The Cutting Edge of Medical Devices

I recently attended a conference about some of the next generation of medical devices, and it looks like there will be a lot of changes on the horizon. Most medical devices are becoming faster, more portable, and connected, which means that the electronics need to become smaller, lighter, and in most cases, flexible. In recent years, 3D printing has also come to the forefront of medical device technology, allowing the potential of customizing anything from personalized prosthetic limbs to customized body organs.

Most of the 3D printing services focus on printing artificial limbs for the medical industry. The majority of the printers used in this area are the metal powder type printers with laser sintering. This allows for the use of titanium powders to customize and manufacture a part within a fraction of the time it takes compared to the current means of manufacturing. The lower cost FDM (the hot melt type of printer) 3D printers are also used to make prototypes for various instrument designs. Additionally, the use of various printed electronics for tracking and enhancement (think of RFID tags printed directly into the medical part for tracking, or printed sensors for monitoring blood pressure, glucose levels, etc.) were also discussed.

Out of all the printer and instrument manufacturers, the consensus was that the materials in general need improvement, as was especially the case with the 3D printer people. There is a demand for more FDA approved materials that have better flexibility, easier curing (in the case of the photopolymers), and better overall structural strength for the printed device (in the case of the photopolymer and hot melt type printers). ***At Taiyo, we are researching ways to improve materials for 3D printing platforms.*** With these printers gaining more utility with better 3D model complexity, the demand for new materials is higher than ever. *We are bringing our expertise to investigate how we can help to move this exciting new technology forward.*