



## TECHNOLOGY

# Microporous Bone-Implant Joints

## OVERVIEW

### Background

Biomedical implant devices such as artificial joints have become a mainstay of modern medicine, allowing greater mobility and quality of life for senior citizens, arthritis patients, and others afflicted with joint ailments. However, current hip joint implants, for example, only last between 12 and 15 years. The short lifetime is caused by poor implant-bone interfaces. To fix the problem, additional surgery is required to replace the joint, putting greater stress on the patient and increasing the overall cost of the implant.

A researcher at the University of Maryland has developed a new implant fabrication technique that promotes a stronger implant-bone interface, thus increasing the life of the implant and reducing implant costs and patient stress. The method involves creating micropores in the rough surface of the implant. The walls of the micropores have a nanoscale roughness, which provides a much greater surface area for bone cells to attach to the implant. This fabrication method is extremely cost-effective, especially when measured against the cost of additional surgeries. A patent application is pending.

### Applications

- The fabrication method is applicable to medical implants and other similar devices.

### Advantages

- The fabrication method adds little additional cost to the artificial joint manufacturing process.
- The increased lifetime of the resulting implant increases patient welfare and reduces associated medical costs.

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Patent(s) pending

### LICENSE STATUS

Contact OTC for licensing information

## **CATEGORIES**

- Medical implants
- Materials
- Industrial Processing

## **EXTERNAL RESOURCES**

- [US Patent 8,454,707](#)

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