

Abstract Submitted
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Analysis of high temperature combustion and plasma characteristics for magnetohydrodynamic power generation¹ TAE UK KANG, HEE REYOUNG KIM, Ulsan national Institutes of Science and Technology — Magnetohydrodynamic (MHD) based electric power generation is an eco-friendly generation system that uses heat from thermal power plants by formatting a plasma. To operate MHD generation, temperatures of more than 2,000 C are needed. Atmospheric pressure and oxygen concentration of 20 % combustion creates a combustion temperature of around 2015 C. At a pressure of 3 bar, the combustion temperature of more than 3000 C can be formed in oxygen enriched combustion. The study estimated the plasma generation rates based on temperature and seeding (K, Cs) to enhance electrical conductivity and confirmed that the corresponding temperature was applicable to create a plasma for exhaust gases.

¹Magnetohydrodynamic Plasma Generator

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