

# GREEN COMPOSITE WOUND DRESSING

PATENT NO. PI 2019000741



Fresh bitter gourd



Bitter gourd extract



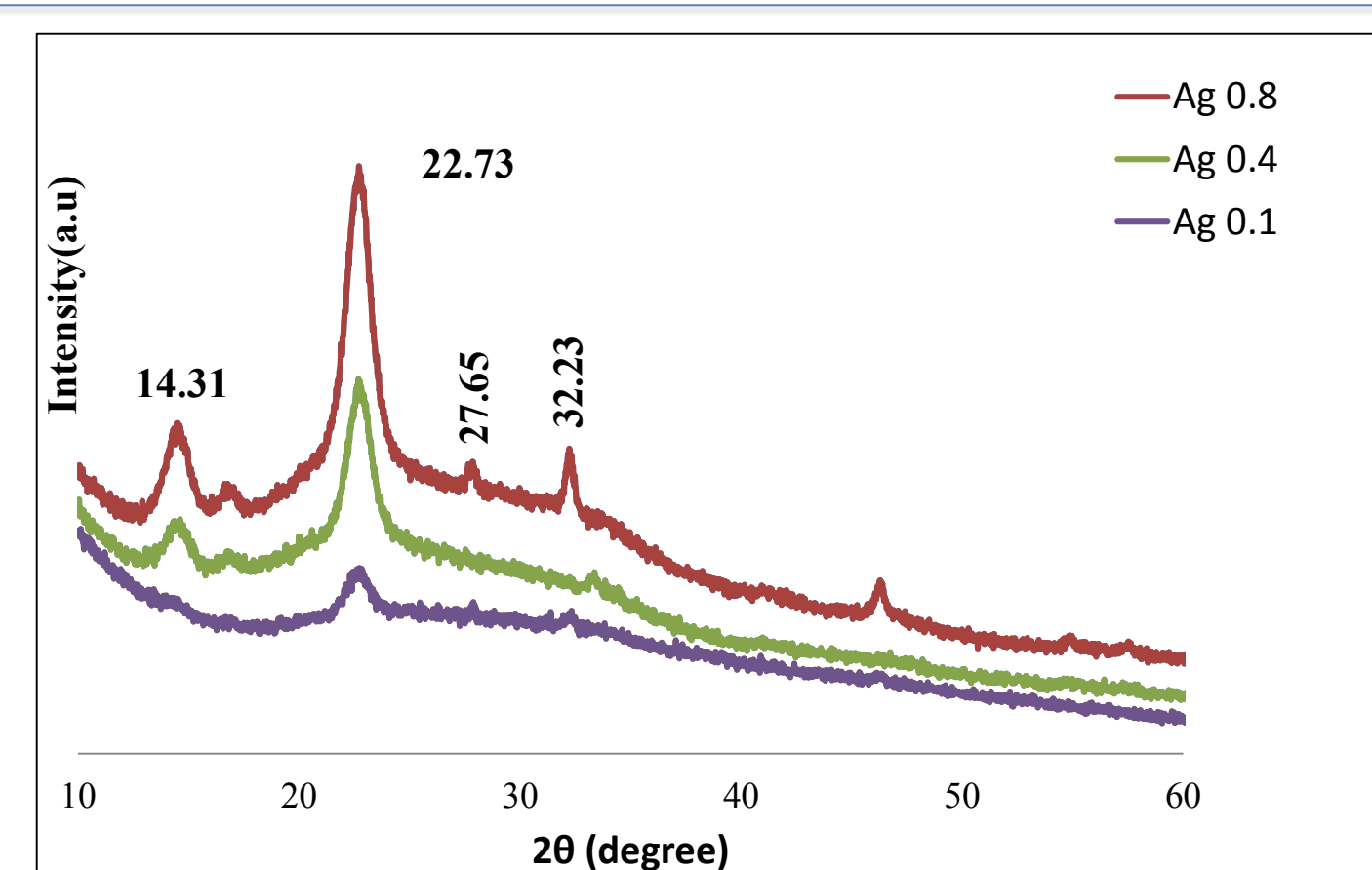
nanomaterial



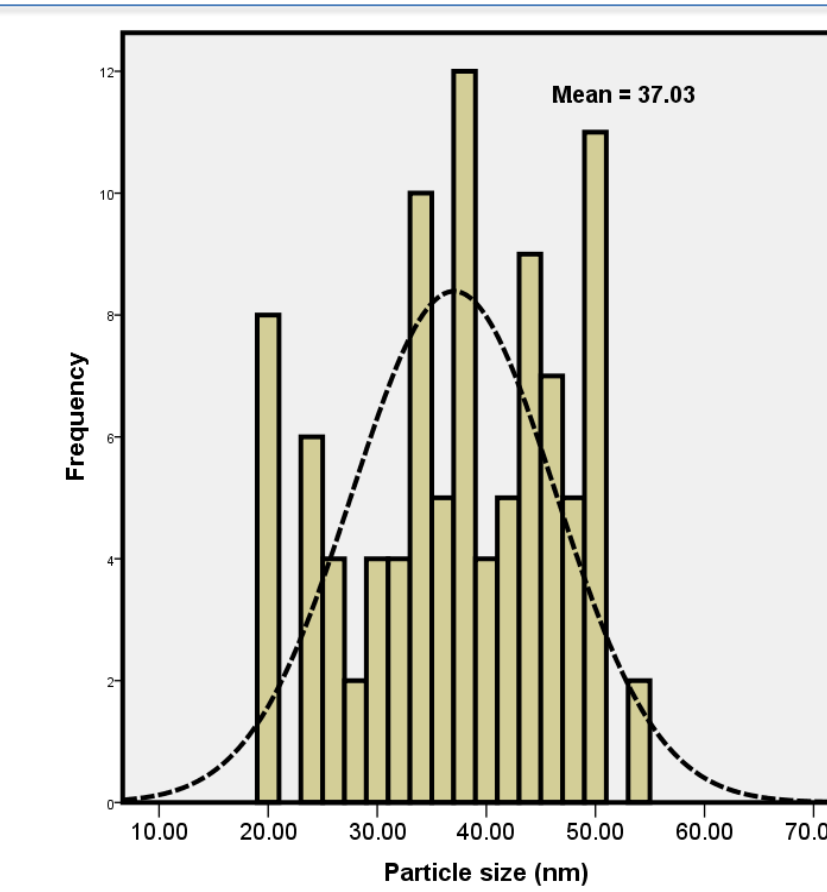
Isolated bacterium



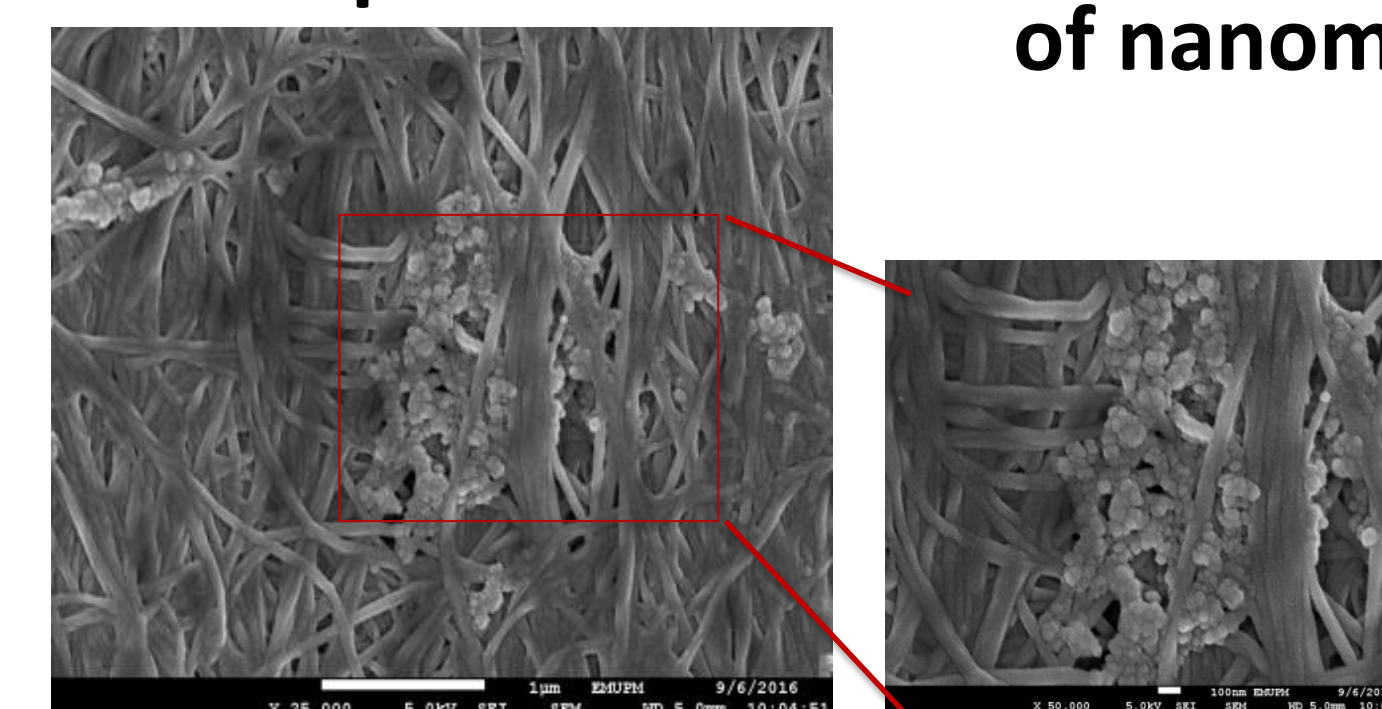
Bacterial nanocellulose fermentation



XRD patterns of nanocomposites



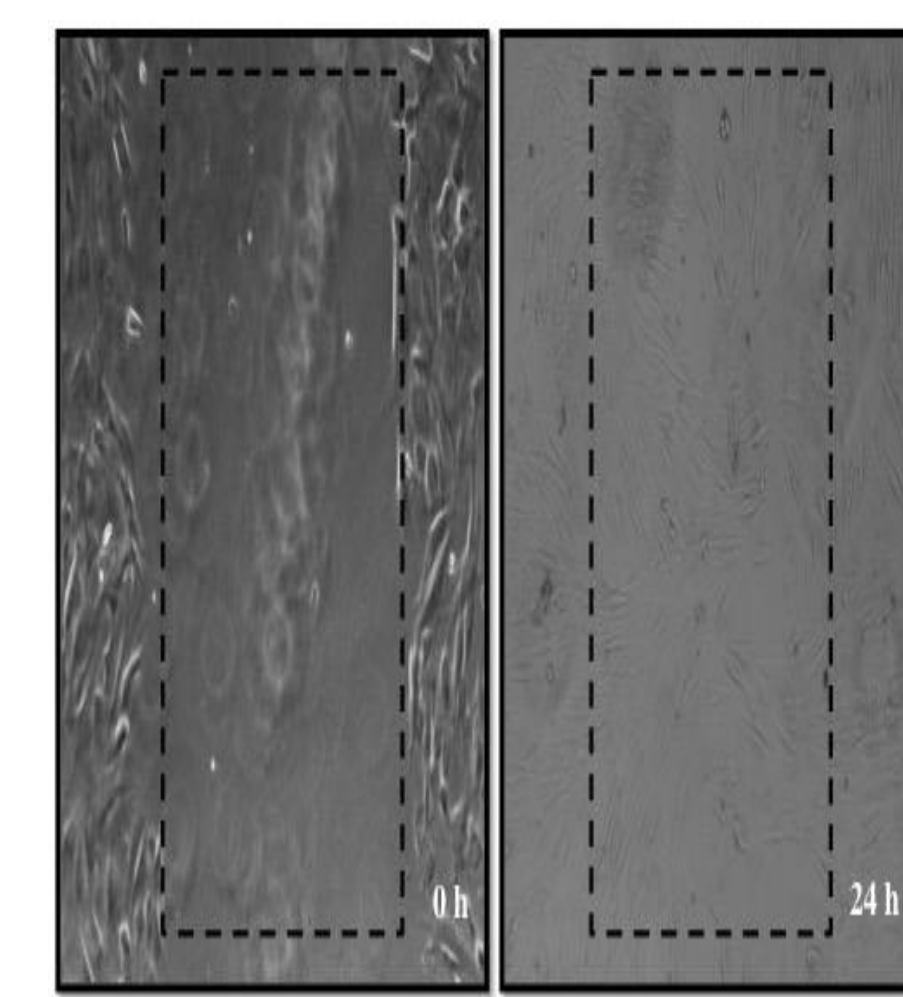
Particle distribution of nanomaterial



FESEM image of nanocomposite



Green composite wound dressing



Migration of HDF cell lines using the green composite wound dressing

## INTRODUCTION OF TECHNOLOGY

The technology highlights an effective bacterial nanocellulose preparation, which was locally isolated from the rotten fruit and incorporated with the nanomaterial synthesized by green methods to produce green nanocomposite wound dressing. It is focusing on the fabrication of wound dressings with efficient antimicrobial activities accompanied by healing-promoting biomaterials by a green and economic process to treat chronic and extensive traumas.

## INVENTION

It discloses use of a green wound dressing for healing minor and intensive injuries in diabetic patients. The dressing comprising bacterial nanocellulose and at least one green synthesized inorganic nanoparticle.

## ADVANTAGES

- **Economic, green and simple procedure.**
- Has both **antimicrobial** and **healing properties.**
- Effective on **chronic** and **extensive traumas** with reduced microbial infection, which is suitable for diabetic patients.

## MARKET POTENTIAL

The aging population is one of the major drivers of the advanced wound care markets worldwide. The rate of diabetes mellitus is rapidly increasing on the back of an aging population and lifestyle choices. It is estimated that about **617 million** people are **aged 65** or more at present, worldwide. By **2050**, this number is expected to jump to **1.6 billion**. Malaysia has around **3 million** diabetic population. Therefore, it exists a need for developing bacterial nanocellulose composite wound dressings having antimicrobial, high healing properties and greener methods for preparation thereof and also the nanocomposite to be incorporated therein. It has a great potential application to be used by wound care industry and end users.



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