Case Study

Name of the process:

The Rapid Forming of Tissue Engineered Bone

Developer's names, affiliation, emails and telephone numbers:

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Fundamentals of the process:

In hopes of translating tissue engineering to clinical applications, this process are focused on the rapid forming of tissue engineered bone. We are using the precise extrusion process of osteoconductive and osteoinductive material to form tissue engineered bone.

Advantages/Disadvantages:

- The perfect combination of material preparation and the forming process
- Sintering free process to keep the bio-active property of the material
- Rapid and precise forming process
- Custom-made tissue engineered bone according to different patients and implant parts
- Gradient structure similar to human bone
- The easy control of the complex structure of the tissue engineered bone

Suitable Application:

Orthopaedic Surgery

State of Development:

We can produce matrix scaffolds of tissue engineered bone using RP machine produced by CLRF.

Issues and Problems:

- The bad forming property of the materials in tissue engineering
- The combination of forming material and bone morphogenetic protein (BMP) through the forming process to ensure the slow releasing of BMP

Future research/development direction:

Rapid Forming processes to produce other kinds of matrix scaffolds in tissue engineering.

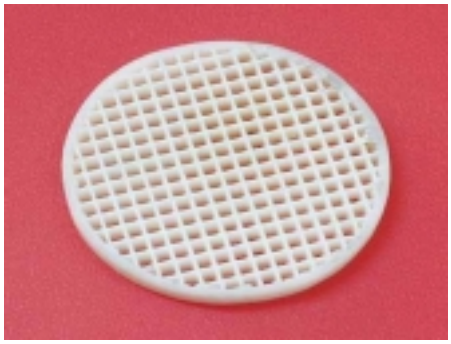

Figure: A matrix scaffold of tissue engineered bone