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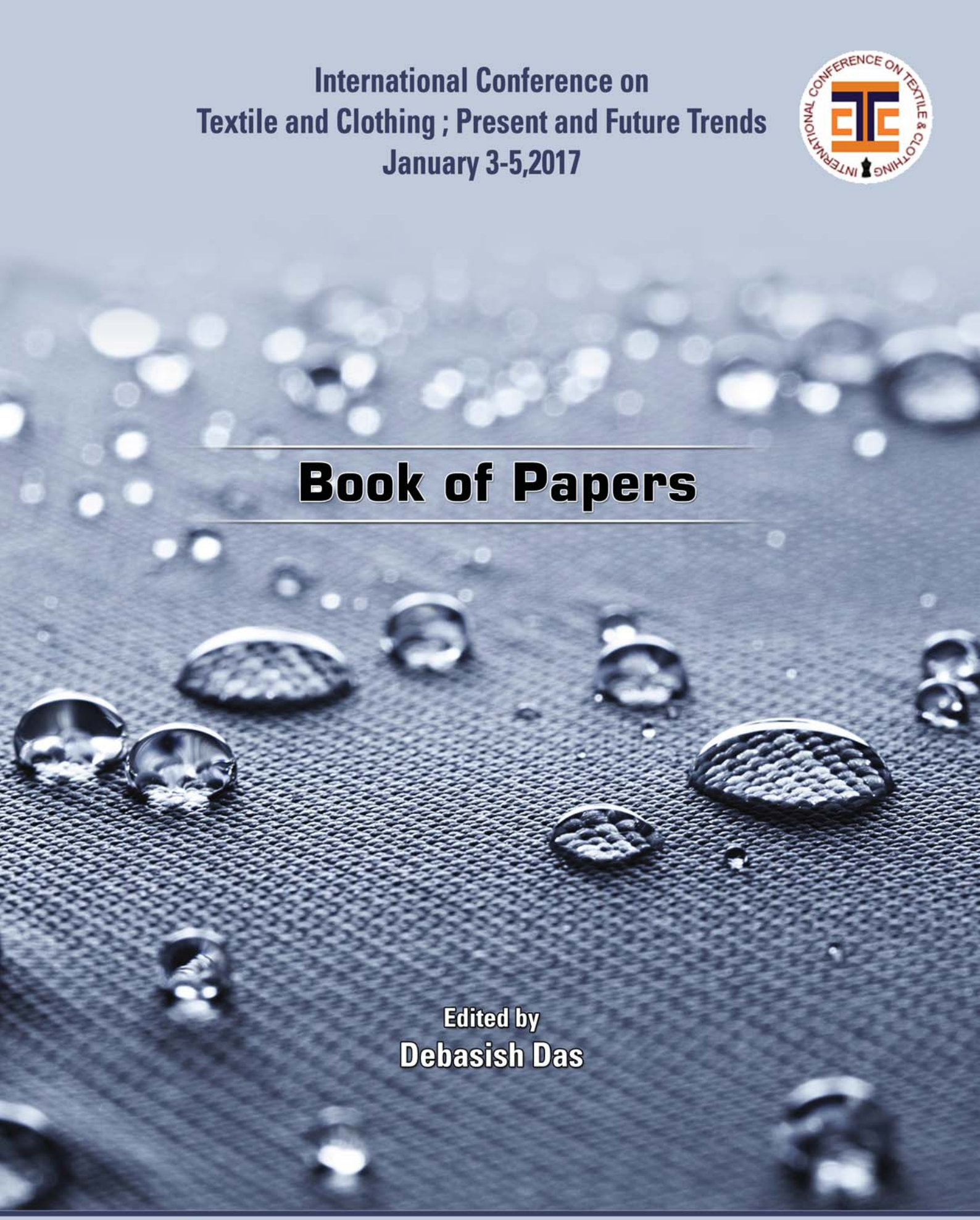
International Conference on
Textile and Clothing ; Present and Future Trends
January 3-5,2017



Book of Papers

Edited by
Debasish Das

Organised by
Department of Jute & Fibre Technology
University of Calcutta
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Study on Effect of Spindle Eccentricity on Properties of Ring and Compact Yarn

