

(54) Title of the invention : SMART-DRE-M: BIOPOLYMER COMPOSITE BASED NANO-FIBROUS WOUND DRESSING MATERIAL.

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(57) Abstract :

ABSTRACT Our Invention • Smart-Dre-M is effective in addressing the increasing incidence of different wound types including surgical and traumatic wounds, diabetic foot ulcers, pressure ulcers, venous leg ulcers, burns and other types that warrant the modernization of the available wound dressings with advancing time. The Novel fabrications of wound dressings is largely driven by factors like growing number of accidents, increasing number of C-sections in elderly women, burn accidents and metabolic disease states like Diabetes mellitus. In all these cases, persistent infections, more particularly in chronic wounds (>90 days) are a big challenge to be addressed by customized wound dressings. Yet another daunting challenge is multi-drug resistance of patients to the available antibiotics and consequent failure in wound management in majority of the cases culminating in high morbidity and mortality rates. The proposed smart dressing material composed of core-shell nanofibers is fabricated with natural and low cost biomaterials like mucilage/gum from the plants Cochlospermum gossypium (Yellow Silk cotton tree) & Canthium coromandelicum (Native Indian Herb), leaf extract of Chromolaena odorata (Siam weed) and small, anti-inflammatory drug (Zaltoprofen) derived carbon dots doped with Fluorine, and Taurine as a bio-piezoelectric material. The goal of this proposed novel refined wound dressing material is to provide a quick heal with minimal discomfort to the patient and within the affordability of the larger section of the society.

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