PRESS RELEASE

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INSTITUTE OF BIOENGINEERING AND NANOTECHNOLOGY (IBN) DEVELOPS TRANSPARENT MEMBRANES FOR WOUND HEALING

1. Two researchers at IBN, Dr Yang Yi Yan and Ms Wang Li Shan, have created a novel transparent wound dressing using nanostructured materials.

2. This thin film made up of special polymers allows air and moisture to circulate freely between the wound and the environment, while protecting the injury from bacterial infection. This can accelerate the healing process.

3. Its transparent feature allows doctors to keep an eye on wounds like cuts or burns, thus helping them determine the best time to remove the dressing.

4. The membrane is also temperature-sensitive – it adheres to the skin at body temperature and is easily removed by a cold press.

5. In addition, cells can be grafted onto the dressing to promote tissue regeneration. Drug delivery systems can also be embedded in the nanoporous membrane to allow timely release of medication to improve the healing process.

6. According to Professor Jackie Ying, Executive Director of IBN, the membrane wound dressing is unique because of its nanostructured design. She said: “It allows the possibility of making the material transparent and of incorporating fine pores that allow water and air to permeate through. It is temperature-sensitive – a feature that facilitates the easy application and removal of the dressing. The membrane’s nanoscale design also allows the inclusion of nanoparticles that can be used in drug delivery.”

7. Prof Ying said it would take a year or two to commercialize the product. “We’re hoping to work with companies or to spin off new companies to develop this new product,” she said.
Institute of Bioengineering and Nanotechnology (IBN)
The formation of the Institute of Bioengineering and Nanotechnology (IBN), formerly known as the Institute of Bioengineering (IBE), was endorsed by the International Advisory Council for Singapore’s Biomedical Sciences in March 2002. It is one of five research institutes under the Agency for Science, Technology and Research’s (A*STAR) Biomedical Research Council.
IBN conducts research at the cutting-edge of bioengineering and nanotechnology. These research areas include: Delivery of Drugs, Proteins and Genes, Tissue Engineering, Artificial Organs and Implants, Medical Devices, Biological and Biomedical Imaging, and Nanobiotechnology.

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