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국문 강연제목: 3 차원 다중 파라미터 광음향/초음파 생체 영상 기술 및 실용적 영상 보정
기법 연구

영문 강연제목: 3D Multiparametric Photoacoustic/Ultrasound Tomography and
Practical Image Correction Methods

Abstract

Photoacoustic (PA) imaging technique is a hybrid molecular imaging modality that provides optical absorption contrast with spatial resolution of ultrasound (US) in biological tissues. To fully describe the spatial distribution of chromophores (e.g., hemoglobin, melanin, etc.), various forms of three-dimensional (3D) PA imaging systems have been developed. As 3D PA imaging suffers from highly complicated image distortion compared to 2D PA imaging in practical situations, more advanced researches on 3D PA image correction, including AI-based techniques, are urgently in need. This presentation introduces 3D PA/US imaging systems developed for various *in vivo* human studies and PA image correction methods including an artificial intelligence (AI) technique to compensate the acoustic distortion of PA images from *in silico* to *in vivo*. To meet the expectations on PA imaging as a molecular imaging modality, future researches are encouraged to provide practically and quantitatively reliable image correction.

Brief Biosketch

- (2020) 포항공과대학교 전자전기공학과 박사 / Ph.D. @ Dept. of Electrical Engineering, POSTECH
- (2020-2023) 포항공과대학교 IT 융합공학과 연구원 및 연구조교수/ Researcher and Research Assistant Professor @ Dept. of Convergence IT Engineering, POSTECH (funded by PIURI Postdoctoral Scholarship)
- (2022-2023) Visiting Scholar @ Department of Radiology, Stanford University School of Medicine
- (2023-현재) 가톨릭대학교 의과대학 조교수 / Assistant Professor @ College of Medicine, The Catholic University of Korea
- (2023-현재) International Photoacoustic Standardisation Consortium (IPASC) - Data Management Team Co-leader