

The article presents an overview of experimental layout design solutions and the general operation scheme of combined heat and power systems with a high-temperature solid oxide fuel cell (SOFC). This system is an environmentally friendly and energy-saving way to produce electricity and heat. The use of high-temperature SOFCs makes it possible to obtain ...

The International Journal of Power Electronics and Drive Systems (IJPEDS), p-ISSN: 2088-8694, e-ISSN 2722-256X, is the official publication of the Institute of Advanced Engineering and Science (IAES). This is a SCOPUS and ScimagoJR indexed journal, CiteScore: 3.5, SJR: 0.295, and SNIP: 0.647. The scope of the journal includes all issues in the field of power electronics, electric ...

ECPE is happy to support Power Electronic Devices and Components (PEDC), an open-access journal founded in 2021 and specifically focusing on power-electronic devices and components, including materials, fabrication, design, characterization, and applications. ... IGBT and power MOSFET modules are instrumental in power electronic systems and are ...

Hybrid renewable energy systems (HRES) integrating solar, wind, and storage technologies offer enhanced efficiency and reliability for grid-connected applications. However, existing control methods often struggle with maintaining DC voltage stability and minimizing power fluctuations, particularly under variable load conditions. This paper addresses this research ...

A novel multi-stage stochastic programming model is proposed for the expansion coplanning of gas and power networks considering the uncertainties in net load demand. Meanwhile, the nonanticipativity constraints are taken into account to guarantee the decisions should only depend on the information of realized uncertainties up to the present stage. Compared with the ...

An open access journal covering the development and application of power electronic systems and technologies, including the use of electronic components, the application of circuit theory and design techniques, and much more. Aerospace Power, IEEE Power Electronics Society Technical Committee on

Scope: The scope of the International Journal of Electrical Power & Energy Systems (JEPE) is focused on electrical power generation, transmission, distribution and utilization, from the viewpoints of individual power system elements and their integration, interaction and technological advancement. The scope covers modelling of power system elements, their design, analysis ...

Nowadays, ever-increasing energy demands and the depletion of fossil fuels require efficient and environmentally friendly technologies for energy generation. In this context, energy systems integration makes for a very strong proposition since it results in energy saving, fuel diversification, and the supply of cleaner energy. To this end, it is of the utmost importance to ...

Chinese Journal of Electronics (2021-2022) Cognitive Computation and Systems; ... With the power electronic components available in power system blockset (PSB), the MBC and single phase inverter circuits have been ...

IEEE Open Journal of Power Electronics. An open access journal covering the development and application of power electronic systems and technologies, including the use of electronic components, the application of circuit theory and design techniques, and much more.

First, power electronics components are described from scratch beginning with the most widely used power switches and the building blocks that can be formed with them. Second, a review of the power electronic devices, classified according to the way they are connected to the power system, is outlined.

Within this new paradigm, power electronic technology is a key component because of its ubiquitous nature in all the stages of the power system from generation to distribution and involving applications related to DC and AC systems .

IET Power Electronics is an influential open access journal publishing power electronics research spanning a wide range of applications across many different sectors. A simple photovoltaic (PV) system capable of operating in both grid-connected mode and stand-alone mode using multilevel boost converter (MBC) and line commutated inverter (LCI ...

Moreover, for optimum energy use, some of these systems are combined either with each other or with other conventional systems, such as diesel generators with PV systems (i.e., hybrid systems). This work aims to present a technical-economic study of PV/diesel autonomous hybrid systems to supply electrical power for an isolated house located in ...

Power electronics-based components fulfill several controllability functions in high-voltage transmission, with a varying degree of effectiveness, as exemplified in the generic transmission system shown in Fig. 21. Transmission system to illustrate the applications of various flexible transmission system components

system can transmit more power from the transmitter to the receiver than either the IPT system or CPT system alone without increasing the weight of the receiver. Due to the higher operating frequency requirements of the CPT system, some IC-WPT systems prefer to be designed to transfer data via the CPT system and power through the IPT system ...

Power Electronic Converters: Industrial Applications of Automatic Control: Renewable Energy, Storage and Smart Grid: Embedded Systems and Artificial Intelligence Applications: Electric Transportation: Factory and Building Automation: Electrical Machines and Drives: Human Factors in Industrial Eco-Systems: Sensors, Signal Processing and Fault ...

With large-scale grid-connected renewable energy, new power systems require more flexible and reliable energy storage power sources. Pumped storage stations play an important role in peak shaving, valley filling, and promoting renewable energy consumption. This paper presents the reasonable energy-abandonment operation of a combined power ...

Despite the availability of alternative technologies like "Plug-in Hybrid Electric Vehicles" (PHEVs) and fuel cells, pure EVs offer the highest levels of efficiency and power production (Pl&#246;tz et al., 2021). PHEV is a hybrid EV that has a larger battery capacity, and it can be driven miles away using only electric energy (Ahmad et al., 2014a, 2014b).

The establishment of a refined simulation model of the wind-solar-storage combined power generation system is conducive to in-depth study of the specific characteristics of wind-solar complementary power generation, and the model is the basis of research and has certain reference value for actual engineering. ... Coordinated control strategy ...

A combined power and refrigeration system consisting of ORC and VCC has been analyzed for the refrigeration application. The ORC is the prime mover for the VCC system, while it has been derived from waste-heat energy ...

Chinese Journal of Electronics (2021-2022) Cognitive Computation and Systems; ... Furthermore, this "smoothness" is further improved when more than two sources and two locations are combined. ... In the case of power systems, the notion of complementarity occurs when different energy sources work together to behave like an equivalent source ...

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1 Introduction. The single-phase 25 kV AC traction power supply system (TPSS), which performs the power and voltage transformation for electric trains, has been widely adopted in the electrified railway[.]. To meet the requirements of high speed and heavy haul transportation throughout Europe and China, new high power locomotives and electric multiple units have ...

Closed-Brayton-cycle (CBC) is a potential scheme to provide high-power electricity for hypersonic vehicles, but finite cold source onboard limits its power level. A thermoelectric generator (TEG) combined with CBC is a feasible power enhancement approach by extending the available temperature range of cold source. In this study, a performance assessment of the ...

3 days ago&#0183; To improve the communication speed and reliability of the transmitter and receiver of the

wireless power transfer system, this article proposes a three-channel M-ary frequency shift ...

With the development of energy Internet and renewable energy, the combined heat and power micro-energy grid (CHPMEG) has become an important carrier for the use of clean energy. In order to improve the living comfort of households and the utilization efficiency of wind power in winter, this paper proposes a coordinated optimal operation strategy of CHPMEG considering ...

The Series, Power Electronics and Power Systems, encompasses most areas of power electronics, electric power restructuring, and power systems in general. It fo-cuses on publishing advanced level textbooks, state-of-the-art titles, research mono-graphs, professional books, and reference works related to the areas of electric pow-

Chinese Journal of Electronics (2021-2022) Cognitive Computation and Systems; Digital Twins and Applications; Electrical Materials and Applications; ... At present, with the rapid development of power technology, it has been studied extensively that an integrated energy system (IES), such as combined heat and power (CHP) system, ...

Energy storage systems are essential in modern energy infrastructure, addressing efficiency, power quality, and reliability challenges in DC/AC power systems. Recognized for their indispensable role in ensuring grid stability and seamless integration with renewable energy sources. These storage systems prove crucial for aircraft, shipboard systems, and electric ...

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