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강연 제목: 카테터 제조 공정 및 최신 기술 동향

Introduction to the catheter manufacturing technology

Abstract:

The minimally invasive procedure that minimizes the size of the skin incision and enters the lesion for diagnosis/treatment is a common procedure. As the interventional procedure market grows, the minimally invasive medical device market is also growing rapidly at an average annual rate of 8.2%, and the tube-type medical device and catheter market, which are representative items, also grew at a high rate of 11.3%, 430 billion of dollars (2020).

The use of the catheter is not only drainage or drug injection, but also functional elements (temperature sensor, magnetic field sensor, contact force sensor, tactile sensor) are mounted on the distal part of the catheter. It is developing into a high-functioning smart catheter that performs procedures by mounting devices, micro-mirrors, and micro-motors. These high-functional catheters are generally composed of multi-lumen and multi-segment, and in order to manufacture them, various precision processes such as micro-extrusion, braiding, reflow, butt-welding, and laser welding are required.

In this presentation, we would like to introduce the manufacturing process for each stage required to manufacture a catheter with various functions, and introduce a case of optimizing the catheter manufacturing process for each disease.

Brief Biosketch

2011 KAIST 기계공학 박사

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