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20.5.1 Study on the Effect of Plasma on the Microstructure of MCMB.

Sommario/riassunto

This proceedings book contains selected and expanded contributions presented at the 5th International Symposium on Plasma and Energy Conversion (ISPEC), held in Nanjing, China, on 27–29 October. 2023. These proceedings highlight the latest research findings, technological advances, and innovative ideas in plasma and energy conversion which are critical to addressing the global energy and environmental challenges. Oriented towards the international frontier of carbon emission reduction technologies and China's national strategic goals of carbon peak and carbon neutrality, plasma and related energy conversion has been gaining attention as a promising alternative to thermal-catalysis or electro-catalysis. The proceedings discuss and exchange cutting-edge scientific innovations and technological advances in fields such as the basic process of discharge plasmas, plasma-assisted synthesis of chemicals and fuels, plasma-controlled environmental pollution, plasma-assisted preparation and treatment of catalysts and function materials, plasma-interface interactions, plasma modelling and simulation technology, and high-voltage measurement and instrumentation, which show great industrial potentials in conversion and utilization of greenhouse gases (e.g. CO2 and CH4), nitrogen fixation, plasma deposition and chemical synthesis, environmental clean-up (e.g. gas cleaning and wastewater treatment), as well as the development of the corresponding plasma devices and driving power supplies. This collection of papers presents the main contributions of plasma and energy conversion in the form of separate chapters, including cutting-edge studies on conversion technology, synthesis and treatment technology, complex mechanism simulation and modelling, as well as in-situ detection and diagnosis. These proceedings are suitable for researchers engaged in fields like plasma chemistry, plasma-catalysis, discharge diagnosis and modelling, chemical modelling, and high-voltage applications. .