^n$) [5]. In the present study, the velocity exponent 'n' is in the range of 1.86–2.65, affirming ductile behavior ($1<n<3$) of syntactic foams.

Tensile Behavior of Cenosphere/Epoxy Syntactic Foams

Kiran Shahapurkar[1,a)] Mrityunjay Doddamani[1)] and G.C. Mohan Kumar[1)]

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Abstract. Tensile behavior of syntactic foam composites are very critical to the engineering applications. The fracture modes and failure mechanisms under tension must be fully understood in order to realize the potential of such composites. In the present work, syntactic foam composites are fabricated using as received and surface modified hollow cenospheres embedded into epoxy matrix. Combinations of cenosphere volume fraction (0, 20, 40 and 60%) and surface modification are studied. Experimental results reveal that modulus of both untreated and treated syntactic foams increases with increase in cenosphere volume fraction compared to neat resin. Strength values of syntactic foams show decreasing trend compared to neat resin. However, treated syntactic foams demonstrated better results compared to untreated ones attributing to good bonding between matrix and filler. Scanning electron microscopy reveal brittle fracture for all the syntactic foams.

INTRODUCTION

Hollow particles when embedded in matrix resin form the composites known as syntactic foams. Lightweight syntactic foams have been widely employed in a variety of engineering applications like marine equipment's for deep water operations, core materials of sandwiches, structural parts in aerospace industry [1, 2]. Mechanical properties are understandably the primary concern for ceramic microballoon filled syntactic foams. The use of fly ash cenosphere as filler material in polymer composites is considered important from both economic and commercial point of view [3-11]. Fly ash particles have been previously used as reinforcements in polymers to develop lightweight composites. Studies have pointed to excellent compatibility between fly ash and polymers. Previous researchers have widely investigated the behavior of syntactic foams with engineering glass microballoons as the filler material but studies based on fly cenospheres are very scarce. These are hollow particles from fly ash, which is an industrial waste material and a potential environmental pollutant. Development of syntactic foams with fly ash cenospheres serves dual purpose of beneficial utilization of industrial waste fly ash and reduction in the component cost. Fly ash cenospheres/polymer composites present significant opportunities to basic science and technology and pose significant challenges for future work in polymer composite field. Interest for exploiting the benefit of low density of syntactic foams has made it necessary to characterize these materials for tensile loading. In the current research, tensile response of thermosetting syntactic foam composite using casting route is investigated. Lapox L-12 epoxy is used as the matrix resin and cenospheres are used as filler material in the foams. In addition to this, cenospheres are silane treated to check the effect of surface modification on the tensile behavior of syntactic foams.

MATERIALS AND METHODS

Materials

Epoxy resin LAPOX L-12 is used as the matrix with K-6 hardener, supplied by Atul, Valsad, Gujarat, India. Fly ash cenospheres obtained from Cenosphere India Ltd., Kolkata, India, of CIL 150 grade are used as the filler. Cenospheres are silane coated using 3-Amino propyl triethoxy silane (APTS), procured from Sigma Aldrich, Bangalore, India. Five specimens of each composition are tested in tension under room temperature conditions.

Advances in Mechanical Design, Materials and Manufacture
AIP Conf. Proc. 1943, 020100-1–020100-7; https://doi.org/10.1063/1.5029676
Published by AIP Publishing. 978-0-7354-1638-3/$30.00

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16th April 2017, www.conferenceworld.in ISBN: 978-93-86171-39-9

CURRENT & VOLTAGE CONTROLLED WELDING TRANSFORMER (WITH LOAD SERIES MOTOR)

Aravind Bhandare[1],Suyog Borge[2],Kalyani Jadhav[3],
Akshay Kamble[4],Rehana Mulla[5], Neha Shinde[6]

Assistant Professor, Electrical Engineering Dept, SETI, Panhala, Maharashtra, (India)[1]
Students, [2,3,4,5,6] Electrical Engineering Dept, SETI, Panhala, Maharashtra, (India)

I. INTRODUCTION

Generally a welding transformer is a step-down transformer. In welding transformer there are generally current is controlled by using

i)Choke

ii)By using moving core.

In welding transformer choke is connected in series with the secondary circuit in order to control or vary current. Also choke can absorb voltage fluctuations choke is important for stability of arc.

In case of Hand methods of arc welding usually a current range of 60 Amps to the 250Amp at a voltage 30 to 40 Volts for a good welder.

As per standard 100 Volt is maximum open circuit voltage for the welding. By using choke to vary or control current the separate space is required. Now again we can control current by moving core that means we can vary flux linking with secondary ,so current is vary flux in proportion with flux.But

separate mechanism required to move the core specifically. The welding arc characteristics are negative ,by studying the arc characteristics widely,it is known that the different types of rod requires different voltage ranges & also current range.Normal welding rods that are used for steel work required to strike & maintain arc is [40-60 V,60-80,80-100V].

Welding transformer now available in market that has features of control both voltage & current & if we provide tapping to secondary side & current by choke it is too much space is required for that to achive both the feature i.e. current & voltage control following design is suitable.

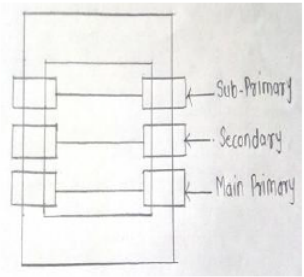

Fig No.1.Construction Diagram

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International Journal of Engineering Research and Technology. ISSN 0974-3154 Volume 10, Number 1 (2017)
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Mechanical and Corrosion Studies of Magnesium Based Biodegradable Medical Implants

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Abstract
The biodegradable materials had become significantly advanced since 30 years. The "Biodegradable Metal" itself defines the metals & alloys which safely corrode itself in-vivo. As magnesium its alloys shows great potential as a biodegradable metal, it is preferred to use among Mg based, Fe based, Zn based biomaterials. The present review focuses on in-vitro studies of mechanical and corrosion behavior of AM50 & AZ81 magnesium based alloys as a biodegradable implant.

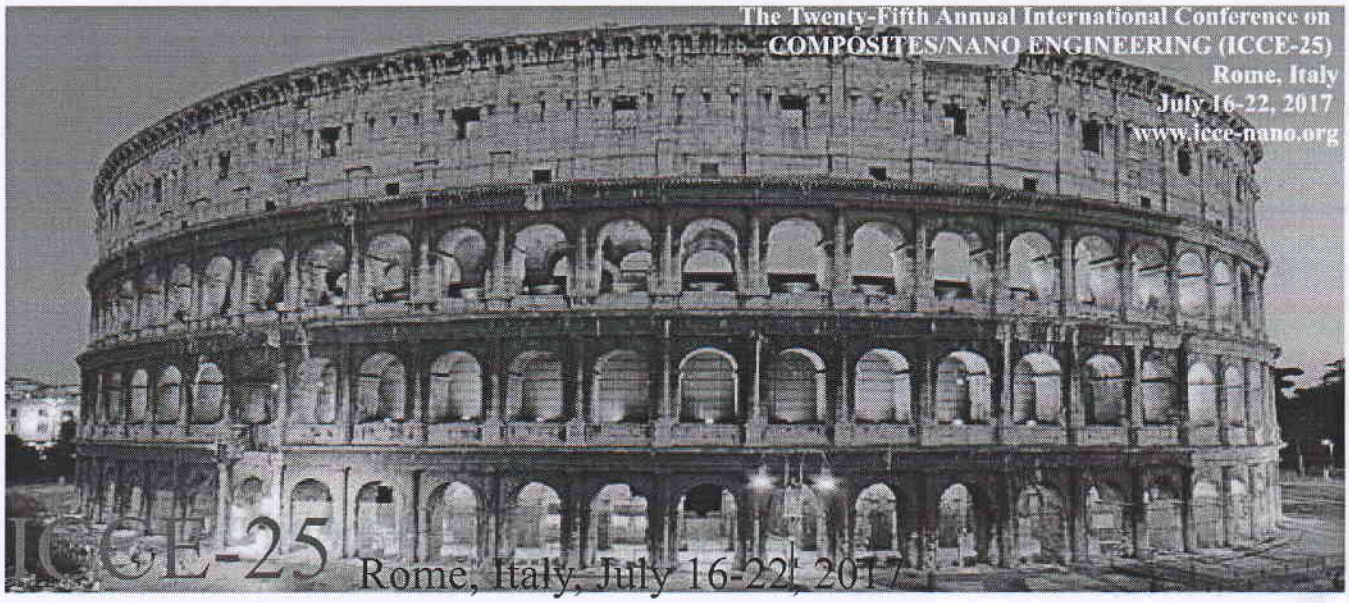
Keywords: Biomedical implants, Mechanical, corrosion, Degradation, Mg Alloys.

Introduction
Yearly, disease and accidents causes millions of people suffer from bone fracture. However, although the current treatment using traditional nondegradable biocompatible materials. In the present, the biodegradable implants are being considered as the alternative for traditional implants. Biomaterials are mainly classified as polymers, ceramics, bone cements. But the mechanical implants prefer for their mechanical strength, toughness with nontoxicity and allergy free elements are composed [1]. Also the biodegradable provides the temporary support for the facture and starts degrading with matting new tissue formation. The presence of scaffold can serve as substrate for seeded cells facilate new tissue formation at site of injury. Incorporation of drag or bioactive molecule may also accelerate new tissue formation [1,2].

The designing of biodegradable implants consist following important factors firstly material should be degrade over definite period. Secondly, the material should possess sufficient mechanical strength to sustain and also the scaffold function of material as temporary support should allow space the newly generated tissue to replace the defect[3]. As the magnesium and its alloy shows preferable mechanical property and excellent compatibility with human bone are greatly used as biomaterial for the human body implants.

Mg and its alloys possess active chemical property and also it is liable to be corroded in physiological environment after implementation without causing any toxicity and side effects. Mg plays important role in metabolism of mineral substance of bone by boosting the formation of teeth and bone. Mg and its alloy are suitable to be used in the blood vessel interventation and orthopedic due to close elastic module with human bone. With help of process such as extrusion which provides three dimensional compressive stresses, Mg alloy with high modulus of elasticity is obtained [4,5].

After several studies, it comes to know that the corrosion behavior of Mg is greatly depends on the alloying element and their microstructure. The present work aims to compare the in vitro electro chemical degradation behavior of biocompatible magnesium alloy such as AZ81 and AM50 etc. alloy the corrosion behavior was studied through analysis of corrosion resistance variation with immersion time using Electrochemical Impedance Spectroscope (EIS) test. Corrosion resistance of these treated samples in solution simulating the physiological environment will be evaluated by



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Re: acceptance letter

Dr. Mrityunjay Doddamani
Assistant Professor, Department of Mechanical Engineering
National Institute of Technology Karanataka,
Surathkal, P.O. Srinivasanagar 575 025 Mangalore,
D.K., Karanataka, INDIA

February 17, 2017

Dear Dr. Mrityunjay Doddamani:

The scientific committee has evaluated your submission and finds it a very exciting contribution to the field of composite materials. I am happy to inform you that your paper entitled "**Tribological response of Cenosphere/Epoxy syntactic foams**" is accepted for **ORAL presentation** in 25th Annual International Conference on COMPOSITES/NANO ENGINEERING (ICCE-25) being held in Rome, Italy during **July 16-22, 2017**.
http://www.icce-nano.org/

We invite you to attend and present your research findings in this conference. Please bring this letter to the concerned Embassy or Consulate to obtain the necessary travel VISA.

Please let me know if you need any other assistance.

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Tribological response of Cenosphere/Epoxy syntactic foams

Kiran Shahapurkar[1], Mrityunjay Doddamani[1*], G. C. Mohan Kumar[1] and Nikhil Gupta[2]

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[2]Composite Materials and Mechanics Laboratory, Mechanical and Aerospace Engineering Department, Tandon School of Engineering, New York University, Brooklyn, NY 11201 USA.

