

不同掺氢比天然气发动机的燃烧排放特性

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摘要: 在电控喷射、火花点火的增压发动机上进行了掺氢比(氢气占混合气的体积分数)为0~50%HCNG混合气的固定工况试验,又通过改变点火提前角和当量空燃比,找出不同掺氢比混合燃料的最佳点火提前角和稀燃极限。试验结果表明:HCNG发动机最佳点火提前角随掺氢比的增加而减小,指示热效率则随掺氢比的增加而增加;稀燃极限随掺氢比的增加而增加;燃烧持续期随掺氢比的增加而减少,着火延迟期随掺氢比的增加而减少;随着掺氢比的增加,NO_x和CO排放量升高,CH₄排放量降低。An experimental study on combustion and emission characteristics in a manifold-injection SI turbocharged HCNG engine with several HCNG blend ratios (0~50%) under a certain condition has been done. The results showed that with the HCNG blend ratio rising, the maximum brake torque timing (MBT) of the HCNG engine decreased and the indicated thermal efficiency increased. The lean operation limit was enlarged by increasing the HCNG blend ratio. The combustion duration and the ignition lag were both reduced with the HCNG blend ratio increasing. At last with raising the HCNG blend ratio, the exhaust NO_x and CO raised, and contrarily the exhaust CH₄ fell.

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