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강연제목: 차세대 뇌 인터페이스를 위한 생분해성 및 자가전개형 최소침습 전자소자 기술 Biodegradable and self-deployable electronics for next-generation brain interfaces

Abstract:

Implantable interfaces for monitoring of large-area brain activity is essential for accurate diagnosis, continuous treatment, and brain-computer interface (BCI) applications. However, the implantation of such devices requires invasive surgery, which poses risks and burdens for patients. Moreover, complications such as inflammation can occur during device removal, making the procedure more complex and time-consuming than the initial implantation. In this presentation, we introduce a next-generation interfacing technology for minimally invasive neurophysiological monitoring, which includes both the implantation and removal processes using biodegradable and self-deployable electronics. We minimally invasively implanted the device over an extended period, confirming its potential for in vivo use. The technology proposed in this study is expected to represent a significant advancement in the development of temporary and minimally invasive brain interfaces for future clinical applications.

Brief Biosketch

Jae-Young Bae obtained his Ph.D. degree in Department of Materials Science and Engineering from Seoul National University in 2024. He is currently a postdoctoral researcher at the Research Institute of Advanced Materials (RIAM) at Seoul National University. His research focuses on the development of biologically compliant materials, intelligent systems, and manufacturing methods for nextgeneration implantable devices.