Introduction

Weight sensitive structures demand higher specific properties favouring usage of lightweight polymer matrix composites. Hollow particles when embedded in matrix resin form the composites known as syntactic foams, which are finding applications in marine and aircraft structures [1, 2] owing to higher damage tolerance coupled with lower weight. Increasing use of syntactic foams in automotive and aerospace applications requires understanding of their tribological properties. Studies on tribological response of polymer matrix syntactic foams are relatively scarce. Further, large number of parameters involved in wear testing necessitates a clear understanding of structure–property correlations. Fly ash is a low cost hollow filler, which is recovered from industrial waste. If used as filler, it can help in improving environment. Detailed investigations of hollow particle filled composites are desired to understand the mechanisms of wear and damage as considerable differences are likely as compared to solid particles.

Materials and Methods

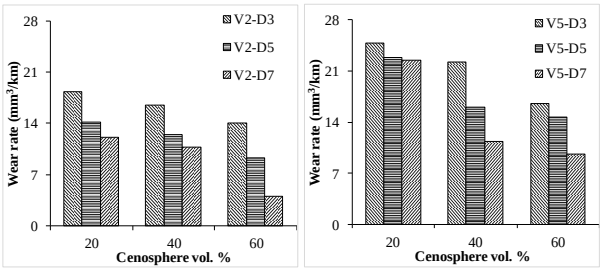
LAPOX L-12 epoxy with a room temperature curing polyamine hardener K-6 containing a tetra-amine functional group (Yuje Marketing, Bangalore, India) is used as matrix having density of 1192 kg/m^3. Fly ash cenospheres obtained from Cenosphere India Pvt., Ltd., Kolkata, India, are used as the filler material having true particle density of 920 kg/m^3. Measured quantity of epoxy resin and cenospheres are gently mixed until uniform slurry is obtained. Subsequently, hardener is added to the mixture prior to pouring in the aluminium mold. Mix is allowed to cure for 24 h at room temperature. The mold is coated with silicone release agent for easy removal of cast slabs. Four types of syntactic foams are prepared with varying cenosphere content 20, 40 and 60 by vol.%. From the cast slabs, test specimens of dimensions 12×12×25.4 mm^3 are cut using a water jet cutter. Dry sliding wear tests are carried out under ambient temperature using a pin-on-disc tribometer (DUCOM, Bangalore, India) according to ASTM G99-05 (2010) standard. A disc made of hardened chromium steel (EN-31 hardness 62HRC) is used as the counter body against sample. The tests are conducted on a track diameter of 120 mm. Wear rate is investigated for two variable input parameters namely, sliding velocity, 'V'(2 and 5 m/s) and sliding distance, 'D' (3, 5 and 7 km). Samples are coded as per VX-DY convention, where X and Y are values of the respective input parameters. All the tests are conducted at applied load (L) of 50 N.

Results and discussion

Wear rate

Figure **1** presents representative plots of wear rate as a function of filler content at different sliding velocities. As the filler content increases wear rate decreases for all the sliding distances for both, 2 and 5 m/s sliding velocities (Figure 1). Cenospheres comprise ceramic materials such as alumina and silica. Higher filler loadings resists wear by replacing more matrix in the system with ceramic content.

The wear rate is observed to be higher at higher sliding velocity, which is attributed to increase in frictional forces increases. Features for wear surfaces for 20 and 60 cenosphere vol.% syntactic foams tested at 2 and 5 m/s are presented in Figure 2 and Figure 3, respectively. Greater plastic flow is observed on the specimens tested at higher sliding speeds, which is likely due to increased shaer forces leading to plastic deformation of matrix.



(a) (b)

Figure 1. Wear rate at different cenosphere volume fractions at sliding velocity of (a) 2 and (b) 5 m/s.

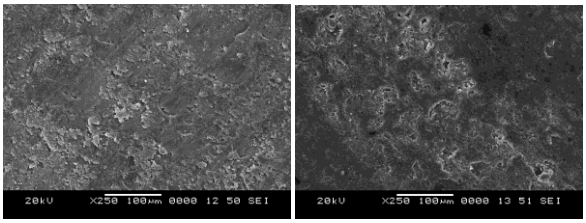


Figure 2. SEM of representative (a) 20 and (b) 60 vol.% cenospheres syntactic foam specimens tested at 2 m/s.

PPMC-013

Quasi static compressive response of cenosphere/epoxy Syntactic foam

Kiran Shahapurkar, G.C.Mohan Kumar, Mrityunjay Doddamani

Department of Mechanical Engineering
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Abstract

Quasi static uni-axial compressive properties of epoxy matrix syntactic foams containing cenosphere filler are investigated. Syntactic foams are prepared by stir casting process. Effect of surface modification and volume fraction on the compressive strength, modulus and energy absorption of syntactic foams is studied. In the present work, syntactic foams containing up to 0, 20, 40 and 60 by vol. % of cenospheres are studied. Quasi-static compression tests are conducted at a constant strain rate of 10-1 s-1. It is found that the strength and modulus decreases linearly with increase in filler content for foams reinforced with as received cenospheres as compared to pure samples. However, foams prepared using treated cenospheres possess higher strength and modulus than those prepared with as received cenospheres and comparable with pure samples. Further, with increase in filler content, the energy absorption capacity of as received syntactic foams decreases and increases for treated syntactic foams compared to pure samples. Fractographic analyses are done to understand the failure mechanisms in these foams.

1. Introduction

Syntactic foams are a particular class of foam structure, consisting of hollow spheres embedded in a continuous matrix. These foams are classified as closed-cell foams because the porosity in these materials is enclosed within hollow particles. The closed-pore structure gives advantages of low density, low moisture uptake, and excellent mechanical properties [1]. Syntactic foams are often used as core materials in sandwich composites because they ensure high rigidity and compressive strength of sandwich structures [2]. These foams in particular are used in marine and aerospace applications due to the light weight and

Analysis of Tensile properties of cenosphere/epoxy syntactic foams

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Abstract

Syntactic foams are closed-cell low-density composites targeted for applications in marine structures due to their naturally buoyant behavior and low moisture absorption. Light weight of these foams has been beneficial in weight sensitive applications, thermal insulation of pipelines in oil and gas industry. Methods have been developed to tailor the mechanical properties of syntactic foams over a wide range, which is a significant advantage over other traditional particulate and fibrous composites.Syntactic foams are extensively studied in the published literature for compressive, flexural and hygrothermal properties. However, studies on tensile strength of these materials are scarce.Interest in utilizing the advantage of low density of syntactic foams in other applications such as aerospace structures and sports equipment has made it necessary to characterize these materials for tensile loading and study various parameters affecting their properties.

In the present work, industrial waste fly ash cenosphere is used as a filler in epoxy resin to develop eco-friendly syntactic foams using conventional casting route. Further, cenospheres are silane treated to compare the effects of as received and surface modified cenospheres on tensile behaviour. The present work characterizes syntactic foams containing up to 0 and 40 by vol. % of cenospheres. Effect of surface modification and volume fraction on the tensile strength and modulus of syntactic foams is studied. Modulus is seen to be increasing with cenosphere content wherein strength decreasesgradually. Elastic Modulus for untreated and treated syntactic foams are 75 and 111% higher respectively, whereas tensile strength of treated syntactic foams 8% lower, as compared to neat epoxy samples. Microstructure analysis is carried out using SEM to understand the behavior of syntactic foams.Higher modulus of hollow particles and few survived particles at higher filler loadings increases modulus of foam. Poor interfacial bonding between the constituent compromises on the strength values. Surface modification of cenospheres has lead to significant increase of modulus and decrease in strength compared to untreated foams and neat samples.

References

1. Nikhil Gupta, Ruslan Nagorny, *J. ApplPolymSci*, 2006,102, 1254.
2. Matthew Labella, Steven E. Zeltmann, Vasanth Chakravarthy Shunmugasamy,Nikhil Gupta, Pradeep K. Rohatgi, *Fuel*, 2014, 121, 240.
3. Lorenzo Bardella, Francesco Genna, *ijsolstr*, 2001, 38, 7235.
4. B.R. Bharath Kumar, MrityunjayDoddamani, Steven E. Zeltmann, Nikhil Gupta, Seeram Ramakrishna, *Materials and Design*, 2016, 92, 414.

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Flexural Response of Fly Ash Cenosphere/Epoxy Syntactic Foams

Kiran Shahapurkar[1, a], Vikas Bapurao Chavan[2, b], Mrityunjay Doddamani[3, c], and G. C. Mohan Kumar[4, d]

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In the present work industrial waste fly ash cenosphere 40% by volume is used as a filler in epoxy resin to develop eco-friendly syntactic foams using conventional casting route. Cenospheres are silane treated to compare the effects of as received and surface modified cenospheres on flexural behavior. Neat epoxy samples are prepared and tested under similar conditions for comparison. Modulus is seen to be increasing with cenosphere content wherein strength decreases. Elastic Modulus for untreated and treated syntactic foams are 24 and 38% higher respectively, whereas strength of treated syntactic foams 38% lower, as compared to neat epoxy samples. SEM is carried out to understand structure-property correlations of the syntactic foams. Higher modulus of hollow particles and few survived particles at higher filler loadings increases modulus of foam. Poor interfacial bonding between the cenospheres and epoxy compromises on the strength values. Surface modification of cenospheres has led to significant increase of modulus and decrease in strength compared to untreated foams and neat samples.

Keywords: Syntactic foams; flexural; surface modification; cenospheres.

High Velocity Impact Damage Investigation of Carbon/Epoxy/Clay Nanocomposites using 3D Computed Tomography

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A Series of projectile impact tests have been carried out on cross ply carbon/epoxy and different weight percentages (1%, 3% and 5%) of nanoclay dispersed carbon/epoxy laminated composites of two different thicknesses (3 mm and 5 mm) with a 9.8 mm diameter hemispherical shaped mild steel projectile for determining the ballistic limit, residual velocity and energy absorption. These experiments are conducted using a Single stage high speed air gas gun. Using the high-speed camera, the projectile path is captured. Velocities far higher than the ballistic limit such as 165 m/s, 195 m/s and 220 m/s are considered for investigation of damage mechanisms. The traditional CFRP composites show poor impact resistance due to their negligible plastic deformation as compared to metals. The impact performance of these composites can be enhanced by the clay effect. However, the effect of nanoclay dispersion is found relatively lower as the velocities are increased far higher than ballistic limit velocities. The optimum clay content is proposed in the present investigation. There is a significant improvement in impact properties, as the clay content increases from 0 wt% to 3 wt% but beyond 3 wt%, the properties degrade which is due to the high stress concentrations attributed to the clay clustering in the higher clay

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Permanent magnet bearings for high speed rotating machinery: A review of Analytical, FEA and Experimental approaches

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Abstract-**The most suitable solution to improve the system efficiency in high-speed applications is by the utilization of the contact free feature of magnetic bearings. In this paper, first a detailed review on two and three-dimensional analytical approaches for evaluating force and stiffness in Permanent Magnet Bearings (PMB) is presented. Although the solution results of analytical equations are accurate, but might be difficult to use for complex configurations, hence the researchers have used the finite element method for the analysis of PMB. Then, Finite Element Analysis (FEA) approaches of PMB made of ring magnets are discussed in depth. Furthermore, experimental methods for determining the force exerted by outer rings on inner rings as well as use of PMB in different applications such as cryogenic turbo compressors, turbo molecular pumps and energy storage flywheels is presented. Finally, a brief review of dynamic analysis of the rotor supported by the PMB is presented.**

Keywords— permanent magnet bearing, rotordynamisc, finite element analysis, analytical equations

I. INTRODUCTION

A bearing is a machine element that permits constrained relative motion between two parts. The relative motion is typically either rotation or linear movement in nature. The selection of the most suitable bearing for a particular application depends upon the following characteristics: the load capacity, speed limit, frictional loss, stiffness, damping, maintenance and lifespan. The use of high-speed rotating machinery such as vacuum pumps, turbo molecular pumps, energy storage flywheels is increasing day by day and a selection of the most suitable bearings for such applications must be done carefully. The ideal requirements of high-speed applications are contactless rotation, no lubricants, no mechanical wear and tear, largely maintenance-free, high reliability, large range of speeds, high efficiency, low vibration and low noise level. Rolling-element bearings, fluid film bearings and magnetic bearings could be the possible choice as supporting devices for general rotating machines. However, the use of rolling-element and fluid film bearings in high-speed applications is limited mainly due to the following characteristics:

- At high-speed, the life of ball bearing is very limited due to friction. In addition, friction introduces mechanical losses and affects the efficiency of the system.
- In specific applications such as vacuum pumps and space vehicles provision of lubrication is difficult.
- A well scheduled maintenance is required to avoid failures and proper functioning of the bearings.

