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Descrizione fisica	1 online resource (XX, 307 p. 152 illus., 97 illus. in color.)
Collana	Space Science and Technologies, , 2730-6410
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Soggetti	Physics Energy systems Electronic circuits Optical materials Electronic materials Aerospace engineering Astronautics Applied and Technical Physics Energy Systems Circuits and Systems Optical and Electronic Materials Aerospace Technology and Astronautics
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Design of Primary Power Subsystem -- Design of System-circuit Subsystem (SCS) -- Design Example of Power System -- Reliability and Safety Design for Power System -- Analysis and Control of Technical Risks in Power System -- Power System Testing and Environment Experiments -- Autonomous Management of Power System -- Space Task Requirements and Power Development Trends.
Sommario/riassunto	This book provides an introduction to the main design principles, methods, procedures, and development trends in spacecraft power systems. It is divided into nine chapters, the first of which covers the classification and main components of primary power system design and power distribution system design. In turn, Chapters 2 to 4 focus on

the spacecraft power system design experience and review the latest typical design cases concerning spacecraft power systems in China. More specifically, these chapters also introduce readers to the topological structure and key technologies used in spacecraft power systems. Chapters 5 to 7 address power system reliability and safety design, risk analysis and control, and in-orbit management in China's spacecraft engineering projects. The book's closing chapters provide essential information on new power systems and technologies, such as space nuclear power, micro- and nano-satellite power systems, and space energy interconnection systems. An outlook on future development trends rounds out the coverage.

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