1. Record Nr. UNINA9910632868803321

Autore	Makarov Sergey
Titolo	Brain and Human Body Modelling 2021 : Selected papers presented at 2021 BHBM Conference at Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital / / edited by Sergey Makarov, Gregory Noetscher, Aapo Nummenmaa
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-15451-7
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (VI, 172 p. 81 illus., 80 illus. in color.)
Classificazione	SCI009000TEC024000TEC059000
Disciplina	610.28
Soggetti	Biomedical engineering Telecommunication Radiation dosimetry Biomedical Engineering and Bioengineering Microwaves, RF Engineering and Optical Communications Radiation Dosimetry and Protection
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part 1 Low Frequency Electromagnetic Modeling and Experiment. Tumor Treating Fields -- 1. Nichal Gentilal, Ariel Naveh, Tal Marciano, Zeev Bomzon, Yevgeniy Telepinsky, Yoram Wasserman, and Pedro Cavaleiro Miranda. The impact of scalp's temperature in the predicted LMiPD in the tumor during TTFields treatment for glioblastoma multiforme -- 2. N. Mikic, F. Cao, F.L. Hansen, A.M. Jakobsen, A. Thielscher, and A.R. Korshøj. Standardizing skullremodeling surgery and electrode array layout to improve Tumor Treating Fields using computational head modeling and finite element methods -- Part 2 Low Frequency Electromagnetic Modeling and Experiment. Neural Stimulation in Gradient Coils -- 3. Yihe Hua, Desmond T.B. Yeo, and Thomas KF Foo. Peripheral Nerve Stimulation (PNS) Analysis of MRI Head Gradient Coils with Human Body Models -- Part 3 Low Frequency ElectromagneticModeling and Experiment. Transcranial Magnetic Stimulation -- 4. Mohammad Daneshzand, Lucia I. Navarro de Lara,

Qinglei Meng, Sergey N. Makarov, Tommi Raij, and Aapo Nummenmaa. Experimental verification of a computational real-time neuronavigation system for multichannel Transcranial Magnetic Stimulation -- 5. Tayeb Zaidi and Kyoko Fujimoto. Evaluation and Comparison of Simulated Electric Field Differences Using Three Image Segmentation Methods for TMS -- 6. Qinglei Meng, Hedyeh Bagherzadeh, Elliot Hong, Yihong Yang, Hanbing Lu, Fow-Sen Choa. Angle-tuned Coil: A Focality-Adjustable Transcranial Magnetic Stimulator -- Part 4 Low Frequency Electromagnetic Modeling and Experiment. Spinal Cord Stimulation -- 7. Sofia R. Fernandes, Mariana Pereira, Sherif M. Elbasiouny, Yasin Y. Dhaher, Mamede de Carvalho, and Pedro C. Miranda. Interplay between Electrical Conductivity of Tissues and Position of Electrodes in Transcutaneous Spinal Direct Current Stimulation (tsDCS) -- Part 5 High Frequency Electromagnetic Modeling and Experiment. MRI Safety with Active and Passive Implants -- 8. James E. Brown, Paul J. Stadnik, Jeffrey A. Von Arx, and Dirk Muessig. RF-induced Heating Near Active Implanted Medical Devices in MRI: Impact of Tissue Simulating Medium -- 9. Gregory M Noetscher, Peter Serano, Ara Nazarian, Sergey N Makarov. Computational Tool Comprising Visible Human Project® Based Anatomical Female CAD Model and Ansys HFSS/Mechanical® FEM Software for Temperature Rise Prediction near an Orthopedic Femoral Nail Implant during a 1.5 T MRI Scan -- Part 6 High Frequency Electromagnetic Modeling. Microwave Imaging -- 10. Peter Serano, Johnathan Adams, Ara Nazarian. Modeling and Experimental Results for Microwave Imaging of a Hip with Emphasis on the Femoral Neck.

Sommario/riassunto

This open access book describes modern applications of computational human modelling to advance neurology, cancer treatment, and radio-frequency studies including regulatory, safety, and wireless communication fields. Readers working on any application that may expose human subjects to electromagnetic radiation will benefit from this book’s coverage of the latest models and techniques available to assess a given technology’s safety and efficacy in a timely and efficient manner. Describes computational human body phantom construction and application; Explains new practices in computational human body modeling for electromagnetic safety and exposure evaluations; Includes a survey of modern applications for which computational human phantoms are critical; This book describes modern applications of computational human modelling.