

可控活化热氛围燃烧试验系统的研发

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摘要 对可控活化热氛围燃烧器进行了重新设计, 并将其用于均质充量压缩着火(HCCI)低温氧化阶段的反应机理研究。该试验装置利用氢气/空气预混合气的高温产物来形成可控活化热氛围, 能方便地通过改变协流当量比而改变协流的热氛围、氧氛围和湍流场。试验结果表明, 该可控活化热氛围燃烧试验系统的设计达到了安全要求和设计目的。

关键词 [动力机械工程](#), [燃烧器](#), [可控活化热氛围](#), [温度场](#)

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Development of experimental system of novel controllable active thermo atmosphere combustor

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Abstract An experimental system of novel controllable active thermo atmosphere combustor (CATAC) was redesigned and applied to study the combustion mechanism of homogeneous charge compression ignition (HCCI) under the condition of low temperature oxidation. The controllable active thermo atmosphere was created by hot product of H₂/Air premixed combustion. The system can easily change coflow temperature, oxygen mole fraction and turbulence parameters by changing the coflow mixture equivalence ratio. The experiment results show that the designed CATAC system meets the safety request and design target.

Key words [power machinery and engineering](#), [combustor](#), [controllable active thermo atmosphere](#), [temperature field](#)

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