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Nota di contenuto	From Nuclear Fusion to the Radiated Energy on the Earth -- From Radiated Energy to Electric Energy: Physics of Photovoltaic Cell -- Photovoltaic Source Models -- Parameters Identification for Photovoltaic Source Models -- Photovoltaic Source Dynamic Modeling Issues -- Photovoltaic Source Emulation -- DC/DC Power Converters (for PV Source Emulation) -- Control of the DC/DC converters for PV source emulation.
Sommario/riassunto	Modeling of photovoltaic sources and their emulation by means of power electronic converters are challenging issues. The former is tied to the knowledge of the electrical behavior of the PV generator; the latter consists in its realization by a suitable power amplifier. This extensive introduction to the modeling of PV generators and their emulation by means of power electronic converters will aid in understanding and improving design and set up of new PV plants. The main benefit of reading Photovoltaic Sources is the ability to face the emulation of photovoltaic generators obtained by the design of a suitable equipment in which voltage and current are the same as in a real source. This is achieved according to the following steps: the source electrical behavior modeling, the power converter design, including its control, for the laboratory emulator. This approach allows

the reader to cope with the creation of an indoor virtual photovoltaic plant, in which the environmental conditions can be imposed by the user, for testing real operation including maximum power point tracking, partial shading, control for the grid or load interfacing, etc. Photovoltaic Sources is intended to meet the demands of postgraduate level students, and should prove useful to professional engineers and researchers dealing with the problems associated with modeling and emulation of photovoltaic sources.