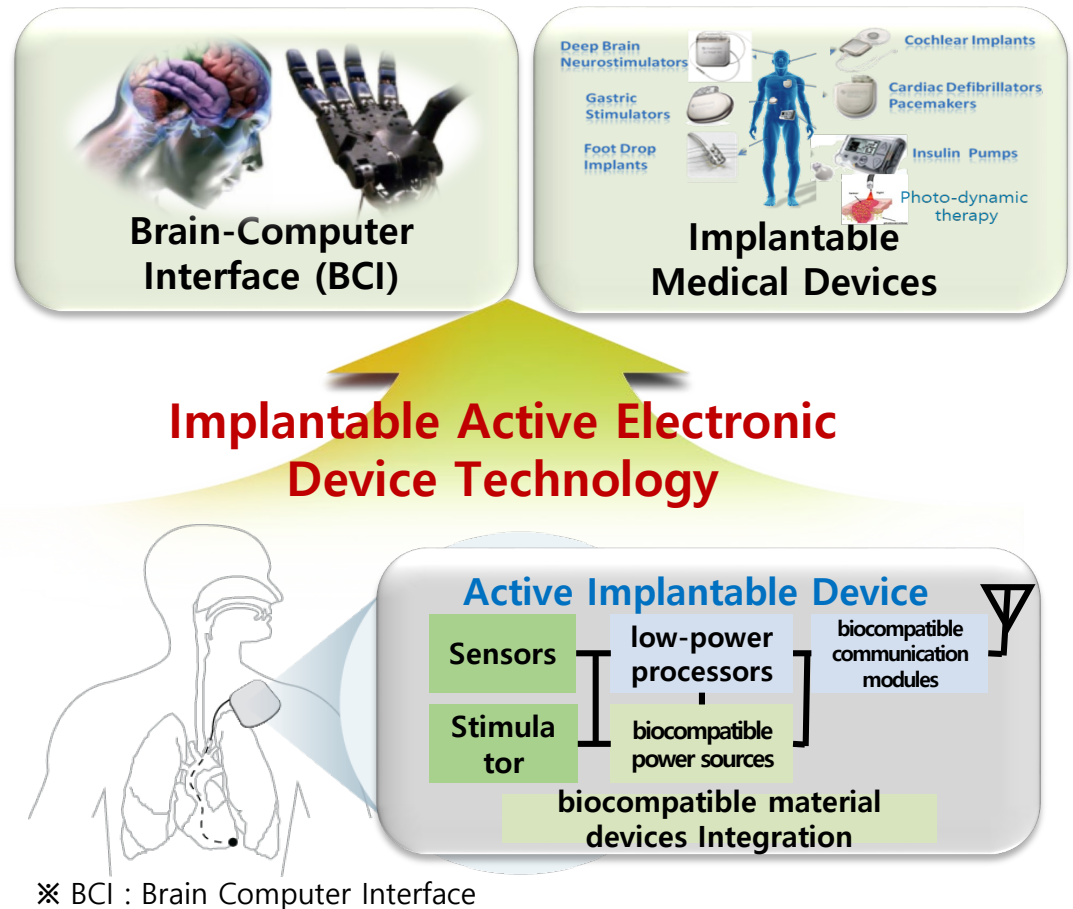


Implantable Active Electronic Device (Active Implantable Electronics)

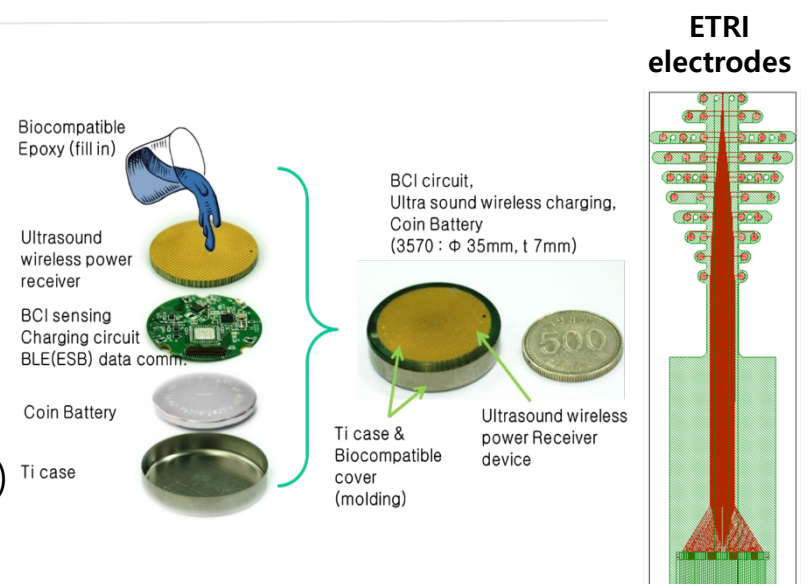
Overview and Configuration

- Implantable electronic device technology for high-quality biometric signal acquisition from the human body and advanced therapeutic applications
- Evolution of wearable devices from wearable to skin-attachable to implantable technology
- Pioneering next-generation advanced medical device markets and securing technological competitiveness through long-term, fundamental medical device research



Key Features

- Ultra-thin multi-channel electrodes ($\sim 7\mu\text{m}$, 40 channels) and 32-channel BCI signal input
- ECoG-triggered Spinal Cord Stimulation closed-loop control (10 msec control loop)
- Low-power ESB wireless communication protocol (2Mbps)
- Biocompatible ultrasonic wireless charging (40% efficiency)
- Biocompatible packaging (4-week inflammation stability)



Technological Competitiveness

- Flexible electrode technology and ultra-thin multi-channel electrode processing technology
- Direct integration of multi-channel biometric signal input circuits, neural stimulation circuits, and closed-loop control algorithms into a single device
- Remote monitoring technology based on ultrasonic wireless charging and wireless data communication
- Biocompatible packaging technology, ensuring the safety of human implantation

Application Products & Fields

- Core components for flexible EEG electrodes and flexible optogenetic photostimulators
- EEG analysis, deep brain stimulators, and BCI (Brain-Computer Interface)
- Expansion into composite intelligence IDX (therapeutic medical devices) and defense IDX(remote control) fields.