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ABSTRACT

The running characteristics of a spindle, especially imbalance and eccentricity relative to the ring, affect the yarn quality. Hence, the mills have to ensure at all times that centring of the spindles relative to the rings is as accurate as possible. In this study the spindles are set at different eccentric gauge that is 0, 3 and 6 with the help of electronic eccentricity tester as well as it is cantered manually using mechanical gauge. The effect of these eccentricities have been observed on the properties of ring and compact yarn at three different level of counts, the yarn properties such as hairiness, unevenness percentage, count strength product (csp), reisskilometer (rkm)and imperfections have been tested. Also the comparison between yarn produced by manually centred and electronically centred rings havebeen studied. It has been found that for all the count of ring and compact yarn the increasing trend is observed between different eccentric values and yarn properties further there is more deviation in yarn properties observed for ring yarn as compared with compact yarn. For the observed trend, significant difference has been found for the imperfections. The results of mechanical centring are matching with the results of electronic cantering at the gauge of 3. While electronically cantering that is gauge 0 shows less unevenness, hairiness and imperfections as compared with manually centric yarn at all count level for both ring and compact yarn.

INTRODUCTION

The running characteristics of a spindle, especially imbalance and eccentricity relative to the ring, also affect yarn quality and of course the number of end breakages. Almost all yarn parameters are disadvantageously affected by poorly running spindles. Hence, the mill must ensure at all times that centring of the spindles relative to the rings is as accurate as possible. Since the ring and spindle form independent units and are able to shift relative to each other in the operation, these two parts must be re-centred from time to time. Previously this was done by shifting the spindle relative to the ring, but it is now usually carried out by adjusting the ring. Mechanical or electronic devices are used for centring [5]. Disturbed spindle centring is one of the major causes for the spindle to- spindle variation in hairiness. Spindles where centring is disturbed, hairiness is found to be higher and upon accurate centring hairiness comes down significantly. When spindle is not centred traveller movement is not smooth because of peak tensions in yarn. Traveller tilts and flutters also increases leading to higher hairiness [9]. As a result of the friction, hairiness in yarn increases power consumption. [3] [4]

Effects of improper centring of ring are as follows:

- It effects the properties of yarns
- The increase in imperfections
- The tension variation occurs and breakage rate will be more
- The damage of ring[8].

The change in centring of spindle found in peak spinning tension due to bobbin shape and size and it indicates the change in spinning geometry then automatically the change spinning triangle leads to increase in hairiness and indicates for maintenance should requires .and due to peak tension the other variables effects like end breaks peak tension is increased the change in spinning and also suggests the need to study spinning tension in conjunction spindle centring in yarn spinning quality measurements[1] [6].

EXPERIMENTAL WORK

The 100% cotton yarn have been prepared by using the raw materials as shown in Table 1 by using MCU5 and DCH32 varieties of cotton for the count of 80s Ne compact, 94s Ne ring and 100s Ne compact.

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ENERGY AUDIT AND CONSERVATION MEASURES OF A SPINNING MILL

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ABSTRACT: India, despite being one of the largest producers of electrical energy in the world is facing a deficit of electrical energy against its exponentially growing demand. Energy audit is one of the methods to assessment the energy such that to reduce the gap between supply and demand. In this project energy audit conducted at spinning mill, in order to find the scope for reduction in energy consumption. Energy audit was conducted by considering the power consumption data at plant & technical specification of each machine .From this audit energy saving potential of the mill have been estimated cost effective measures suggested.

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AN ADVANCED IMPLEMENTATION OF A MULTILEVEL CONVERTER SYSTEM BY A RENEWABLE SOURCES

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ABSTRACT: Reconfigurable Solar Converter(RSC) is used to perform dc/dc as well as dc/ac operations. The main drawback of this Reconfigurable Solar Converter is the power quality so that Total Harmonic Distortion (THD) is not reduced. To overcome this problem, a modified RSC(seven level converter) is studied and implemented. This seven level converter accomplishes three positive, three negative and a zero sequence. MATLAB/ Simulink is used to simulate the results for proposed converter system.