In comparison to conventional bearings, magnetic bearings are contact free bearings wherein the rotor is levitated by the generated magnetic field. The contact free feature of magnetic bearings offers attractive advantages like friction free and lubrication free operation, low maintenance and long life. These features lead to decisions that "the magnetic bearings could be the best choice for high-speed applications".

Magnetic bearings are one of the advanced types of bearings with interesting characteristics such as contact-free, lubricant free, no maintenance, tolerable against vacuum, low losses and very high rotational speeds. Disadvantages of magnetic bearings are: complexity in design and high initial cost.

Magnetic bearings may be classified into two major categories: Active Magnetic Bearings (AMB's) and passive magnetic bearings. Active magnetic bearings include electrical and electronic equipments and they allow to control dynamic behavior of the rotor during the operation. In passive magnetic bearings, rotor levitation is achieved without any external energy source as well as complex feedback control systems. Moreover, passive magnetic bearings are low cost products and need less maintenance as compared to active magnetic bearings. A detailed description of various types of magnetic bearings is presented by Schweitzer et al. [1]. AMBs are used in many applications such as turbo pumps, milling spindles, flywheel energy storage systems and artificial heart pumps [2-5] to support the rotor. Advantages of active magnetic bearings are: contact free, high load capacity and actively controlled

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Abstract

A Rack and Pinion gears for a steering system of a typical car has been designed, developed using Nylon 6/6 and DELRIN materials as per the American Gear Manufacturing Association standards and with the standard machining processes respectively. The analysis and comparison include the study of various properties of rack and pinion with Nylon 6/6 and

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विषय पर आयोजित औद्योगिकी इंजीनियरिंग और प्रौद्योगिकी प्रबंधन राष्ट्रीय सम्मेलन NCIETM 2016 मे **शोध पत्र** प्रस्तुत किया।

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The paper titled **Project Risk Management (PRM) – A literature review**

is presented by Muzammil Bepari in the

National Conference on Industrial Engineering and Technology Management NCIETM 2016 on

"Enhancing National Competitiveness: Role of Industrial Engineering and Technology Management",

at NITIE, Mumbai, India from November 17-19, 2016.

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2016 International Conference on Automatic Control and Dynamic Optimization Techniques (ICACDOT)
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An Agro Advisory For Pomegranate Field Using Wireless Sensor Network

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***Abstract*—In India sustainable agriculture development is essential to meet food demands, economic growth and poverty reduction. Climate change having adverse effect on agriculture and traditional practices followed are planting, fertilizing and harvesting against the predetermined schedule. Precision agriculture can be used to mitigate the climate change. The work objective is optimal usage of water in irrigation, proper nutrient management to plant and avoid crop losses due to diseases and pests with proper scheduling of sprays. In this context, we have proposed an agro advisory system for the pomegranate field. Wireless sensor network is deployed on field and will continuously monitoring real time environmental, soil, hydrological and crop specific parameters. Those are important for growth, productivity and quality in agriculture. An agro advisory will be disseminated to the farmers according to real time field conditions via SMS and email. The experimental result analysis of proposed system shows improvement over traditional followed methods.**

Keywords: Agro Advisory, Precision Agriculture, Wireless Sensor Network (WSN)

I. Introduction

India is leading country for pomegranate production. In last decade, there is sizable growth in area and production. Pomegranate exportation from country has increased by 3-5 times in this period. It can be taken under varied conditions of country but better in arid and semi-arid regions. Also it is one of the fruit crop taken in semi-arid and arid regions of world. Pomegranate has number of salient features which distinguish it from others. It has to built-in capability to withstand drought, moisture deficit, heat and hostile climate. Due to versatile adaptability, hardy nature, steady but high yields, better keeping quality, and therapeutic values and possibilities to throw the plant into rest period when irrigation potential is normally low, increases the chances for increasing area under pomegranate in country. It has immense nutritional, medicinal and economical value[1][2].

Crop losses for pomegranate due to diseases and pests are quite normal in case of semi-arid region conditions. Bacterial blight, thrips, fruit borer and wilt in pomegranate are considered powerful attacks leading to economical loss and force farmers to repetitive sprays. Figure 1 shows the major diseases and pests of pomegranate. Agriculture environment is dynamic entity and changing continuously. Ground water depletion, soil erosion, attack of new pest and diseases, fragmentation

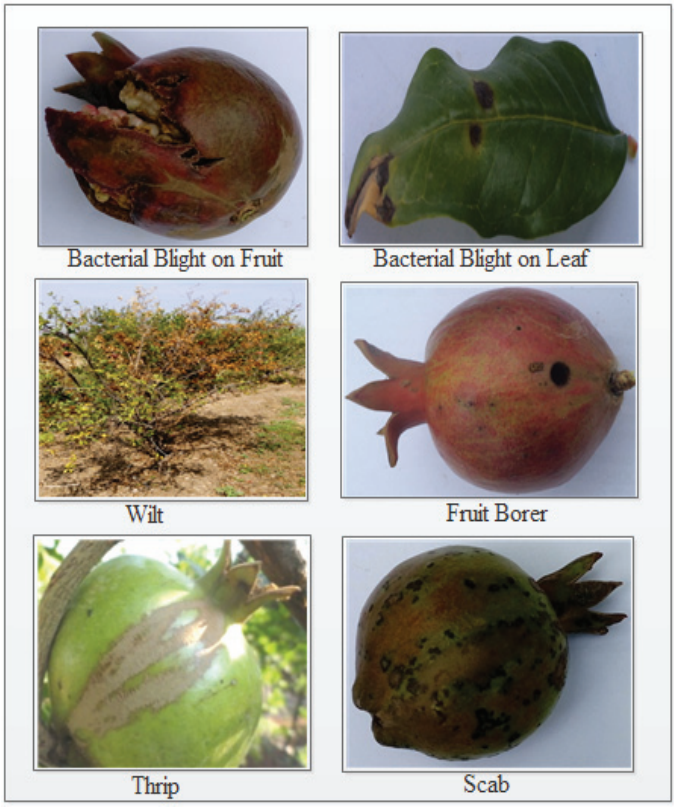

Fig. 1. Diseases and pests of pomegranate

of land, rural-urban migration and power supply availability for farm are some of the new challenges presently being encountered in the agricultural sector. To overcome these issues we have proposed system called an agro advisory. Advisory contains the recommendations to the farmer related to water irrigation, nutrient management and spray scheduling management for diseases and pests with proper application. It issues the advisory to the farmer by considering different parameters and finally application of that on field. As precision agriculture suggest specific production over particular place, data collection (weather, soil, water, equipment and labor costs) and making decision for small piece of field. Decision making will be done on the basis of real time information collected and not based on some hypothetical conditions or on

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2nd NATIONAL CONFERENCE ON EMERGING TRENDS IN CHEMISTRY AND MATERIALS SCIENCE

Theme: Chemistry / Materials Science

Potassium ferrocyanide promoted an efficient synthesis of benzoxazoles and benzothiazoles under solvent free condition

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Abstract: A mild and efficient method has been developed for the synthesis of 2-Substituted benzoxazole and benzothiazole from condensation of aldehyde and 2-aminophenol or 2-aminothiophenol via oxidation of carbon-nitrogen bond. Potassium ferrocyanide catalyzed one-pot procedure is efficient and allows short reaction times, easy workup, and good yields. Thus, we describe here a method for quick preparation of benzoxazoles & benzothiazoles.

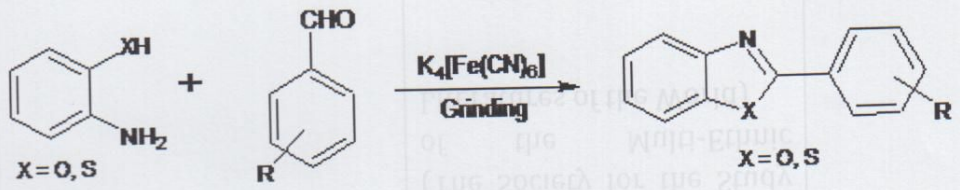

Figure: Synthesis of benzoxazoles and benzothiazoles

Synthesis of novel fluorogenic probe for detection of persulphate ion in water-ethanol medium

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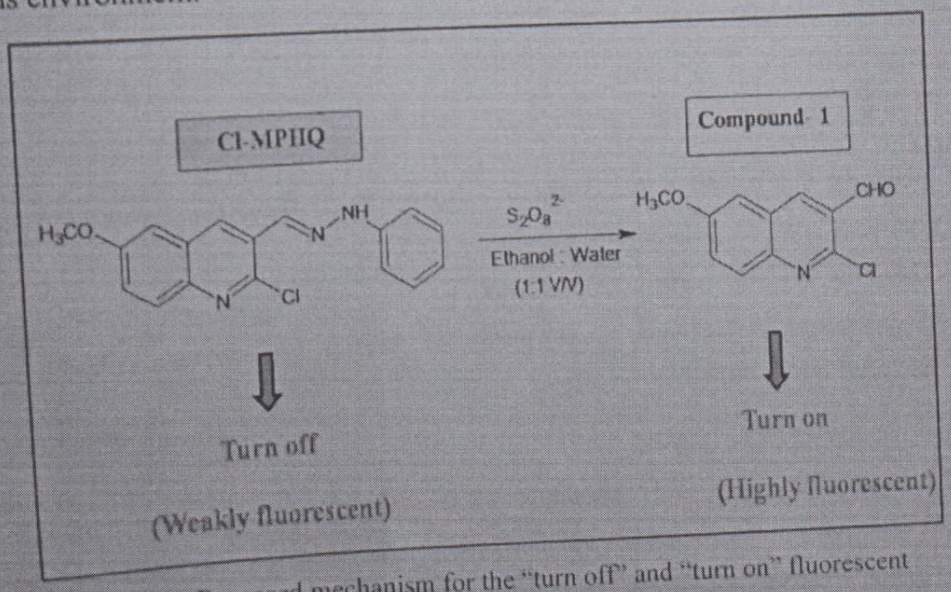
[1] Department of Chemistry, Krishna Mahavidyalaya, Rethare Bk. Karad-415108
[2] Department of Chemistry, Sanjeevan Engineering and Technology Institute, Panhala, Kolhapur-416201

Abstract

A novel probe 2-chloro-6-methoxy-3-phenylhydrazone quinoline (Cl-MPHQ) for detection of persulphate was synthesized, which displays an extreme selectivity for persulphate over other anions examined in water-ethanol medium. The method was based on selective cleavage of C=N bond in Cl-MPHQ by persulphate and switching on the fluorescence of parent compound 2-chloro-6-methoxyquinoline-3-carboxyaldehyde (compound-1) by its regeneration. This process leads into a dramatic increase in fluorescence intensity of the reacting solution. Because of the oxidizing property of the persulphate under the selected experimental conditions, the proposed probe shows excellent selectivity towards persulphate ion over other anions. The method is simple, sensitive and can be widely applicable for the selective detection of persulphate ion in an aqueous environment.



Scheme: Proposed mechanism for the "turn off" and "turn on" fluorescent changes in Cl-MPHQ after addition of $S_2O_8^{2-}$.

