



Stereoscopic folded biomaterial as specific and non-specific tissue defect fillers

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Experience: <https://scholars.lib.ntu.edu.tw/cris/rp/rp06220/otherinfo.html>

Market Needs:

Osteoarthritis is the most common clinical orthopedic disease and the main cause of adult disability. More than 300 million people worldwide is suffering from knee and hip osteoarthritis. Statistics have shown a significant annual increase of about 8-10% in the prevalence and disability rate since the 1990s. Over the past ten years, more attention has been paid to clinical treatment for osteoarthritis in wrist and ankle areas.

Our Technology:

Candidate biomaterials with decent mechanical properties and good biocompatibility have been manufactured into a striped shape. With different parameter combinations, including multiple choice of single thickness and numbers of folded layers etc, we are able to construct a multi-layer configured implant as joint spacer or filler for any tissue defects.

Strength:

The “folding structure” of the design gains extra stress (internal force) from the bend, which adds extra mechanical property to the device, providing elasticity for joint cushioning. The space created at the bending site allows remedial use of loading growth factor before implant. Also, this capacity is ideal for tissue ingrowth, which enhances implant fixation in order to withstand the mechanical demands of load bearing joints. In addition, the striped-design brings greater simplicity and convenience to surgeons performing the implant operation. Clinicians are able to trim the implant into suitable size, with befitting number of layers and thickness according to different clinical needs as defect fillers.

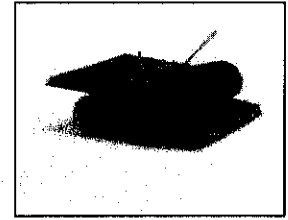
Competing Products:

Integra® PyroCarbon MCP 、 Artelon CMC spacer

Intellectual Properties:

Our team has been contributing all efforts in solving different orthopedic indications with various polymer materials. The design and development of each product is based on clinical practicality. Therefore, the development process of the product is pragmatic and feasibly designed to meet clinical needs. Recently, Professor Chang is endeavoring to apply for patents and commercialize products and technologies we developed. Prof. Chang has 10 Taiwan patents so far and intends to bring together academia and industry in order to improve life quality of patients suffering from pain with our products. (The most recent patent granted is TWI693922B)

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