

简讯

新月形稳定器的新传焰方法

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1. 问题的提出

沙丘驻涡火焰稳定性试验研究发表后,工程部门相应开展了应用研究工作,并取得可喜进展。但在结构设计时,为了安装和传播火焰的需要,不得不增加一些构件,目前工程设计中已采用的连焰结构是连焰管和传焰筋。(图1)连焰管(图1a)用来实现新月形沙丘之间 y 方向的传焰。传焰筋(图1b)用来实现新月形沙丘之间 z 方向的传焰。

为实现传焰而采用上述结构,除增加流阻外,在这些构件的后方容易出现小漩涡并挂火,此时,新月形沙丘容易被烧蚀。

2. 新的传焰方法

为了解决上述问题,对新月形沙丘间的传焰方法做了专门试验。利用加力燃烧室内气流不是平直流的特点,并通过实际观察,看到新月形沙丘后方的火焰有摆动现象(图2)。

试验还发现,气流流过新月形沙丘后,沙丘两侧的气流向尖角卷去,并在尖角处发散,但只要点燃了E、F处的混合气,火焰仍能回传到C、D处,并将新月形沙丘后方的混合气全部点燃。可见,只要恰当地选择两个新月形沙丘之间的间距 l ,不需设置连焰管,就可完成 y 方向的传焰。

如果采用新月形沙丘切角相接的方案,则 y 方向的传焰本来就不成问题。

恰当选择新月形沙丘间沿三个方向的距离,实现新月形沙丘之间的传焰,已在航空发动机加力燃烧室中进行了试验,结果证明传焰迅速可靠,并避免了由于增设的传焰构件后方挂火引起的烧蚀现象。

3. 结论

(1) 新月形沙丘在应用中出现的烧蚀现象不是它固有的弱点,而是结构设计不适应新月形沙丘的特点而造成。

(2) 合理地安排新月形沙丘之间的相对位置,可以实现它们相互间的传焰。

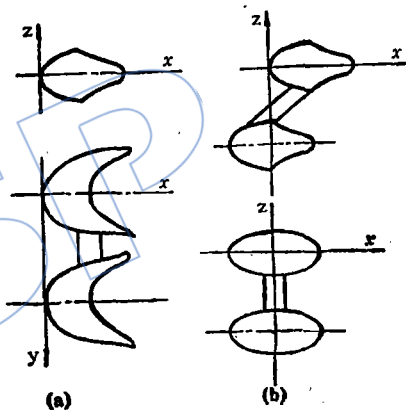
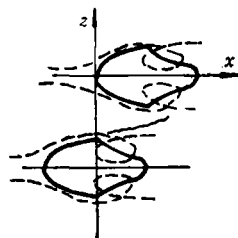


图1 连焰结构



methods. From the viewpoint of damage, the physical unequalities which LDR and IDR should fit are derived. With the data of materials available abroad it is verified that the scatter band and standard deviation by LDR are smaller than those by IDR. For the same damage, the predictability of SEP appears a little better than that of SRP.

STEADY-STATE UNBALANCE RESPONSES FOR A MULTISPAN ROTOR

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Abstract

A node transfer matrix is deduced which considers the angular stiffness and damping in spline coupling. The steady-state unbalance responses for a rotor with several spans are obtained by using Lund method and the simplified transfer matrix method. An model rotor has also been experimented so that the damping ratio, eccentricity and deflection are measured with amplitude-frequency characteristic method. The steady-state unbalance responses have been obtained from these data. Both analytical and experimental results are in good agreement.

CORRESPONDENCES

EFFECT OF POLUTION ON HOT-WIRE ANEMOMETER MEASUREMENT

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A NEW FLAME PROPAGATION TECHNIQUE FOR BARCHAN FLAME-HOLDER

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