세미나 요약 (Abstract)

강연제목 (Title)	1D soft electronic sensors for in-vivo biomedical applications		
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Healthcare is important for modern societies because of the rapid increase in aging population and the strong desi improve our quality of life. Especially, real-time measurements and preventative managements of information in body become more urgent, resulting in the emergence of electronic sensors that can be integrated in the body. Mos previous implantable sensing devices have mainly been developed in a planar structure which is not suitable to be app to complex structure of tissues and/or organs in the body. In addition, it is challenging to stably fix the planar soft sen devices onto moving or pulsatile organs. Typically, the implanted devices are sutured onto a target tissue and/or o for the fixation, but suturing of a soft implantable device is not efficient in clinical situations and could potent damage the implanted sensor. To overcome such practical limitations of previous two-dimensional implantable dev in in-vivo applications, one-dimensional sensing devices can be a promising solution that meet all the requirem needed for clinical practice.

In this talk, an electronic suture for wireless in-vivo strain sensing, which can overcome the existing limitation previous 2D electronic devices, is presented. To develop 1D electronic sensors, a fully biocompatible fiber electroc fabricated via an in-situ formation process of Au nanoparticles in a fiber matrix. Based on the conductive fiber electro a suturable strain sensing system which can be used for in-vivo applications is developed. The strain sensing sys exhibits outstanding sensitivity, stability, wireless readout, solderless property, and suturability, which overcomes sev practical issues of current 2D implantable devices which have been barely considered so far. Various functional sut including sensing, drug-eluting, and biodegradable capabilities can also be developed based on the conductive fi based electronic devices. The sensing and functional sutures are expected to connect the existing implantable electro with clinical and practical use.