ISBN: 818836053-8

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PROPERTIES AND EFFECTS OF COPPER SLAG IN CONCRETE

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Abstract: Copper slag is a by-product obtained during matte smelting and refining of copper. This work reports an experimental procedure to investigate the effect of using CS as partial replacement of sand. Six series of concrete mixtures were prepared with different proportions of CS ranging from 0% to 100%. The test results of concrete were obtained by adding CS to sand in various percentages ranging from 0% to 100%. All specimens were cured for 7, 28, 56 days before compression strength test. The results indicate that Compressive strength and flexural Strength is increased due to high toughness of copper slag.

Keywords: waste, Copper slag, compression strength, flexural Strength.

I. INTRODUCTION

The amount and type of generated waste has grown as the world population increases. Numerous waste materials result from manufacturing, sewage treatment plants, industries, households, and mining. Many of the wastes produced today will remain in the environment for a long time. At the beginning of this industrialization process, not enough attention was given about the state of the environment; assumptions were made that the nature has the capacity to restore the resources we extract and accept what we throw into it. Copper slag is a by-product obtained during matte smelting and refining of copper. One of the greatest potential applications for reusing copper slag is in cement and concrete production. Many researchers have investigated the use of copper slag in the production of cement, mortar and concrete as raw materials for clinker, cement replacement, coarse and fine aggregates. The use of copper slag in cement and concrete provides potential environmental as well as economic benefits for all related industries, particularly in areas where a considerable amount of copper slag is produced.

1.2 Availability of Natural Sand as Fine Aggregate:

In the last 15 years, it has become clear that the availability of good quality natural sand is decreasing. The research emphasizes on the use of material to be replaced by natural sand which will give new dimension in concrete mix design and if applied on large scale would revolutionize the construction industry by economizing the construction cost and enable us to conserve natural resources.

II. MATERIALS AND METHODS

2.1 Cement

Ultra tech 53 grade ordinary Portland cement is used for this study. This cement is the most widely used in the construction industry in India. The different property of cement is shown in table below. It conforms to various standard test as per IS recommendation.

Table 2.1 Properties of Cement

Property	Average value for OPC used in investigation	Standard value for OPC
Specific Gravity	3.15	-
Consistency (%)	31.5%	-
Fineness By Dry Sieving	8%	<10%
Initial Setting Time (Min)	48	>30
Final Setting Time (Min)	225	<600
Soundness (mm)	2.8	<10
Compressive strength (N/mm^2)		
3-days	28.7	>27
7-days	39.63	>37
28-days	55.94	>53

2.2 Fine Aggregates

The sand particles should be free from any clay or inorganic materials and found to be hard and durable.

2.3 Coarse Aggregates

Coarse aggregates of 10mm and 20mm size is used for the study which is taken from Shiroli MIDC area Kolhapur.And natural sand of river bed is used confirming to grading zone –I of table 4 of IS 383 were procured from local river in Maharashtra.

2.4 Plastizers

Emceplast BV Plastizers is used as directed by the manufacture to improve the workability of fresh concrete mix.

2.5 Water

Water gives strength to cement and workability to the concrete. Drinking water is used for casting and curing of the concrete blocks.

2.6 Physical properties

The physical properties of coarse fine aggregates and copper slag are determined.

A STUDY ON PROPERTIES AND EFFECTS OF COPPER SLAG IN CONCRETE

M. V. PATIL

Applied Mechanics Department, S. V. National Institute Of Technology, Surat, Gujarat.

Abstract- Some of the industrial by-products have been used in the construction industry for the production of concrete. Copper slag is one of the materials that is considered as a waste material which could have been used in construction industry as partial replacement of either cement or aggregates. For this research work, M30 grade concrete was used and the tests were conducted for variousproportions of copper slag replacement with sand of 0%, to100 % in concrete. The obtained results were compared with those of control concrete made with ordinary Portland cement and sand.

Keywords- Copper Slag, Compressive Strength, Split Tensile Strength.

I. INTRODUCTION

The amount and type of generated waste has grown as the world population increases. Numerous waste materials result from manufacturing, sewage treatment plants, industries, households, and mining. While the volume of waste is continuing to grow, approval for facilities that provide proper disposal is becoming more difficult to obtain. Copper slag is a by-product obtained during matte smelting and refining of copper. One of the greatest potential applications for reusing copper slag is in cement and concrete production. The use of copper slag in cement and concrete provides potential environmental as well as economic benefits for all related industries, particularly in areas where a considerable amount of copper slag is produced. Out of the total cost of construction, building materials contribute to about 70% of cost in developing countries like India. Therefore, the need of the hour is replacement of costly and scarce conventional building materials by innovative, cost effective and environment– friendly alternate building materials. The new material should be environment–friendly and preferably utilize industrial wastes generated as a result of rapid industrialization. concrete is widely used construction material for various types of structures due to its durability. Natural resources are depleting worldwide while at the same time the generated wastes from the industry are increasing substantially.

1.2 Availability of Natural Sand as Fine Aggregate :

In the last 15 years, it has become clear that the availability of good quality natural sand is decreasing. Crushed aggregate, bottom ash, foundry sand and various by-products are replacing natural sand and gravel in most countries. The research emphasizes on the use of material to be replaced by natural sand which will give new dimension in concrete mix design and if applied on large scale would revolutionize the construction industry by economizing the construction cost and enable us to conserve natural resources.

II. MATERIALS AND METHODS

2.1Cement

Vasvadatta 43 grade ordinary Portland cement is used for this study. This cement is the most widely used in the construction industry in India. The different property of cement is shown in table below.

Table 2.1 Properties of Cement

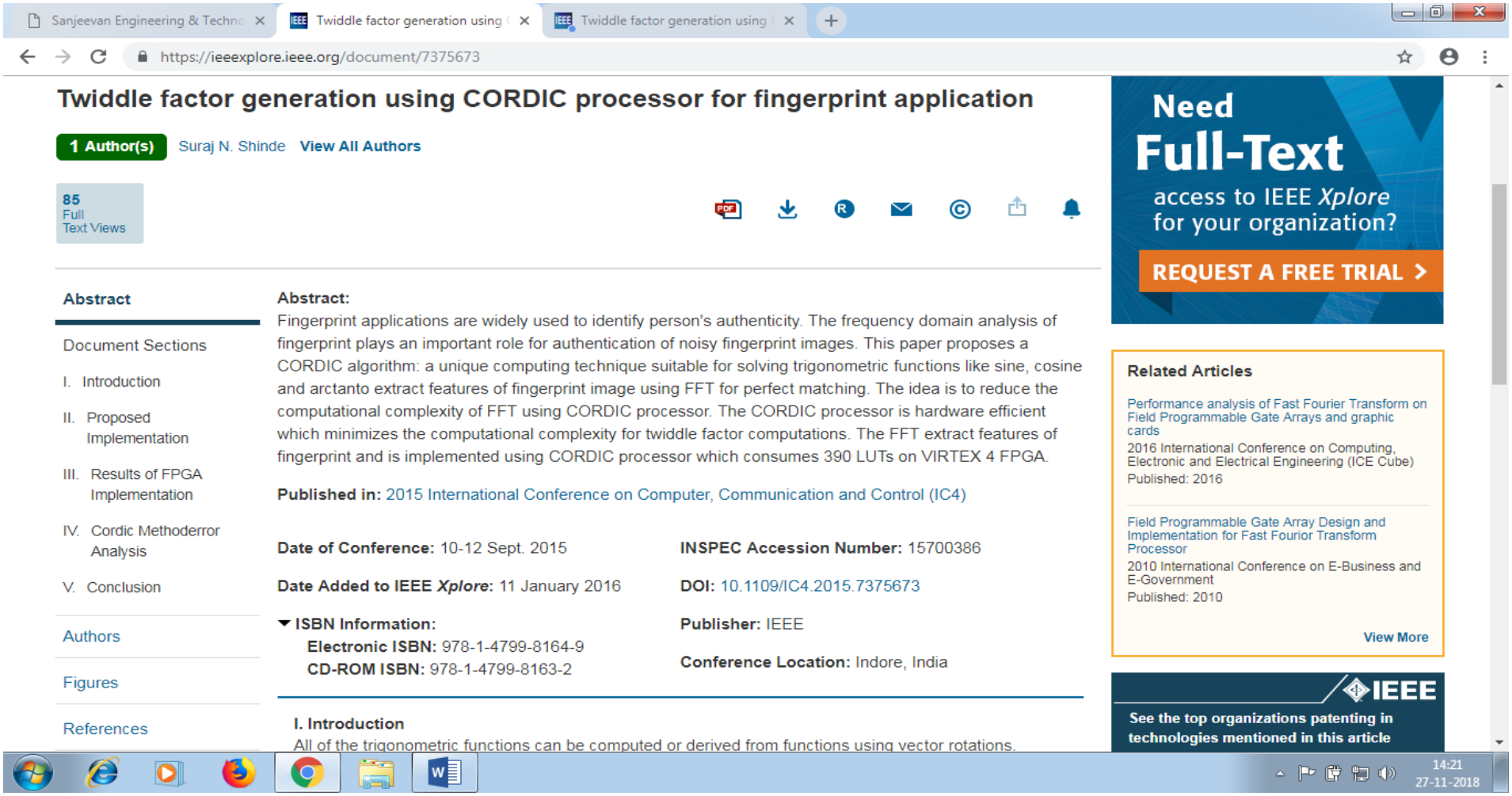
Property	Average value for OPC used in investigation	Standard value for OPC
Specific Gravity	3.05	-
Consistency (%)	29%	-
Fineness By Dry Sieving	7.8%	<10%
Initial Setting Time (Min)	45	>30
Final Setting Time (Min)	239	<600
Soundness (mm)	3.6	<10
Compressive strength (N/mm^2)		
3-days	24.7	>23
7-days	35.63	>33
28-days	45.94	>43

2.2 Fine Aggregates

The aggregate size is lesser than 4.75mm is considered as fine aggregate. The sand particles should be free from any clay or inorganic materials and found to be hard and durable.

2.3Coarse Aggregates

Coarse aggregates of 10mm and 20mm size is used for the study which is taken from Shiroli MIDC area Kolhapur.And natural sand of river bed is used confirming to grading zone –I of table 4 of IS 383 were procured from local river (Krishna river) in Maharashtra.The aggregate size is bigger than 4.75mm is considered as coarse aggregate. Dried angular coarse aggregate of 20mm maximum size and 10mm minimum size locally available was used for experiment.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II. Proposed Implementation
III. Results of FPGA Implementation
IV. Cordic Methoderror Analysis
V. Conclusion
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Abstract:
Fingerprint applications are widely used to identify person's authenticity. The frequency domain analysis of fingerprint plays an important role for authentication of noisy fingerprint images. This paper proposes a CORDIC algorithm: a unique computing technique suitable for solving trigonometric functions like sine, cosine and arctanto extract features of fingerprint image using FFT for perfect matching. The idea is to reduce the computational complexity of FFT using CORDIC processor. The CORDIC processor is hardware efficient which minimizes the computational complexity for twiddle factor computations. The FFT extract features of fingerprint and is implemented using CORDIC processor which consumes 390 LUTs on VIRTEX 4 FPGA.
Published in: 2015 International Conference on Computer, Communication and Control (IC4)
Date of Conference: 10-12 Sept. 2015
Date Added to IEEE Xplore: 11 January 2016
ISBN Information:
Electronic ISBN: 978-1-4799-8164-9
CD-ROM ISBN: 978-1-4799-8163-2
INSPEC Accession Number: 15700386
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Development of wireless embedded automation system for batch process

4 Author(s) Vivek Kadam ; Sharad Jadhav ; Mahesh Parihar ; Amit Karande View All Authors

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Abstract:
Presently industrial automation is growing rapidly emphasizing on centralized monitoring and independent control of sub-systems. This increases the number of remote sub-systems, which need intermediate communication. Another challenges observed are the reduction of system size and the maintenance cost with flexibility in operation. Regulatory, repetitive sequential control and interlocking are the typical mandatory requirements for batch execution and safety. This paper presents development and analysis of prototype system for wireless controlling and monitoring of the batch process experimental set-up. It proposes the efficient utilization of ARM micro-controller for the real-time monitoring and control of temperature and level. A graphical user interface using Visual Studio.NET is developed to operate the plant remotely. This facilitates the user to control, supervision and data acquisition through wireless communication between laboratory set-up and user interface via ZigBee protocol. Sensitivity and linearity analysis of RTD output and ultrasonic level sensor output is carried out citing fair linearity of RTD and level sensors calibration. Additionally errors in calculated and observed output at ADC are also investigated. The normal operation and safety interlocks have been identified, executed & validated to mitigate the hazardous events in plant considering the possibility of failure of temperature and level sensors. The proposed system is developed successfully and works in defined manner with overall satisfactory performance.

