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Sommario/riassunto	The photovoltaic (PV) inverter serves as the interface between the PV panels and the power grid and realizes the power conversion, which is the core equipment of the PV power generation system. With the development of PV industry, the requirements of functions or performances for PV inverters are also gradually proposed in practical applications, which consist of safety, generation efficiency, transmitted power quality, robustness to multiple disturbances, grid-friendly, continuity of power supply, and system reliability. To satisfy these requirements, this book puts forward a series of software-based advanced control technologies for PV inverters. Through these control technologies, the PV power generation system has gradually become a system with high safety, high reliability, high efficiency, and strong adaptability, which serves as a core support in modern power system.

To facilitate the understanding, the operating principle, model derivation, control schemes, and comprehensive verification results of the PV inverters are presented step by step in this book, which can serve as a guide for electrical engineers and researchers involved in the development of PV power generation. This is an open access book.