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(G) (POS-12) Innovative Carbon Dioxide Removal from the Air Utilizing Methane Dry Reforming via Plasma Technology

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This paper introduces a novel technology for the removal of carbon dioxide from the atmosphere using plasma technology, inspired by the dry methane reforming method. Carbon dioxide and methane are the primary greenhouse gases responsible for climate change on Earth's surface. Dry reforming of methane (DRM) entails the simultaneous conversion of methane and carbon dioxide into synthesis gas and higher hydrocarbons. We employ plasma technology to activate chemical reactions and eliminate carbon dioxide, providing a sustainable and efficient alternative to conventional methods. In this article, we explore the potential applications and environmental implications of carbon dioxide removal through various types of hot and cold plasmas. Additionally, we investigate the future prospects of this innovative technology in the realms of nuclear energy and environmental sustainability. For example, the utilization of microwave plasma shows promising implications for carbon capture and storage in nuclear energy applications.

The objective of this article is to examine new scientific methods of plasma technology for carbon dioxide removal and its synergy with energy technologies, such as hot plasma in fusion machines. Furthermore, we will compare the performance, conditions, and consequences of employing different types of cold and hot plasma for carbon dioxide removal, providing explanations for each approach.

Ultimately, through the presentation of the proposed model, we assert that plasma technology has the capacity to effectively eradicate carbon dioxide, demonstrating its innovative nature, adaptability, and ability to address current global challenges. This technology represents a sustainable and long-lasting solution.

Keyword-1

Carbon Cioxide Absorption

Keyword-2

Greenhouse Gas Reduction

Keyword-3

Plasma Dry Reforming Methane

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