USC Viterbi
School of Engineering
Ming Hsieh Department of Electrical and Computer Engineering

Ming Hsieh Institute Seminar Series

Medical Imaging

Practical Aspects of MRI Safety Test Methods of Active Implants

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Date: Friday, January 19, 2024
Time: 10:00 AM - 11:00 AM
Location: EEB 132

**** Refreshments will be served****

Abstract: Since the first successful MRI safety labeling of an implanted Deep Brain Stimulation (DBS) system approximately 20 years ago, active implantable medical device (AIMD) manufacturers have come a long way in designing their implants with MR safety in mind and in assessing what conditions of MR scanning (e.g., limits of RF and/or gradient) can allow MR imaging without compromising patient safety.

MR Conditional implants undergo a wide range of well-developed test methods before receiving FDA approval under the specified conditions of use. These test methods include exposure in realistic MR imaging scanning environments, benchtop injection testing, and development of appropriate risk assessments though physical experiments and modeling.

The seminar is an overview of the Practical Aspects of all MRI Safety Test Methods of active implants.

Bio: Louai Al-Dayeh holds an MD (foreign graduate General Practitioner), an MS in Electrical Engineering (Signal & Image Processing, USC 1997) and a PhD in Biomedical Engineering (fMRI & Medical Imaging, USC 1999).

Louai's work experience has been in the Medical Device industry. In a small company environment, that included being an imaging scientist, regulatory and quality strategist, and a senior technical manager reaching the title of Chief Scientific Officer. In a large company environment, that included experience with Cardiac implants and Neuromodulation implants. For the last 15 years, Louai has been a subject matter expert on MRI safety of implantable devices, leading technical teams on enhancing and innovating MR Conditional safety assessments and test methods.

Host: Prof. Krishna Nayak (ECE) knayak@usc.edu