



航空学报 » 2006, Vol. 27 » Issue (5) : 742-745 DOI:

论文

最新目录 | 下期目录 | 过刊浏览 | 高级检索

<< Previous Articles | Next Articles >>

梯度磁场推进扩散火焰燃烧的实验研究

阮晓东

浙江大学 流体传动及控制国家重点实验室, 浙江 杭州 310027

Experimental Research on the Promotion of Combustion in Diffusion Flames by Gradient Magnetic Field

RUAN Xiao-dong

The State Key Laboratory of Fluid Power Transmission and Control, Zhejiang University, Hangzhou 310027, China

摘要

参考文献

相关文章

Download: PDF (607KB) HTML OKB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 用数字粒子图像测速技术(DPIV)测量了扩散火焰周围气流在梯度磁场作用下的速度分布,并与无磁场作用下的速度分布比较。结果表明当梯度磁场作用于扩散火焰时,火焰周围气体运动被加速,火焰的形状变得尖锐,亮度增加。实验定量地验证了梯度磁场可以诱导气体对流的发生,从而进一步推进扩散火焰燃烧反应。

关键词: 燃烧 磁场 数字粒子图像测速技术 扩散火焰 对流

Abstract: The digital particle image velocimetry (DPIV) technique is used to measure the velocity distribution of gas flows around diffusion flames under the gradient magnetic field. The velocity distribution in the presence of the magnetic field is compared with that in the absence of the field. The results show that the gas is accelerated, and then the flame becomes sharper and more brilliant immediately when the gradient magnetic field acts on the flame. The experiment quantitatively verifies the existence of convection flows of gas induced by the gradient magnetic field, furthermore the convection flow promotes the combustion in diffusion flames.

Keywords: combustion magnetic field DPIV diffusion flame convection

Received 2005-03-19; published 2006-10-25

引用本文:

阮晓东. 梯度磁场推进扩散火焰燃烧的实验研究[J]. 航空学报, 2006, 27(5): 742-745.

RUAN Xiao-dong. Experimental Research on the Promotion of Combustion in Diffusion Flames by Gradient Magnetic Field[J]. Acta Aeronautica et Astronautica Sinica, 2006, 27(5): 742-745.

Service

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ Email Alert
- ▶ RSS

作者相关文章

- ▶ 阮晓东