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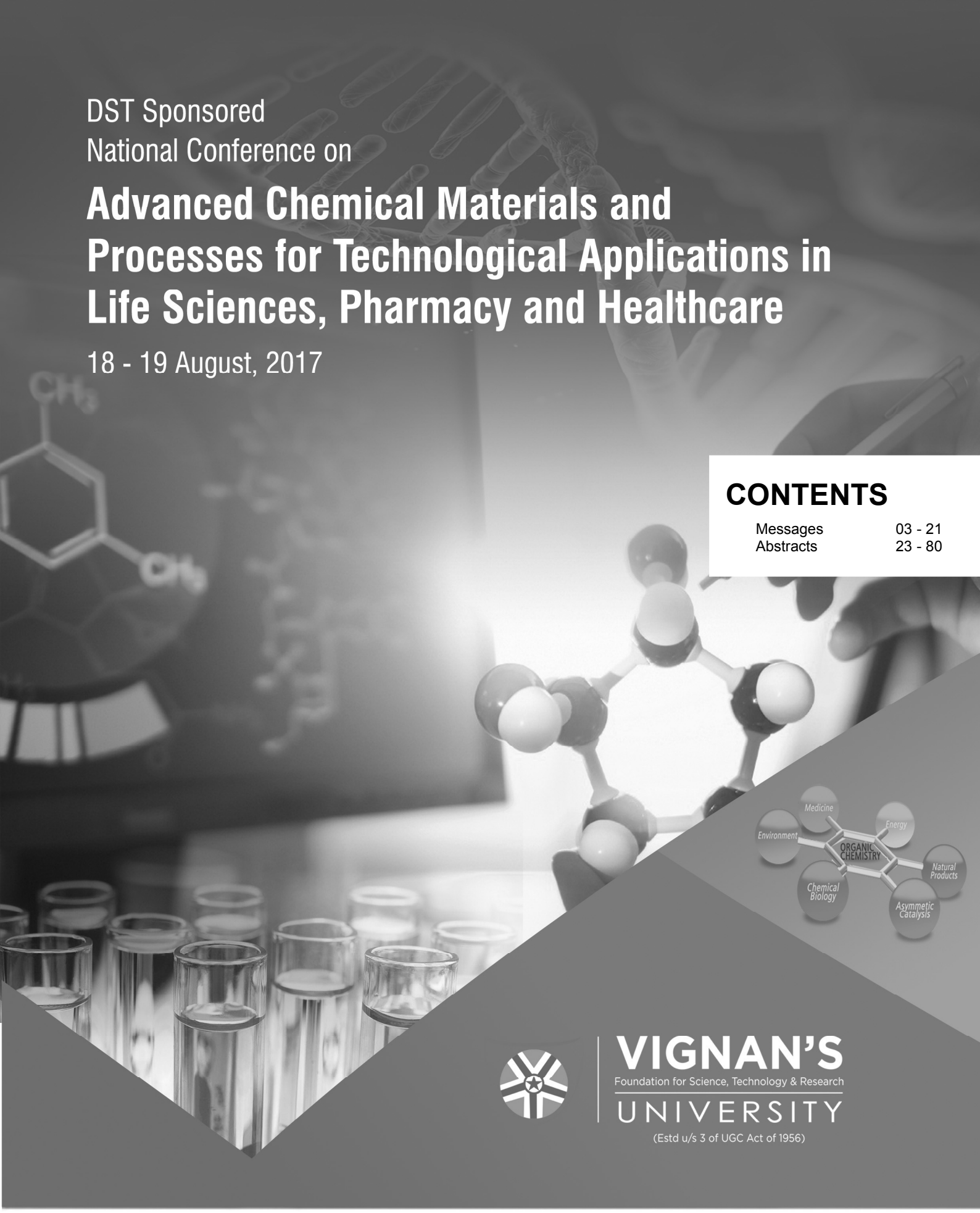

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IMPROVEMENT OF THE RETAINING TENDENCY OF MOISTURE & MINERALCOMPONENTS OF SOIL USING PROCESSED COCONUT COIR BY ITS CHARACTERIZATION

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Abstract

Growth and yield of vegetable crops depends on nature of soil, moisture content of it,existingnutritional components & also on externally added nutrients to the soil etc. Effectiveutilizationand absorption of manure, minerals, & nutrients & manure is an important parameter showing impact on Expenditure, yield and nutritive quality of the crops. Their longevity to retain in the soil for slow and gradual absorption by plants need to be increased.To serve this purpose we used processed coconut coir for seedlings in trays.Germination and growth rate is comparatively quick with coir when compared with ordinary soil. The coir assisted soil is found to have the growth & yield promoting tendency. So, our work is aimed at developing a sophisticated soil coir mixture and its characterization.