Published in: 2015 5th Nirma University International Conference on Engineering (NUiCONE)

Date of Conference: 26-28 Nov. 2015

Date Added to IEEE *Xplore*: 11 April 2016

ISBN Information:
Electronic ISBN: 978-1-4799-9991-0
CD-ROM ISBN: 978-1-4799-9990-3

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An optimal IMF selection based on fast BEEMD with Dlac analysis for detection of Polyp and Ulcer in WCE images

2 Author(s) Sharad. T. Jadhav ; Sanjay H. Dabhole **View All Authors**

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Abstract:
The main contribution of this paper is the presentation of a novel tool for WCE image analysis and classification by exploiting color-texture features. The proposed scheme has based on the ingenious combination of optimal selection of image components (IMFs) of BEEMD and DLac, applied on the green/red component of WCE images in order to identify ulcerations and polyp affected images from WCE images. Optimal IMF's of BEEMD was exploited to reveal the intrinsic components (IMFs) of the images in order to achieve data driven, Coefficient of standard Deviation and efficient SVM classifier to boost the distinctness between polyp and ulcer regions. However, DLac analysis facilitates to extract efficient texture characteristics. The proposed approach has evaluated on selected WCE images, captured from patients, depicting ulcer and polyp tissue. The optimum image components (IMFs) that contain the majority of texture information include IMFs 5- 8which produce 100% accuracy for ulcer images. Individual IMFs score up to 80 % classification accuracy, while their higher exploitation as a group enhances the detection rate up to 93.34% for ulcer and 90% for polyp tissue.

Published in: 2015 2nd International Conference on Electronics and Communication Systems (ICECS)

Date of Conference: 26-27 Feb. 2015
Date Added to IEEE *Xplore*: 18 June 2015
ISBN Information:
Electronic ISBN: 978-1-4799-7225-8
CD-ROM ISBN: 978-1-4799-7224-1
INSPEC Accession Number: 15220309
DOI: 10.1109/ECS.2015.7124905
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An efficient codec of 2D adaptive directional lifting based on CDF9/7 with improved SPIHT algorithm for lossy to lossless image coding

2 Author(s) Sanjay H. Dabhole ; Sharad. T. Jadhav View All Authors

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Abstract:
Lifting is an efficient algorithm to implement the discrete wavelet transform in order to overcome the drawbacks of the conventional wavelet transform that does not provide a compact representation of edges which are not in horizontal and vertical directions. The lifting scheme provides a general and flexible tool for the construction of wavelet decompositions and perfect reconstruction filter banks. It has been adopted in JPEG 2000. The paper follows this research line, improved SPIHT based on adaptive coding becomes analyzed and tuned with two dimensional Adaptive Directional Lifting based on CDF 9/7 has structured for lossy to lossless JPEG 2000 image coding. The proposed 2D-ADL scheme incorporates the directionally spatial prediction into the conventional lifting based on 9/7 wavelet transform and forms a novel, efficient and flexible lifting structure with proposed scaling coefficients. In order to obtain better compression on image edge, an improved Set Partitioning In Hierarchical Trees (ASPIHT) algorithm based on prior scanning the coefficients around which there were more significant coefficients was replaced with conventional SPIHT. Although, the proposed 2D-ADL based on CDF9/7 scheme followed by ASPIHT codec significantly reduce edge artifacts and ringing and outperforms the conventional 1D lifting scheme followed by SPIHT upto 12dB as reported.

Published in: 2015 2nd International Conference on Electronics and Communication Systems (ICECS)

Date of Conference: 26-27 Feb. 2015

Date Added to IEEE *Xplore*: 18 June 2015

ISBN Information:
Electronic ISBN: 978-1-4799-7225-8
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Hybrid Permanent Magnet and Foil Bearing System for Complete Passive Levitation of Rotor

Siddappa Iranna Bekinal, Tumkur Ramakrishna rao Anil, Sadanand Subhas Kulkarni and Soumendu Jana

Abstract This paper deals with the complete passive levitation for a typical Jeffcott rotor and rotation of the same at the speeds around 40,000 rpm. The passive levitation is achieved by supporting the rotor axially by a permanent magnet bearing and discrete bump foil bearings for the radial support. The permanent magnet bearing is made up of three pairs of ring magnets arranged in Halbach pattern. Bump foil bearings are designed for rotor weight to provide the radial support to the rotor system. The proposed rotor-bearing configuration is analysed using Finite Element Analysis (FEA) software (ANSYS) for rotor dynamic characteristics. The designed rotor bearing system is fabricated and tested up to the speeds of 40,000 rpm. The system response is acquired using advanced rotor-dynamic data acquisition system. The experimental results show that the rotor is completely airborne and stable at the desired speed.

Keywords Foil bearings · Permanent magnet bearings · Halbach structure · Passive levitation and rotor dynamics

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J.K. Sinha (ed.), *Vibration Engineering and Technology of Machinery*,
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Volume 46C, 2015, Pages 354-363

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AS-ICEECEBLORE-15064-242

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Chapter 90
Comparative Study of Prototype and Simulation of SVC for Transmission Congestion Management

Khatavkar Vrushali, Redekar Abhijeet and Dharme Anjali

Abstract In deregulated/restructured power system, congestion of electrical power is a major problem. The solution includes the management methodologies namely technical and pricing methods. The technical methods suggest the use of FACTS controllers to reduce the congestion without considering the economic matters. This work deals with designing a prototype of Static VAR Compensator (SVC). This SVC prototype comprises of 440 kV, 300 km modular transmission line model which operates on lab voltage i.e. 400 V, 50 Hz, and compensator consisting of three delta connected capacitors together with three delta connected air gap type linear inductors along with two anti-parallel thyristors. Modelling has been done considering two modes of thyristor i.e. when thyristor is ON and second when thyristor is OFF. Both modes are characterised by the time duration. With these two modes, two second order differential equations are derived and finally converted into second order state space model. This state space model will be helpful to predict the load voltage behaviour. SVC is modelled in MATLAB Simulink and simulation results are compared with the prototype results to validate the controller design parameters. The aim of this work is to enhance voltage stability and increase power transfer capability of the long transmission line using FC-TCR configuration of Static VAR Compensator.

Keywords Static VAR compensator (SVC) · Fixed capacitor thyristor controlled reactor (FC-TCR) · PID controller

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C. Kamalakannan et al. (eds.), *Power Electronics and Renewable Energy Systems*,

Morphometric Analysis of Kasari River Basin, Kolhapur District, Maharashtra, India

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Abstract: *- Morphometric analysis was done to determine the drainage characteristics of Kasari watershed using topographic maps. This watershed divides in to 3 sub basins. The drainage pattern of sub basins is dendritic and parallel. The basin includes highest 6 order stream is the role stream and the area covers 1177.50 Sq. Km. the analysis clearly indicates some relations among the various attributes of the Morphometric aspects of the watershed and helps to understand their role in sculpturing the surface of the region.*

Keywords: - sub watershed, Drainage pattern, dendritic, stream sculpturing.

1. Introduction :

Morphometry is the measurement and mathematical analysis of the configuration of the earth's surface, shape and dimensions of its landforms (Agarwal, 1998; Obi Reddy et al., 2002). The quantitative analysis if the drainage basin is an important aspect of characteristics of watershed (Strahler 1964). The Morphometric study of the drainage basin is aimed to acquire accurate data of measurable features of streamnetworkof the drainage basin. Drainage provides basics to understand initial slope, inequalities in rock hardness, structural control, geological and geo-morphological history of the drainage. Drainage parameters to spatial relationship are streams or rivers which may be influenced in their erosion by inequalities of slope, soils, rock resistance, structure and geological history of a region. The drainage basin analysis is carried out quantitatively for three sub water shed. The quantitative drainage analysis is done aspect wise such as linear aspects, aerial aspects and relief aspects. The main aspect of the present study to derive the different drainage characteristics of the Kasari River watershed and to understand the relationship among them.

2. Study area:

The study area is located between North Latitudes $16^{0}30^{1}$ and $16^{0}55^{1}$ North and East Longitude $73^{0}40^{1}$ and $74^{0}15^{1}$. The studied area falls in the Survey of India Toposheet No. 47 H/13, 47 H/14, 47 L/1, and 47 L/2 of the scale 1:50000. The area experiences humid and subtropical climate having heavy rainfall from June to September. The temperature varies between 12^{0}C to 40^{0}C. Average annual temperature is 30^{0} C. During the rainy season the area receives moderate to heavy rainfall of the SW Monsoon. The average annual rainfall is 2685 mm. October to January are the months of pleasant climatic conditions and is regarded to be as a winter season.

The area is mostly covered by dense mixed jungle The Kasari river basin falls in the Deccan Basaltic province and is situated on Western Ghats. The trap basalt generally is characterized by thick tabular sheets of large aerial extent. The flows are horizontal with flat-topped hills having step like terraces. . The basalts of Kasari river basin are of two type according to Adyalkar (1984). They are (1) Aa type and (2) Pahoe hoe type. The former is of the major occurrence in the Kasari river basin. The Aa type basalt are further signified by presence and absence of vesicles that make them to be classified as (a) amygdaloidal basalt and (2) compact vesicular basalt. The amygdaloidal basalts are vesicular in nature and the majority of vesicles are partially or completely filled with zeolitic minerals. The loner portion of the flow unit is represented by compact basalt. The compact basalt is generally black but at places purple or greenish shades are noticed due to alterations. At some areas the red boles are observed along road cuttings as at Kololi phata. The flows of the area are of Aa type (Beaney et al. 1986). These shows a basal section having chilled basalt or greyish clinker with fragments of highly vesicular or dense purple trap cemented by zeolites. The nine Basaltic flows of approximately 60 m each in Kasari basin belongs to Panhala formation of Wai subgroup of Deccan basalts.

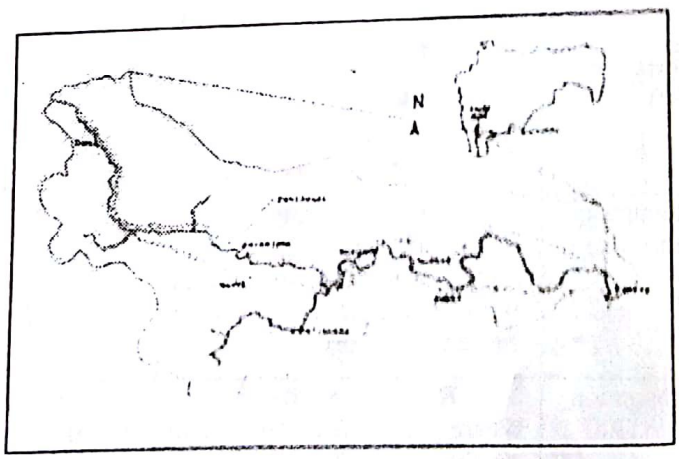

Fig 1 Drainage basin of kasari river, Kolhapur Maharashtra, India

3. Data used and methodology:

The Survey of India Toposheet No. 47 H/13, 47 H/14, 47 L/1, and 47 L/2 of the scale 1:50000 has been used for drainage map.. The different Morphometric parameters has been calculated by using formula for stream ordering method suggested by Strahler (1956)

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Organization: *Christ University Faculty of Engineering, Bangalore, India*

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PARAMETRIC STUDYOF THREE SPAN CABLE STRAYED BRIDGES

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Keywords: stiffness, cable stayed bridge, pylon moment, torsional girder moment

ABSTRACT: *The present work is deals with the Parametric Study of bridges by stiffness method. In this work moving load is considered and effect on cable stayed bridge girder and pylon is considered. For this three span cable stayed bridge are considered with box girder deck. The cable stayed bridge has light decks and the tensile cables as part of a closed force system. The compression within the deck and pylon are by balanced by tensile cables. It proved to be more economical for long spans as compare to other types of bridges. It is because of its simple form cable stayed bridges have gained significant importance in recent years due to their economic advantages, adaptability to regions with difficult access, aesthetic and also due to their minimal impact on environmentally sensitive terrain during the construction phase.*
In this work parametric study is carried out. For this various parameters considered those are side span to main span ratio, number of cables, cable stiffness, girder stiffness (i.e. width of girder constant and depth variable), cable configuration, and cross section shape of exterior girder of box girder. Considering these parameters maximum bending moment in the girder, maximum shear force, maximum axial force, maximum torsional moment, maximum pylon moment, maximum deflection in girder and pylon are found out. Thus in this work we have considered different parameters and these are studied through graphical representation so that we can know the variation in results obtained for all the parameters as mentioned above. For this three span cable stayed bridge are considered with box girder deck and analysis in SAP 2000.

