Usage of Bio Textile in Medical Field and convention of Bio Dregradable Products from Bio Polymers

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ABSTRACT

This paper discuss about the various usage of polymer. This paper mainly focused on how bio-textile is used in the field of medical science and how the bio-polymers will be formed from the biodegradable products. The Advanced usage in biological science and nano tecnology will be fused together and create many modulations in the field of tissue engineering. The genetical modified organisms are used in the production of bio polymers. And how bio polymers are help to produce the biodegradable products in large quantity which will be available at low cost.

KEY TERMS : bio textile, amino acid, bio-pots.

INTRODUCTION

The recent advances in molecule and biological science will provide the vital growth in textile and polymer engineering. The main objective of the paper is to provide the immediate impact of biotextile in medical field. The ability of biomaterial is to maintain its original dimension the chemical and mechanical property is to evolve the biopolymer in the hostile environment. The extent growth and the constant improvements are the innovations of the textile industry and the medical field. The bio textile will plays a major change in the medical fields as well as in the other fields. This will provide the effective change and high growth rate in the medical science. Also the polymer is very useful for the biological and bio medicine. Also this paper shows about how the bio degradable products such as bio plastics, bio pots can be formed from the bio polymers.

EXISTING SYSTEM

In the existing system the usage of bio textile in the medical field is very less. The textile products that are used in the medical field will provide some medical disorder which will suppose to create some insufficiency to the patients as well as the physicians. Therefore it will be more complicated for the environment to take the measurable task and to take the prominent decision. Also the plastics used in the field of medical science as well as in the other fields will be more or less creating the same impact in the environment but these types of materials will be prepared from the organic components. These products are non degradable products therefore it will create the several dis-inhabitant measures to the environment. Also these products were easily affected by the bacteria also it will also tend to create the more disorders.

PROPOSED METHODOLOGY

In the proposed methodology the system will intended to produce the bio- degradable products and it will create some new evolution in the usage of bio textile in the field of medical science.

BIO TEXTILE USED IN MEDICAL SCIENCE

The major requirement of the bio textile in the medical field is to provide the bio-receptivity and bio compatibility in the between the human being. In this it will provide the anti-microbial applications based on nylon and polypropylene mono filaments which will done the favor to the medical field as well as the environment.

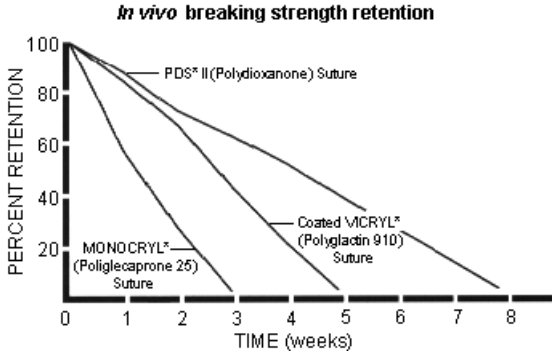

FIG 1: STRENGTH AND PERFORMANCE RETENTION OF VIVO TISSUE

The surgical construction from the same patient tissue known as autologus tissue is another statergy which is not always possible due to some

lack of donar tissue. The vivo route will initiate the tissue engineering therapy for the body to repair and regenerate the damaged tissue.

The bio textile will be used in the vivo tissue engineering. The heart patients who have congested heart failure have some impaired pumping capacity. To compensate the pumping faster the size of the heart will be enlarged. In this attempt the wrap knitted polyester cardiac support device were installed tightly around the infected heart. This will increase the cardiac function and pumping efficiency of the heart.

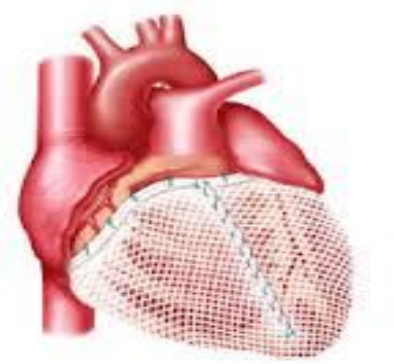

FIG 2: HEART WITH CARDIO SUPPORT PROTECTION

To control the condition of cell culture bioreactor will be produced with respect to the supply of nutrients, PH value and temperature of carbon dioxide and oxygen in atmosphere. The skin and most of the organs such as liver, heart, blood vessels, bone, bone marrow and cartilage.