Key words: Coconut coir, nutrients retaining capacity**.**

CONJUGATES OF BENZOXAZOLE AND PYRAZOLE: SYNTHESIS AND EVALUATION OF BIOLOGICAL ACTIVITIES

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Abstract

Conjugates of benzoxazole and pyrazole were synthesized and characterized by spectral studies. The synthesized compounds and in vitrobiological activities were evaluated against four cancer cell lines. Structure and activity relationship between the synthesized molecules and anticancer activities is explained.

Keywords :

Benzoxazole, pyrazole, conjugates, biological activity.

Nonwoven Acoustic Textiles

B. Venkatesh, Ch.Govardhana Rao and E.I. Nagarajan

Abstract--- *Noise is perceived as disturbing and annoying in many fields of life. This can be observed in private as well as in working environments. Noise control and its principles play a major role in creating an acoustically pleasing environment. Continuous exposure of 90dB or above is dangerous to hearing. Installation of noise absorbent barriers between the source and the subjects is one of the main methods of noise control. Requirements concerning adjustment of acoustical parameters are nowadays more and more frequently numbered among design assumptions adopted for newly constructed concert halls and other areas to have different functions. Acoustical material plays a number of roles that are important in acoustic engineering such as the control of room acoustics, industrial noise control, studio acoustics and automotive acoustics. The main aim of this paper is to give broad outlook on the non woven fabrics as used in acoustic applications.*

Keywords--- *Noise Absorption, Textile industry, Noise control.*

I. INTRODUCTION:

IN the world today there are a lot of different health concerns; one of them is noise disturbance. Noise which complicate communication, disturbing concentration and lowers the quality of life could imply a health hazard if exposed to it for a longer period of time. Common reactions are headache, strong tiredness, tensions and body aches. Also worrying, stomach ache, sleep disturbance and other stress related problems. There are also research showing connection between exposure to noise for a long time and high blood pressure, vascular spasm and heart attacks. In order to alleviate this problem certain actions can be taken. One of those actions could be to take under consideration how the environment is decorated, regardless if it's an open office space or a noisy apartment there are products available to dampen and optimise the sound perception in a room.

Acoustics is defined as the scientific study of sound which includes the effect of reflection, refraction, absorption, diffraction and interference. Sound can be considered as a wave phenomenon. A sound wave is a longitudinal wave where particles of the medium are temporarily displaced in a direction parallel to energy transport and then return to their original position. The vibration in a medium produces alternating waves of relatively dense and sparse particles –compression and rarefaction respectively.

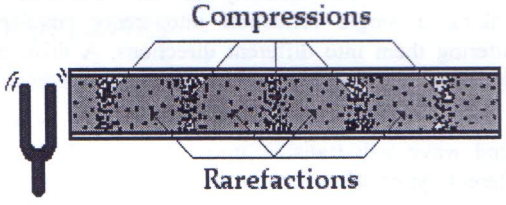

Fig. 1 Alternative patterns of dense and sparse particles

When a sound wave hits a surface it reflects in some way. How and how much depend on the surface, if the hitting surface is large enough and very different properties from the sound wave, it reflects [2]. Imagine it like light towards a mirror, it reflects the whole light wave and the same happens with the sound wave. Though if the surface is porous or is giving in for the sound wave, the air pressure attains losses of reflection, so called sound absorption. Absorption of sound waves is a process where the acoustic energy is transformed in to a different form of energy.

To measure the effectiveness of noise reduction, the so-called sound absorption coefficient α is used. This value indicates the ratio of absorbed to reflected energy. An α value of 1 means complete absorption. An α value of 0, however, stands for complete reflection of the acoustic waves. The sound absorption is measured over a frequency range of 125 - 4,000 Hz. However, the absorption levels are not the same for all frequencies. Hence the α value is the "statistical mean" of all values measured.

Acoustic nonwovens are an effective means of absorbing sound. An α value of up to 0.8 can be achieved, which means a noise level reduction of at least 10 dB. Acoustic nonwovens are mainly used in ceiling constructions, but also in wall linings, room dividers and office furniture.

There are a variety of ways to reduce noise today and they can basically be grouped by passive and active mediums. Passive mediums which is the most common one used for sound absorption, reduces noise by disseminating energy into heat, a typical passive medium is a porous material. All absorbing materials have a level

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