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국문 강연제목: 투명 초음파 트랜스듀서의 최근 연구 동향

영문 강연제목: Recent advances in transparent ultrasound transducers for multimodal imaging

Abstract(영문):

Optical imaging offers high-resolution functional visualization but is limited by its shallow penetration depth due to tissue scattering. Ultrasound imaging provides safe, deep structural imaging but with lower resolution and no functional contrast. Combining the two yields complementary benefits, yet earlier integration faced challenges such as resolution loss, SNR degradation, and bulky designs. Transparent ultrasound transducers (TUTs) address these issues by enabling light and sound to share a single aperture, reducing mismatch and system complexity. In this talk, I will introduce the motivation for optical-ultrasound fusion, highlight recent TUT-based advances, and discuss future directions toward compact and clinically translatable multimodal imaging systems.

Brief Biosketch (간단한 이력, 연구/대외활동 소개,국문/영문)

조성희 박사는 2022 년 포항공과대학교에서 광음향/초음파 이중모드 영상 연구로 박사학위를 받았으며, 현재 전자전기공학과 연구조교수로 재직 중입니다. 주요 연구 분야는 투명 초음파 트랜스듀서, 초음파-광음향 영상, 실시간 영상 및 임상 적용이며, 최근 투명 초음파 트랜스듀서 연구를 활발히 진행하고 있습니다.

Seonghee Cho received his Ph.D. in Interdisciplinary Bioscience and Bioengineering from Pohang University of Science and Technology (POSTECH), South Korea, in 2022. He is currently a research assistant professor in the Department of Electrical Engineering at POSTECH. His research focuses on transparent ultrasound transducers, ultrasound and photoacoustic imaging, real-time imaging, and clinical translation, with ongoing active research on the development of transparent ultrasound transducers.