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一种固冲发动机用流量调节装置设计(PDF)

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Title: A Flow Controller Design for Solid-rocket Ramjet Motor

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关键词: 固冲发动机; 流量调节装置; 方案研究; 仿真计算

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摘要: 为了使冲压发动机适应更宽广的工作包线,提高工作性能,充分发挥推进剂的能量,必须设计燃气发生器流量调节装置。文中针对一种固冲发动机用流量调节装置进行了设计,完成了结构与内流场仿真计算,在仿真计算的基础上加工试验件完成了热试试验,试验结果表明设计的流量调节装置满足冲压发动机要求,可以为流量调节装置将来的实际应用作技术储备。

Abstract: In order to improve the output performances, further broaden operating envelope and give full scope to the propellant performance; solid-rocket ramjet motor needs flow controller. In this paper, a flow controller was designed for solid-rocket ramjet motor, its intensity and inner flow field were simulated, and the test piece was machined to finish the test. The results show that the flow controller meets the requirement of solid-rocket ramjet motor, laying technological foundation for practical application of flow controller.

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