

عنوان مقاله:

Analyzing and optimizing the impact of influential factors on irreversibilities and entropy generation during combustion

محل انتشار:

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نویسندگان:

S AZAD - *Islamic Azad University, Mashhad Branch, Department of Mechanical Engineering*

D AMINI MOGHADDAM - *Islamic Azad University, Mashhad Branch, Department of Mechanical Engineering*

I ZAHMATKESH - *Islamic Azad University, Mashhad Branch, Department of Mechanical Engineering*

خلاصه مقاله:

Adequately predicting thermodynamic irreversibilities associated with transport and chemical processes is considered a crucial factor in optimizing combustion systems. Lots of studies have been performed in order to investigate the contributing factors in entropy generation and exergy loss, especially in laminar diffusion flames. The theoretical background of most of these studies relies on the local entropy generation and exergy transport equation. Thus, a theoretical analysis on entropy generation in various circumstances is presented. This analysis is used for optimizing the performance of energy conversion systems. According to previous studies, while numerous factors contribute to exergy loss, some of them like mass dissipation, in various gravity levels, appear to be negligible in comparison to the most influential ones namely, heat conduction and chemical reaction. The objective of this study is to scrutinize the impact of different factors separately through a holistic exploration of the results of previous works.

کلمات کلیدی:

entropy generation, exergy loss, irreversibility, combustion, chemical processes

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