Aiping Yao

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Nanchang University, Nanchang, 330031, China

EDUCATION

Swiss Federal Institute of Technology in Zurich (ETH Zurich), Zurich, Switzerland
PhD, Biomedical Engineering, 2019

- Dissertation: "*Novel Methods and Instrumentation for Scientifically Sound Assessment of MR Safety of Medical Implants*"

Chinese Academy of Science (GUCAS), China
M.A., Electrical and Communication Engineering, 2013
Central South University (CSU), China
B.A., Biomedical Engineering, 2010

WORKING EXPERIENCE

Nanchang University, China
Professor, 2024-now
Lanzhou University, China
Associate Professor, 2020-2023
Foundation for Research on Information Technologies in Society, Zurich, Switzerland
Project Leader, 2019-2020

PROFESSIONAL ASSOCIATIONS

IEC SC62B JWG1 Working Group, Memeber
IEC SC62B WG54 Working Group, Member
China Medical Device MRI Compatibility Standard Working Group, Member
National Medical Products Administration, External Consultant.
Medical Device Reliability and Maintainability Standardization Center, Member
Chinese Medical Equipment Association, Arrhythmia Branch, Committee Member
Chinese Biomedical Engineering Society, BioEM Committe, Committee Member

FELLOWSHIPS AND PROJECTS

Katja Poković Research Fellowship Award 2024
Scientific Innovation Leadership Talent Program of China 2025
Lanzhou Innovation Talent Program 2024
National Science Foundation of China: RF Safety Evaluation of Medical Implants under MRI Exposure. 2022 -2024
Science and Technology Innovation 2030 Program: Non-Invasive Brain-Machine Integration Applications. 2021-2026
The European Metrology Program for Innovation and Research (EMPIR) Program: Medical Implant Manufacturers' Safety procedures (MIMAS): procedures allowing medical implant manufacturers to demonstrate compliance with MRI safety regulations. 2018-2021

List of Representative Publications

[1] **A. Yao,** et al., Breast MRI in the prone position: impact on RF-induced heating of active implantable medical devices, *Physics in Medicine and Biology, 70*, 2025.

[2] **A. Yao,** Z. Li, M. Ma. Impact of MRI RF coil design on the RF-induced heating of medical implants: fixed B1+rms exposure vesus normal operating mode, *Physics in Medicine and Biology,* 69, 2024.

[3] **A. Yao,** et al., A CP-ANN-Based RF-Induced Heating Estimation Method for Passive Orthopaedic Implantable Devices Under 1.5 T and 3.0 T MRI, *IEEE Transactions on Electromagnetic Compatibility*, 2023.

[4] **A. Yao,** M. Ma, H. Shi. A machine learning-based approach for RF transfer function modeling of active implantable medical electrodes at 3T MRI, *Physics in Medicine and Biology*, 2023.

[5] **A. Yao,** E. Zastrow, E. Neufeld, M. C. Sempere, T. Samaras and N. Kuster. Novel test field diversity method for demonstrating magnetic resonance imaging safety of active implantable medical devices, *Physics in Medicine and Biology*, 65, 2020.

[6] **A. Yao,** E. Zastrow, E. Neufeld, N. Kuster. Efficient and reliable assessment of the maximum local in vivo tissue temperature increase at the electrodes of medical implants under MRI exposure, *Bioelectromagnetics,* 40(6):422-433, 2019.

[7] **A. Yao,** T. Goren, N. Kuster, Radiofrequency induced heating of broken and abandoned implant leads during magnetic resonance examinations, *Magnetic Resonance in Medicine*, 2021.

[8] **A. Yao,** E. Zastrow, N. Kuster. Data-driven experimental evaluation method for the safety assessment of implants due to RF-induced heating during MRI, *Radio Sicence*, 53(6):700-709, 2018.

[9] **A. Yao,** et al., Anatomical model uncertainty for RF safety evaluation of AIMD under MRI exposure, *Bioelectromagnetics*, 40(7):458-471, 2019.

[10] **A. Yao** et al., Induced radio frequency fields in patients undergo MR examinations: insights for risk assessment, *Physics in Medicine and Biology,* 66, 2021.

[11] **A. Yao,** P. Yang, M. Ma, Y. Pei. Exposure Optimization Trial for Patients With Medical Implants During MRI Exposure: Balance Between the Completeness and Efficiency, *Frontiers in Public Health*, 2021.

[12] J. Corcoles, **A. Yao,** N. Kuster. Experimental and numerical optimization modelling to reduce radiofrequency-induced risks of magnetic resonance examinations on leaded implants, *Applied Mathematical Modelling*, 96, 2021.

List of Standards Involved

[1] ISO/TS 10974, assessment of safety of magnetic resonance imaging for patients with an active medical implantable devices, International Organization for Standardization, Geneva, Switzerland. **(International Standard)**

[2] YY/T 1928-2023, Terminology and Classification of medical electrical equipment intended for use in the magnetic resonance environment **(Chinese Standard)**

[3] GB/T 2900 Medical Device - Terms and Definitions of Reliability and Maintainability. **(Chinese Standard)**

List of Patents

[1] CN115458143B, 一种基于四路并行传输的植入式医疗设备电磁模型传递函数验证系统 (Chinese Patent)

[2] CN 115561687 B, 一种优化植入医疗器械在 MRI 中射频发热的方法和系统 (Chinese Patent)