1. INTRODUCTION

Bridges play very important role in development of human life. Bridge is an important element in a transportation system, as its capacity governs the capacity of system, its failure or reduced performance will result in serious disruption of traffic flow. Bridges enhance the growth of cities and aid social, cultural and economical improvements of the areas around them. Along with the social and economical development, the great demand on highway engineering is for construction of long span cable stayed bridges. More and more super long-

ISBN : 978-81-907287-0-6

Mechanical Properties of Concrete Containing Waste Glass Powder & Industrial Waste Sand

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Abstract- Foundry sand consists primarily of silica sand, coated with a thin film of burnt carbon, residual binder (Bentonite, sea coal, resins) and dust. Foundry sand can be used in concrete to improve it's strength & other durability factors. Foundry Sand can be used as a partial replacement of cement or as a partial replacement of fine aggregates or total replacement of fine aggregate and as supplementary addition to achieve different properties of concrete.

Recycling, disposal and decomposing of waste glass possesses major problems for Municipalities everywhere and this problem can be greatly eliminated by re-using waste glass as cement replacement in concrete. Moreover, there is a limit on the availability of natural aggregate and minerals used for making cement, and it is necessary to reduce energy consumption and emission of carbon dioxide resulting from construction processes, solution of this problem are sought thought usages of waste glass as partial replacement of Portland cement. Replacing cement by pozzolanic material like waste glass powder in concrete, reduces the workability. Therefore, the concrete containing waste glass powder needs to be investigated.

Index Terms— foundry sand, waste glass, concrete, curing compound

I. INTRODUCTION

It has been estimated that several million tons of waste glasses are generated annually worldwide. The key sources of waste glasses are waste containers, window glasses, window screen, medicinal bottles, liquor bottles, tube lights, bulbs, electronic equipments etc. Only a part of this waste glass can be used in recycling. The remaining waste glass cannot be used for any purposes. But recently the research has shown that the waste glass can be effectively used in concrete either as glass aggregate (as fine aggregate or as coarse aggregate) or as a glass pozzolana. The waste glass when grounded to a very fine powder shows some pozzolanic properties. Therefore the glass powder to some extent can replace the cement and contribute for the strength development. In this paper an attempt is made to find out the effect of temperature on the properties of concrete containing waste glass powder as pozzolana.

Metal foundries use large amount of sand as part of the metal casting process. Foundries successfully recycle & reuse the sand many times in a foundry. When the sand can no longer be reused in the foundry, it is removed from the foundry & it is termed as foundry sand. Like many waste products foundry sand has beneficial applications to other industries.

II. PREVIOUS WORK AND SATIATION

"Studies on Workability of Concrete Containing Waste Glass Powder a Pozzolana" By M. N. Bajad, C.D. Modhera and A. K. Desai, 2011

An attempt has been made to find out the workability of concrete produced by replacing the cement with waste glass powder in various percentages ranging from 5% to 40% in increments of 5% (0%, 5%, 10%, 15%, 20%, 25%, 30%, 35% and 40%.)

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Challenges in Concrete Containing Industrial Waste Sand & Waste Glass Powder

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Abstract-

Used-foundry sand is a by-product of ferrous and nonferrous metal casting industries. Foundries successfully recycle and reuse the sand several times in a foundry. When the sand can no longer be reused in the foundry, it is removed from the foundry and is termed used/spent foundry sand or Industrial Waste Sand (IWS). In an effort to utilize Industrial Waste Sand in large volumes, research is being carried out for its possible large-scale utilization in making concrete as partial replacement of fine aggregate.[7] Glass powder exhibits pozzolanic properties but is dependant upon fineness of the powder.[5] It is recommended that the utilization of waste glass powder in concrete as cement replacement is possible.[3] When glass is used in fine particle size (13 µm) as partial replacement for cement in concrete, it is estimated to undergo pozzolanic reaction that results in improved microstrcuture of recycled aggregate concrete through improvement in the quality of remnant mortar/paste attached to the surface of recycled aggregate that subsequently forms interface between recycled aggregate and new mortar in recycled aggregate concrete.[4]

Foundry sand consists primarily of silica sand, coated with a thin film of burnt carbon, residual binder (Bentonite, sea coal, resins) and dust. Foundry sand can be used in concrete to improve it's strength & other durability factors. Foundry Sand can be used as a partial replacement of cement or as a partial replacement of fine aggregates or total replacement of fine aggregate and as supplementary addition to achieve different properties of concrete.

Recycling, disposal and decomposing of waste glass possesses major problems for Municipalities everywhere and this problem can be greatly eliminated by re-using waste glass as cement replacement in concrete. Moreover, there is a limit on the availability of natural aggregate and minerals used for making cement, and it is necessary to reduce energy consumption and emission of carbon dioxide resulting from construction processes, solution of this problem are sought thought usages of waste glass as partial replacement of Portland cement. Replacing cement by pozzolanic material like waste glass powder in concrete, reduces the workability. Therefore, the concrete containing waste glass powder needs to be investigated.

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PREVIOUS WORK AND SATIATION

An attempt has been made to find out the workability of concrete produced by replacing the cement with waste glass powder in various percentages ranging from 5% to 40% in increments of 5%. Higher strength was achieved when 20% cement was replaced by glass powder in concrete. [2] [3]

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Use of sand for compacted clay liner with Addition of bentonite

S. A. Agnihotri[1], O.S. Powar[2], S.M. Bhosale[3]

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[2 & 3] Assistant Professor, Department of Civil Engineering, Department of Technology, Shivaji University, Kolhapur - 416 007, India

Abstract— **The huge growth in population and industrialization results in water scarcity problem and hence we started ground water extraction. Due to the direct dumping of municipal solid waste as well as industrial solid waste a large quantity of leachate is percolating through ground. Hence the term engineered landfill design is comes in view. Liner is the one main part of the landfill design. The main concentration is given on compacted clay liner because it is quite cost effective than other liner systems**

Sand which is easily available everywhere is taken for design of compacted clay liner. As sand may not have required permeability, sodium bentonite is added with it. Experimental work shows that 7% bentonite in sand can give the best results for construction of compacted clay liner using sand. The sand-bentonite mixture with 7% bentonite shows 7.49×10^{-8}cm/sec permeability. This value is less than required permeability as per different regulation.

Keywords: **Sand, Bentonite, Leachate, EPA, Liner.**

I. INTRODUCTION

Industrialization brought forth with it the associated problems. The industrial activities generated large quantities of wastes. Part of these wastes in different physical forms such as solids liquids and gases turn as pollutants in due course. Based on the safety level, these wastes can be hazardous or non hazardous. Wastes can be controlled by different options such as waste reduction at source, resource recovery through separation and recycling, resources recovery through waste processing, waste transformation and environmentally sustainable disposal on land. Despite all efforts,

ISBN : 978-81-907287-0-6

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(An Autonomus Institute Affiliated to Shivaji University, Kolhapur & Approved by AICTE New Delhi)

National Conference on

ELECTRONICS FOR RURAL DEVELOPMENT

NCETC-2013

ORGANISED BY

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

********** *Certificate* **********

This is to certify that Mr./Mrs./Miss. Jadhav Nilesh Sharad

of R.I.T. Sakharale has ~~participated~~/presented a paper

entitled Design of A differential Relay for 1000kv Transmission Line Using MATLAB

in the National Conference on Electronics for Rural Development NCETC 2013 held on 7th,8th June 2013.

Prof.Mrs.S.S.Patil, Convener	Prof.Mrs.J.S.Awati	Prof.Mr.M.S.Kumbhar Head, ETC Dept.	Prof.Dr.P.S.Patil TEQIP Co-Ordinator	Dr.Mrs.S.S.Kulkarni Director

IN ASSOCIATION WITH

IETE DIAMOND JUBILEE 1953-2013

Advanced Research in Engineering and Technology 2013

International Conference on Advanced Research in Engineering and Technology (ICARET 2013)

Advances in Engineering and Technology Volume 2

Andhra Pradesh, India
8-9 February 2013

ISBN: 978-1-63439-240-2

IEEE International Conference on Advanced Research in Engineering and Technology

IEEE ICARET – 2013

IEEE

Certificate of Recognition

This is to certify that Nilesh Jadhav of EE dept has presented the research manuscript entitled Capacitive Current Compensation Techniques for long Transmission lines - An Overview. in the IEEE International Conference on Advanced Research in Engineering and Technology (IEEE ICARET – 2013), organized by K L University, Vaddeswaram, Guntur District, Andhra Pradesh, India during 8th & 9th February 2013.

ICARET -12

Md. Shafiyulla Khan
Convener & Coordinator,
IEEE International Conference Organizing Committee

ICPEC'13
06 - 08 February, 2013

PSNA
College of Engineering and Technology
Kothandaraman Nagar, Dindigul - 624 622
Tamilnadu, India
Estd : 1984

YOGESH RAMACHANDRA NAIK

of *Rajarambapu Institute of Technology, Islampur*
has presented a research paper titled
A Review on Photovoltaic Module Based Grid Connected Power Inverter
in the IEEE International Conference on Power, Energy & Control (ICPEC'13) held at PSNA College of Engineering & Technology, during February 06-08, 2013.

International Conference on Power, Energy & Control
IEEE

Technical Programme Chair

Conference Chair

Department of EEE

IEEE Madras Section
IEEE PES Power & Energy Society
Electron Devices Society
IET
SIEMENS
National Instruments

ICEETS - 2013

2013 International Conference on Energy Efficient Technologies for Sustainability

St. Xavier's Catholic College of Engineering
Nagercoil – 629003, Tamilnadu, India

April 10 to 12, 2013

Certificate of Participation

Name : **Yogesh.R. Naik**

Title : A Control Topology for Maximum Peak Power Tracking of Grid Tied Photovoltaic System.

Authors : Yogesh.R. Naik, A.R. Thorat

Dr. R. Edwin Raj
Organizing Secretary

Dr. S. Joseph Sekhar
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★★★★★★★★★★ Certificate ★★★★★★★★★★

This is to certify that Mr./~~Mrs./Miss~~. Naik Yogesh R.

of R.I.T, Sakharale has ~~participated~~/presented a paper

entitled Maximum peak power tracking of grid connected pv system.

in the National Conference on Electronics for Rural Development NCETC 2013 held on 7th,8th June 2013.

