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Titolo	Wireless Power Transfer and Data Communication for Neural Implants : Case Study: Epilepsy Monitoring / / by Gürkan Yilmaz, Catherine Dehollain
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Descrizione fisica	1 online resource (XII, 110 p. 65 illus., 60 illus. in color.)
Collana	Analog Circuits and Signal Processing, , 1872-082X
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Soggetti	Electronic circuits Biomedical engineering Electronics Microelectronics Circuits and Systems Biomedical Engineering and Bioengineering Electronics and Microelectronics, Instrumentation
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- System Overview -- Wireless Power Transfer -- Wireless Data Communication -- Packaging of the Implant -- System Level Experiments and Results -- Conclusion.
Sommario/riassunto	This book presents new circuits and systems for implantable biomedical applications targeting neural recording. The authors describe a system design adapted to conform to the requirements of an epilepsy monitoring system. Throughout the book, these requirements are reflected in terms of implant size, power consumption, and data rate. In addition to theoretical background which explains the relevant technical challenges, the authors provide practical, step-by-step solutions to these problems. Readers will gain understanding of the numerical values in such a system, enabling projections for feasibility of new projects. Provides complete, system-level perspective for implantable batteryless biomedical system; Extends design example to

implementation and long term in-vitro validation; Discusses system design concerns regarding wireless power transmission and wireless data communication, particularly for systems in which both are performed on the same channel/frequency; Presents fully-integrated, implantable system and hermetically sealed packaging.