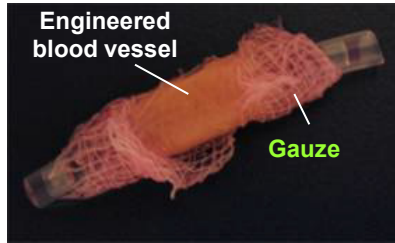
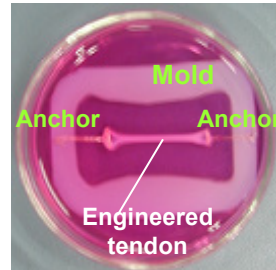


# Stem Cell Differentiation and Tissue Engineering on Natural Scaffold Materials

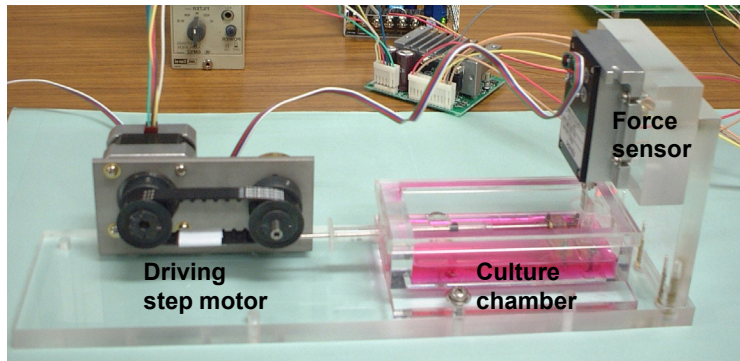
## Associate professor Zhonggang Feng



Engineered blood vessel with small diameter



Engineered tendon



Electro-tensile bioreactor for the culture of engineered cardiac tissue in commercially available CO<sub>2</sub>-incubator

### Content :

Regenerative medicine, holding the promise to repair or replace damaged organs on the background of severe shortage of the donor organs, is to apply the principles and methods of life science and engineering toward the development of biological substitutes to restore, maintain, or improve tissue functions.

At my laboratory, researches include the stem cell differentiation into heart cells, utilization of the natural materials as construct scaffold, and the development of bioreactor for the culture of engineered tissue. We have fabricated blood vessels with small diameter, small tendons potential for the replacement of damaged ones in hands. Right now, we are innovating the technologies in stem cell engineering, protein engineering, genetic engineering, and mechatronics to create engineered cardiac sac.

Keywords: natural scaffold materials, tissue engineering, stem cell engineering

Yamagata University Graduate School of Science and Engineering  
Research Interest : Regenerative Medicine,  
Biomechanics

E-mail : [zhgfeng@yz.yamagata-u.ac.jp](mailto:zhgfeng@yz.yamagata-u.ac.jp)  
Tel&Fax : +81-238-26-3728