Prof.Mrs.S.S.Patil, Prof.Mrs.J.S.Awati	Prof.Mr.M.S.Kumbhar	Prof.Dr.P.S.Patil	Dr.Mrs.S.S.Kulkarni
Convener	Head, ETC Dept.	TEQIP Co-Ordinator	Director

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This is to certify that Mr./Mrs./Miss. Metkari Vishal T.

of R.I.T. Sakharale has ~~participated~~/presented a paper

entitled Load Balancing In Primary Distribution Feeder by Combination of Renewable Energy Source & Voltage Source Inverter

in the National Conference on Electronics for Rural Development NCETC 2013 held on 7th,8th June 2013.

Prof.Mrs.S.S.Patil, Prof.Mrs.J.S.Awati	Prof.Mr.M.S.Kumbhar	Prof.Dr.P.S.Patil	Dr.Mrs.S.S.Kulkarni
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This is to certify that Mr./Mrs./Miss. Bhandare Arvind Madhukar

of R.I.T. Sakharale has ~~participated~~/presented a paper

entitled Maximum Power Point Tracking based on Matrix Converter for Variable speed Wind Turbine System

in the National Conference on Electronics for Rural Development NCETC 2013 held on 7th,8th June 2013.

Prof.Mrs.S.S.Patil, Prof.Mrs.J.S.Awati	Prof.Mr.M.S.Kumbhar	Prof.Dr.P.S.Patil	Dr.Mrs.S.S.Kulkarni
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Mr./Miss A. M. Bhandare

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the paper Wind Mill

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Tech. Committee Incharge
Prof. C. C. Koli

Principal
Dr. Vikram S. Patil

ICEETS - 2013

2013 International Conference on Energy Efficient Technologies for Sustainability

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Dr. R. Edwin Raj
Organizing Secretary

Dr. S. Joseph Sekhar
Organizing Chair

Holy-wood Academy, Kolhapur's

SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE

Sanjeevan Knowledge City, Panhala, Tal. Panhala, Dist. Kolhapur - 416201. (Mah.)

National Conference on Recent Advancements in Engineering

CERTIFICATE

This is to certify that, Mr. / Ms. Koli G.C

has presented / authored / participated the paper on Sustainable Hospital Building Envelopes Ideal Energy Conservation Tool.

in the "National Conference on Recent Advancements in Engineering (NCRAE12)" held on 22nd and 23rd June, 2012.

Dr. DURADUNDI S. BADKAR
Dean R&D -
Chief Co-ordinator NCRAE12

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School of Chemical Sciences
Solapur University, Solapur
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2nd International Conference on

"Emerging Trends in Chemical Sciences"

ETCS-2012

2nd - 4th November 2012

CERTIFICATE

It is hereby certified that Dr./Mr./Ms Vishal Arun Patil, Sanjeevan Engg. & Tech. institute, Panhala. *has attended/presented paper in the International Conference*

On "Emerging Trends in Chemical Sciences" held at Solapur University, Solapur.

Prof. P. G. More
Convener
ETCS-2012

Dr. A.A. Ghanwat
Organizing Secretary
ETCS-2012

PP 7

POTASSIUM FERRO-CYANIDE CATALYZED HIGHLY RAPID SYNTHESIS OF BENZOXAZOLES AND BENZOTHIAZOLES UNDER SOLVENT FREE CONDITION

Vishal A. Patil,[a] B. P. Bandgar,[b] Kabeer A. Shaikh[a]*

[a]Organic Synthesis Laboratory, Department of Chemistry, Sir Sayyed College, Aurangabad-431 001, Maharashtra, India
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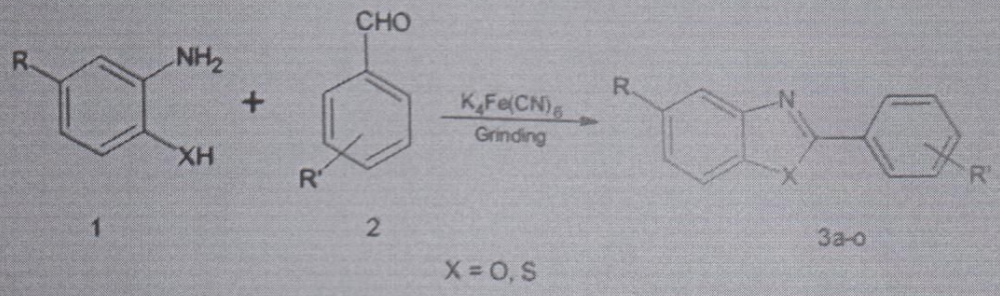
Benzothiazoles and benzoxazoles are very important group of heterocyclic compounds that have many applications in both pharmaceutical and industrial research. They are widely found in bioorganic and medicinal chemistry with applications in drug discovery such as antitumour, anticonvulsant, and antiviral applications.[1-3] They have also found applications in industry as antioxidants, vulcanization accelerators, and as a dopant in a light-emitting organic electroluminescent device.[4,5] Due to their wide range of pharmacological activity in synthetic and industrial applications, the synthesis of these compounds has recently received a great deal of attention for the discovery of improved protocols towards milder and high yielding approaches.



1 2 3a-o

X = O, S

Scheme: Synthesis of Benzoxazoles and Benzothiazoles

REFERENCES:

1. T D Bradshaw and A D Westwell, Curr. Med. Chem. 11, 2004, 1009.
2. S Hays, J M J Rice, D F Ortwine, G Johnson, R D Schwarz, D K Boyd, L F Copeland, M G Vartanian and P A J Boxer, Pharm. Sci. 83, 1994, 1425.
3. C J Paget, K Kisner, R L Stone and D C Delong, J. Med. Chem. 12, 1969, 1016.
4. S. K. N. Ivanov, V. S. Yuritsyn, Chem. Abstr. 74, 1971, 124487m.
5. Monsanto, Chem. Abstr. 68, 1968, 96660t

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PP 6

STANNOUS CHLORIDE AS AN EFFICIENT CATALYST FOR THE SYNTHESIS OF 1,5-BENZODIAZEPINE DERIVATIVES UNDER SOLVENT FREE CONDITIONS

Vishal A. Patil,[a] B. P. Bandgar,[b] Kabeer A. Shaikh[b]*
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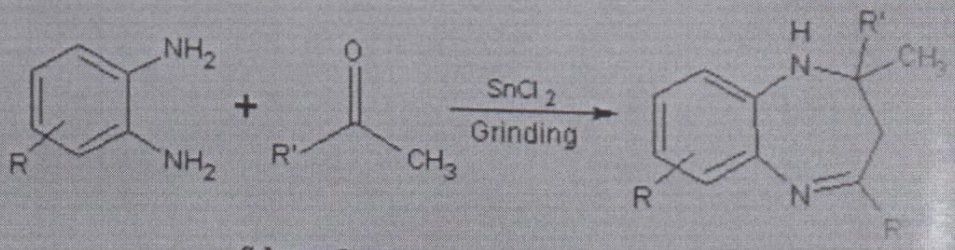
Benzodiazepines have recently attracted attention as an important class of heterocyclic compounds in the field of drugs and pharmaceuticals. These compounds are widely used as anticonvulsant, antianxiety, analgesic, sedative, antidepressive, hypnotic agents [1-4] as well as anti-inflammatory agents. [5] Other than their biological importance, benzodiazepine derivatives are also commercially used as dyes for acrylic fibers. [6] Moreover, 1,5-benzodiazepine derivatives are valuable synthons that can be used in the preparation of other fused ring compounds such as triazolo-, oxadiazolo-, oxazino-, or furano-benzodiazepines. [7-10] As a result, research in this area is still very active and is directed toward the greener synthesis of compounds with excellent yield. In recent years, Stannous Chloride is frequently used in organic synthesis [11] as a catalyst due to its properties such as nontoxic nature, easy availability, inexpensiveness and easiness for work up. Various biologically important 1,5-benzodiazepine derivatives were efficiently synthesized in excellent yields using catalytic amounts of Stannous Chloride (10 mol %). This inexpensive, nontoxic, and readily available catalyst efficiently catalyzes the condensation of several aromatic ketones with substituted o-phenylenediamines.



Scheme: Synthesis of 1, 5-benzodiazepines

REFERENCES:

1. H. Schutz, Benzodiazepines; Springer: Heidelberg, 1982
2. J. K. Landquist, In Comprehensive Heterocyclic Chemistry; A. R. Katritzky, C. W. Rees, Eds.; Pergamon [illegible]rd, 1984; Vol. 1, pp 166–170
3. R. I. Fryer, Bicyclic Diazapines. In The Chemistry of Heterocyclic Compounds; E. C. Taylor, Ed.; Wiley: New York, 1991; Vol. 50, Chapter II
4. L. O. Randall, B. Kappel, In Benzodiazepines; S. Garattini, E. Mussini, L. O. Randall, Eds.; Raven Press: New York, 1973; p 27.
5. J. R. De Baun, F. M. Pallos, D. R. Baker, U.S. Patent 3,978,227, 1976; Chem. Abstr. 86, 1977, 5498d.
6. R. C. Haris, J. M. Straley, U.S. Patent 1,537,757, 1968; Chem. Abstr. 73, 1970, 100054w.
7. M. C. Aversa, A. Ferlazzo, P. Gionnetto, F. H. Kohnke, Synthesis 1986, 230
8. M. Essaber, A. Baouid, A. Hasnaoui, A. Benharref, J. P. Lavergne, Synth. Commun. 28, 1998, 4097
9. A. M. El-Sayed, H. Abdel-Ghany, A. M. M. El-Saghier, Synth. Commun. 29, 1999, 3561
10. A. Chimirri, S. Grasso, R. Ottana, G. Romeo, M. J. Zappala, Heterocycl. Chem. 27, 1990, 371.
G. Rai, J. M. Jeong, Y. S. Lee, Tetrahedron Lett. 46, 2005, 3987.

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PP 5

POTASSIUM FERRO-CYANIDE CATALYZED AN EFFICIENT AND CONVENIENT SYNTHESIS OF BENZOXAZOLES AND BENZOTHIAZOLES

Vishal A. Patil,[a] B. P. Bandgar,[b] Kabeer A. Shaikh[a]*

[a]Organic Synthesis Laboratory, Department of Chemistry, Sir Sayyed College, Aurangabad-431 001, Maharashtra, India
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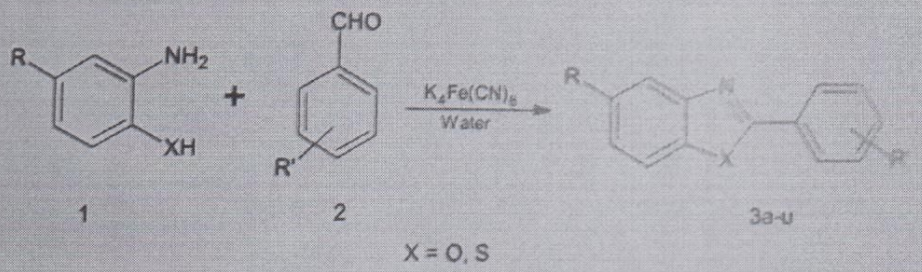
Benzoxazoles and benzothiazoles are very important group of heterocyclic compounds that have many applications in both pharmaceutical and industrial research. They are widely found in bioorganic and medicinal chemistry with applications in drug discovery such as antitumour, anticonvulsant, and antiviral applications.[1-3] Because of these potent biological activities, the research still continuous to have a better methodology for the synthesis of benzoxazoles and benzothiazoles in terms of simplicity, eco- friendly and economic viability, which is achieved by using Potassium ferro-cyanide.

The metal co-ordinate complex $K_4[Fe(CN)_6]$ is an efficient and environmentally benign catalyst[4-6] used for the synthesis of benzoxazoles and benzothiazoles from various aldehydes and o-aminophenol/o- aminothiophenol in aqueous medium at room temperature. This protocol gives excellent yield of products with desired purity.



