Record Nr. UNINA9910760282303321 Autore Ballo Andrea Titolo High-Performance Integrated Charge Pumps : Design and Novel Solutions / / by Andrea Ballo, Alfio Dario Grasso, Gaetano Palumbo Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2024 **ISBN** 3-031-43597-4 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (171 pages) Altri autori (Persone) GrassoAlfio Dario PalumboGaetano Disciplina 621.3815322 Soggetti Electronic circuits Electronics Cooperating objects (Computer systems) Electronic Circuits and Systems Electronics and Microelectronics, Instrumentation Cyber-Physical Systems Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Introduction -- Integrated Charge Pump Basics -- Variations and Evolution of Dickson CP Topologies -- Strategies and Design for High-Speed Dickson CP Applications -- Strategies and Design for Low-Power -- Strategies and Design for Ultra Low-Voltage Dickson CP Applications -- Dickson CP Control Circuits -- Unconventional CP Applications --Conclusions. Sommario/riassunto This book enables readers to gain a deep understanding of the challenges related to the design of a charge pump (CP). Analysis, modeling, design strategies and topologies are treated in detail. Novel and high-performance CP topologies and related design are organized in a coherent manner, with particular care devoted to ultra-low power and energy harvesting applications. The authors provide basic theoretical foundations as needed, in order to set the stage for readers' comprehension of analyses and results. Exhaustive methodologies are

presented and analytical derivations are included, enabling readers to gain insight on the main dependencies among the relevant circuit

parameters. Although the material is presented in a formal and theoretical manner, emphasis is on the design perspective, using many practical examples and measured results. Provides a single-source reference to the analysis, modeling, design strategies and topologies of charge pumps; Includes methods and derivations, enabling insight into dependencies among the relevant circuit parameters; Emphasizes the design perspective, using many practical examples and measured results.