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강연제목: 테라헤르츠 영상기반 암 진단 시스템 및 지능형 진단 기술 개발 / Development of a Terahertz Imaging-Based Cancer Diagnosis System and Intelligent Diagnostic Technology

Abstract:

Terahertz electromagnetic waves are non-ionizing and harmless to human tissue, making them suitable for a wide range of medical applications, particularly due to their capability to analyze cells and tissues through spectroscopic methods. The field of terahertz imaging-based cancer diagnosis has been rapidly advancing. Initial studies in the early 2000s focused on skin cancer, followed by reports of diagnostic results for breast and colorectal cancers. More recently, significant findings have been reported for the diagnosis of gastric cancer, tongue cancer, and brain tumors. Notably, the use of terahertz imaging for brain tumor diagnosis has demonstrated excellent diagnostic performance, indicating high potential for clinical implementation.

In this presentation, we will provide an overview of terahertz spectroscopic imaging techniques and the latest advancements in imaging systems. We will also present the diagnostic results for gastric cancer, tongue cancer, and brain tumors using terahertz imaging. Furthermore, we will discuss the development of an intelligent cancer diagnosis technology based on terahertz imaging, integrated with emerging AI diagnostic technologies.

Brief Biosketch
 - 2013. 2 : 한국해양대학교 전기전자공학 박사학위 취득
 - 2013. 3 ~ 2015. 8 : 연세대학교 융합기술원 박사후연구원
 - 2015. 9 ~ 2017. 8 : 연세대학교 의과대학 연구조교수
 - 2017. 9 ~ 2024. 2 : 김해·의생명 산업진흥원 전임연구원
 - 2024. 3 ~ 현재 : 광주과학기술원 고등광기술연구소 연구부교수