1 2 3a-u

X = O, S

Scheme: Synthesis of Benzoxazoles and Benzothiazoles

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1. T D Bradshaw and A D Westwell, Curr. Med. Chem. 11, 2004, 1009.
2. S Hays, J M J Rice, D F Ortwine, G Johnson, R D Schwarz, D K Boyd, L F Copeland, M G Vartanian and P A J Boxer, Pharm. Sci. 83, 1994, 1425.
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4. C Laszlo, F Werner, K Bernhard, H Ursula, F Johannes and J Ulrich, *Tetrahedron Letters*. 39, 1998, 2087.
5. G Grego, P Luucia, N Alessandra and D Marco, *Tetrahedron Letters*. 50, 2009, 3095.
6. Z Y Xiao and D G Ji, Journal of Harzardous materials. 156, 2008, 300

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UOWD
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International Conference on Technology and Business Management

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This is to certify that the paper entitled '*The Lean Ahead – For Continuous Improvements*' was presented in-absentia by **Muzammil Bepari** at the International Conference on Technology and Business Management organized at the UOWD Dubai.

INFOMS

(2217/107)

ISBN: 978-93-82062-39-4

Experimental Investigation of Shrinkage Properties of Concrete Containing Hybrid Fibers

Nikhil N. Mudgal[1], Amit C. Thoke[2] and Shrivallabh S. Chavan[3]
[1]Civil Engineering Department, Rajarambapu Institute of Technology, RajaramnagarIslampur, Sangli Maharastra, India
[2, 3]Civil Engineering Department, Sanjeevan Engineering & Technology Institute Panhala, Kolhapur Maharastra, India
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Abstract—Volume change is one of the most detrimental properties of concrete, which affects the long-term strength and durability. The important factors that contribute to the cracks in floors and pavements is that due to shrinkage. It is difficult to make concrete which does not shrink and crack. Efforts are made to reduce the shrinkage and shrinkage cracks. The main objective of this experimentation is to study the shrinkage properties of concrete containing hybrid fiber. The percentage of monofibers like steel, polypropylene, GI, HDPE, and percentage of hybrid fibers like (steel+ polypropylene), (steel+ HDPE), (steel+ GI) used in the experimentations were kept constant (by volume fraction). The experimental results indicated that the hybrid fiber reinforced concrete achieves reduction in the shrinkage cracks in concrete compared with their corresponding mono fibers.

Keywords: Concrete, Fiber, Hybrid Fiber, Shrinkage parameters.

I. INTRODUCTION

Plastic shrinkage is an inherent property of all concrete and is potentially one of the most severe problems facing the concrete industry. Plastic shrinkage cracks can severely compromise structural integrity and durability and the consequences are often not known until late in structures life. For this reason, concrete mixes should be proportioned such that minimal plastic shrinkage occurs. However, because the mechanisms governing plastic shrinkage are relatively unknown, it is becoming increasingly common practice to tolerate plastic shrinkage and use the fibers to limit the affect of any cracks that arise.

Plastic cracking is common in concrete structures and is often accompanied by loss of serviceability with severe economic consequences and possibly litigation. Jointing and reinforcement can control shrinkage cracks, but plastic cracking, which can be both random and intense, can become well established before significant hydration has occurred. In flat work, it is probably the dominant form of unplanned cracking.[1]

Plastic shrinkage cracking of concrete occurs within the first few hours after the concrete is placed and before it attains any significant strength; it results in an unsightly and non uniform appearance on the concrete surface. Plastic shrinkage cracks become critical weak points for aggressive substances to penetrate into internal portion of concrete leading to the acceleration of other detrimental forms of concrete deterioration. Consequently, the performance, serviceability, durability and aesthetic qualities of concrete structures are reduced. Controlling plastic shrinkage cracking in concrete is essential for developing more durable and longer-lasting structures at minimum life-cycle cost.

One of the primary causes of plastic shrinkage cracking is the loss of water from evaporation that leads to a built-up tensile shrinkage stress when concrete is subjected to sufficient restraint. When the rate of water loss due to evaporation exceeds the rate at which the bleed water is supplied to the surface, negative capillary pressures form that result in volume changes in the concrete. Tensile stresses in the paste form due to negative capillary pressure and the development of strength in the concrete. Cracking occurs if the tensile stresses are greater than tensile strength of the concrete.[2]

Shrinkage and creep have a significant impact on the performance of concrete structures. They cau deflections and affect the stress distribution reinforced concrete structure and within concre elements.[3]

Hybrid fibers of different sizes and types may p important roles in resisting cracking at different sca

ISBN: 978-93-82062-39-4

Experimental Investigation of Shrinkage Properties of Concrete Containing Hybrid Fibers

Nikhil N. Mudgal[1], Amit C. Thoke[2] and Shrivallabh S. Chavan[3]
[1]Civil Engineering Department, Rajarambapu Institute of Technology, RajaramnagarIslampur, Sangli Maharastra, India
[2, 3]Civil Engineering Department, Sanjeevan Engineering & Technology Institute Panhala, Kolhapur Maharastra, India
e-mail: [1]nikhil.mudgal@yahoo.co.in, [2]amitthoke@gmail.com, [3]shri858@rediffmail.com

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ISBN: 978-93-82062-39-4

National Conference on Recent Advancements in Engineering (NCRAE-12)

Dynamic Analysis of Nuclear Containment using Finite Element Method

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[1, 2]*Civil Engineering Department, Sanjeevan Engineering & Technology Institute, Panhala, Kolhapur, Maharastra–India*

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***Abstract*—Recent Earthquake felt at three Nuclear Power Plant in India viz., Kakrapar, Narora and Kota has created anxiety in the mind of certain section of society, as to how these plants behaved during the seismic events. Nuclear containment is a specialized structure; dynamic analysis should be carried out with internationally accepted standard code like ASCE-4-98, STUK, and NRC. Nuclear power plant consists of various structures, systems and equipments. Development of mathematical model for seismic effect requires careful consideration. Three dimensional finite element mathematical models are used to represent complex structures. In dynamic analysis of containment, generally two levels of seismic parameters are prescribed as Safe Shutdown Earthquake having probability once in 10, 000 years and Operating Basis Earthquake having probability once in 100 years. This work aims at evaluating the structural behavior of nuclear containment for earthquake forces, for the same Response Spectrum method was used for analysis .On basis of detailed stress analysis of a typical containment, it is concluded that results discussed in paper lead to safe and effective reliability for dynamic design of containment structures.**

***Keywords:** Dynamic Analysis, Nuclear Containment, Response Spectrum, stability of structure, Finite Element Method.*

I. INTRODUCTION

The Nuclear Power Plant (NPP) consists of various structures Systems and Equipment (SS&E) which are designed to resist Earthquake forces. Earthquake is a natural phenomenon, which is generated in earth's crust. The earth's crust is made up of mosaic of several tectonic plates. These tectonic plates are constantly moving slowly in different directions resulting in gradual accumulation of strains over a large rock mass at the plate boundaries. When the accumulated strain exceeds the strength of the rocks, these rocks rupture resulting in sudden release of stored strain energy which is transmitted in the form of seismic waves, generating ground vibrations traveling far and wide and get attenuated as they travel. Such ground vibrations or base motion of the plant building gets transmitted through the intermediate structures of the building to the SS&E which are mounted on the floors or walls of the building. The earthquake motion mainly induces inertial forces in the SS&E of the plant. The NPP structure, system and equipment are designed to resist these earthquake forces along with other loads, viz., gravity, pressure, thermal loads etc.

II. COMPONANT PARTS OF NUCLEAR REACTOR

The Nuclear Power Plant (NPP) houses various reactor equipment and piping with unique characteristics of their own. The pressurized heavy water reactor includes structures such as auxiliary building (Containment structure), Control Building, reactor auxiliary building, service building, waste management building, turbine building and spent fuel storage bay building etc.these structure directly founded on ground and classified as three categories [4].Category 1 structures (e.g. rector containment structure)are designed for S1 and S2 level earthquakes. S1 is the level of ground motion which can be reasonably expected to be experienced at the site area once during operation life of structure. This is referred as Operational Basis Earthquake (OBE).S2 is the level of ground motion that has very low probability of being exceeded and has return period of the order of 10, 000 years. This has referred as Safe Shutdown Earthquake (SSE). Category 2 structures (e.g. waste management building) are designed as S1 level earthquake and category 3 structures (e.g. turbine building) are designed as per national practice (Indian Standard, IS – 1343, 1984).

Component parts of Nuclear Reactor are shown in (Fig.1). It consists of Internal Structure (IS), Calandria Vault, Inner Containment Wall (ICW) and Outer Containment Wall (OCW). All these cast monolithically with a thick circular raft. The Outer Containment Wall consists of reinforced concrete which

ISBN: 978-93-82062-39-4

National Conference on Recent Advancements in Engineering (NCRAE-12)

Dynamic Analysis of Nuclear Containment using Finite Element Method

Abhijeet H. Kumbhar[1] and Shrivallabh S. Chavan[2]

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***Abstract*—Recent Earthquake felt at three Nuclear Power Plant in India viz., Kakrapar, Narora and Kota has created anxiety in the mind of certain section of society, as to how these plants behaved during the seismic events. Nuclear containment is a specialized structure; dynamic analysis should be carried out with internationally accepted standard code like ASCE-4-98, STUK, and NRC. Nuclear power plant consists of various structures, systems and equipments. Development of mathematical model for seismic effect requires careful consideration. Three dimensional finite element mathematical models are used to represent complex structures. In dynamic analysis of containment, generally two levels of seismic parameters are prescribed as Safe Shutdown Earthquake having probability once in 10, 000 years and Operating Basis Earthquake having probability once in 100 years. This work aims at evaluating the structural behavior of nuclear containment for earthquake forces, for the same Response Spectrum method was used for analysis .On basis of detailed stress analysis of a typical containment, it is concluded that results discussed in paper lead to safe and effective reliability for dynamic design of containment structures.**

***Keywords:** Dynamic Analysis, Nuclear Containment, Response Spectrum, stability of structure, Finite Element Method.*

I. INTRODUCTION

The Nuclear Power Plant (NPP) consists of various structures Systems and Equipment (SS&E) which are designed to resist Earthquake forces. Earthquake is a natural phenomenon, which is generated in earth's crust. The earth's crust is made up of mosaic of several tectonic plates. These tectonic plates are constantly moving slowly in different directions resulting in gradual accumulation of strains over a large rock mass at the plate boundaries. When the accumulated strain exceeds the strength of the rocks, these rocks rupture resulting in sudden release of stored strain energy which is transmitted in the form of seismic waves, generating ground vibrations traveling far and wide and get attenuated as they travel. Such ground vibrations or base motion of the plant building gets transmitted through the intermediate structures of the building to the SS&E which are mounted on the floors or walls of the building. The earthquake motion mainly induces inertial forces in the SS&E of the plant. The NPP structure, system and equipment are designed to resist these earthquake forces along with other loads, viz., gravity, pressure, thermal loads etc.

II. COMPONANT PARTS OF NUCLEAR REACTOR

The Nuclear Power Plant (NPP) houses various reactor equipment and piping with unique characteristics of their own. The pressurized heavy water reactor includes structures such as auxiliary building (Containment structure), Control Building, reactor auxiliary building, service building, waste management building, turbine building and spent fuel storage bay building etc.these structure directly founded on ground and classified as three categories [4].Category 1 structures (e.g. rector containment structure)are designed for S1 and S2 level earthquakes. S1 is the level of ground motion which can be reasonably expected to be experienced at the site area once during operation life of structure. This is referred as Operational Basis Earthquake (OBE).S2 is the level of ground motion that has very low probability of being exceeded and has return period of the order of 10, 000 years. This has referred as Safe Shutdown Earthquake (SSE). Category 2 structures (e.g. waste management building) are designed as S1 level earthquake and category 3 structures (e.g. turbine building) are designed as per national practice (Indian Standard, IS – 1343, 1984).

Component parts of Nuclear Reactor are shown in (Fig.1). It consists of Internal Structure (IS), Calandria Vault, Inner Containment Wall (ICW) and Outer Containment Wall (OCW). All these cast monolithically with a thick circular raft. The Outer Containment Wall consists of reinforced concrete which