1. Record Nr. UNINA9910373905903321 Autore **Zhong Wenxing Titolo** Wireless Power Transfer: Between Distance and Efficiency / / by Wenxing Zhong, Dehong Xu, Ron Shu Yuen Hui Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2020 Pubbl/distr/stampa 981-15-2441-6 **ISBN** Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (X, 135 p. 109 illus., 70 illus. in color.) Collana CPSS Power Electronics Series, , 2520-8861 Disciplina 621.381044 Soggetti Electric power production Electronic circuits Electronics **Electrical Power Engineering Electronic Circuits and Systems** Electronics and Microelectronics, Instrumentation Mechanical Power Engineering Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Introduction of WPT -- Application of WPT -- Basic Theories -- General Nota di contenuto Modeling of Multi-Resonator WPT Systems -- Straight Domino-Resonator WPT -- Circular Domino-Resonator WPT -- Optimization of Dual-Receiver System -- Designing a Three-Coil System -- Designing a Dual-Frequency Dual-Receiver System -- Introduction on Maximizing WPT Efficiency -- Maximum Efficiency Point Tracking -- Using On-Off Keying Modulation for Impedance Transformation -- Designing a Reconfigurable WPT System -- Designing a Charging Time Control WPT System. . Sommario/riassunto Focusing on inductive wireless power transfer (WPT), which relies on coil resonators and power converters, this book begins by providing the background and basic theories of WPT, which are essential for newcomers to the field. Then two major challenges of WPT – power transfer distance and efficiency - are subsequently addressed, and multi-resonator WPT systems, which not only offer a way to extend

power transfer distance but also provide more flexibility, are

investigated. Recent findings on techniques to maximize the power

transfer efficiency of WPT systems, e.g. maximum efficiency point tracking, are also introduced. Without the constraint of cables, wireless power transfer (WPT) is an elegant technique for charging or powering a range of electrical devices, e.g. electric vehicles, mobile phones, artificial hearts, etc. Given its depth of coverage, the book can serve as a technical guideline or reference guide for engineers and researchers working on WPT.