The bio-fibre is also used for the sutures in surgery which is used to hold the tissues. The suture that consists of the monofilament is used to close the wounds. For the suturing to create better performance the catgut polymer was introduced. It is a bio-absorbed material which will cause some fewer reactions over the tissue. This type of polymer has the ability to degrade itself over the tissue through some enzyme reaction. To avoid the degradation this type of polymer will be coated with the protective polymer sheet.

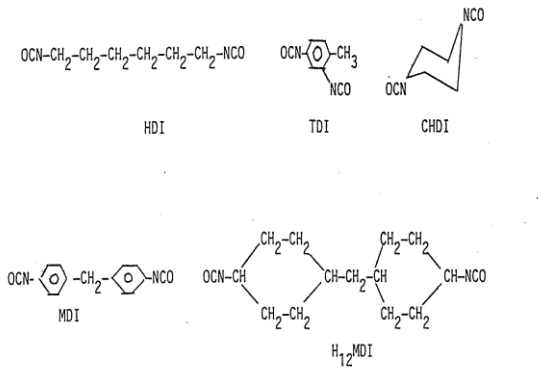

FIG 3: FORMATION REACTION OF CATGUT POLYMER

RECYCLING OF BIOPOLYMERS FORM BIO PRODUCTS

The bio degradation of starch products where help in recycling bio polymers. It will be produced by blending or mixing the synthetic polymers. The materials that are mainly formed to films and sheets which blends more than 85% of starch into the thin sheets of metals. The water soluble biopolymers can be synthesized and it will be modified to starch and cellulose. Hydroxyl cellulose is used as thickeners in the cementing.

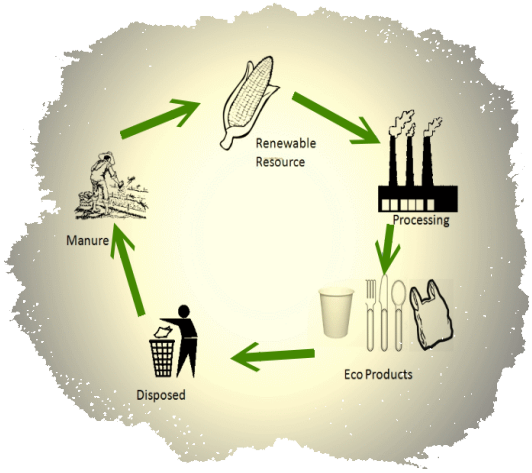

FIG 4: BIO DEGRADABLE PRODUCTS

The biodegradable pots are produced by molding some injection in bio degradable plastics. The thermo plastic bio degradable polymers which will form the PCL that is highly resistant to the water and other oil products. The ring opening polymerization will provide the clinically structured monofilament that gives the 50% of breaking strength. The bio-pots were formed by

eliminating the double handled and recycle of conventional plastic containers.

These bio-pots can be used in various fields such as green house effects and it should be used in the bio production in the formation from the natural products and this should be provide more environment friendly. The bio pots can also be made in coconuts because the roots can be penetrating through the pots. These pots will be degraded easily and it will be predicted by the environment this bio pots are impollutant.

The poly amino acid with the free carboxylic acid. The bio degradable plastics will be made from the corn starch which will be break down into elements like carbon dioxide, methane and water. The oxy biodegradable plastics will be provides an advantage because they can breakdown without releasing the methane. The degradation process consist of two steps at first the oxidation process will be takes place from the heat or light which will reduce the molecular weight of the plastic.

The plastic materials are made up of long chains of molecules. The plastic gives the indication depends upon the length of the chain. When the bio degradable plastics are buried under the water. The bio plastics are eradicated and decomposed in the soil.

FIG 3: Bio Plastics Produced from corn starch

CONCLUSION

This paper will provide the solution for the bio textile which evolved in the field of medical technologies. And the property of vivo has the ability to interact with the cell and extra cellular components. The biotextile engineering will targeted the healthcare therapies which will come to the reality in the 21st century. The production of bio degradable polymer from the bio polymer represents cleaner and safer way for making the environment clean. The new bio degradable products will be developed in effective range.

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