1. Record Nr. UNINA9910418327303321

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Titolo	Ultrasound Energy and Data Transfer for Medical Implants / / by Francesco Mazzilli, Catherine Dehollain
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-49004-1
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XXVII, 155 p. 152 illus., 60 illus. in color.)
Collana	Analog Circuits and Signal Processing, , 1872-082X
Disciplina	617.956
Soggetti	Electronic circuits Biomedical engineering Computer engineering Internet of things Embedded computer systems Circuits and Systems Biomedical Engineering and Bioengineering Cyber-physical systems, IoT
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Ultrasound in Medicine -- Regulations and System Specifications -- System Architecture: Control Unit -- System Architecture: Transponder -- Wireless Power Transfer (WPT) and Communication -- Conclusion.
Sommario/riassunto	This book presents new systems and circuits for implantable biomedical applications, using a non-conventional way to transmit energy and data via ultrasound. The authors discuses the main constrains (e.g. implant size, battery recharge time, data rate, accuracy of the acoustic models) from the definition of the ultrasound system specification to the in-vitro validation.The system described meets the safety requirements for ultrasound exposure limits in diagnostic ultrasound applications, according to FDA regulations. Readers will see how the novel design of power management architecture will meet the constraints set by FDA regulations for maximum energy exposure in the human body. Coverage also includes the choice of the acoustic

transducer, driven by optimum positioning and size of the implanted medical device. Throughout the book, links between physics, electronics and medical aspects are covered to give a complete view of the ultrasound system described. Provides a complete, system-level perspective on the use of ultrasound as energy source for medical implants; Discusses system design concerns regarding wireless power transmission and wireless data communication, particularly for a system in which both are performed on the same channel/frequency; Describes an experimental study on implantable battery powered biomedical systems; Presents a fully-integrated, implantable system and hermetically sealed packaging.

2. Record Nr. UNIORUON00022361

Titolo	Présence Francophone : Revue Semestrielle du Université de Sherbrooke / Centre d'Etude des Littératures d'Expression Française Faculté des Arts-Université de Sherbrooke
Pubbl/distr/stampa	Québec, : Université de Sherbrooke v. ; 24 cm Semestrale
Descrizione fisica	Descrizione basata su: anno 1971 n.2
Classificazione	CA SCAMBIO
Lingua di pubblicazione	Francese
Formato	Materiale a stampa
Livello bibliografico	Periodico