

SPACE PROPULSION SYMPOSIUM (C4)
Propulsion System (1) (1)

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STUDY ON COMBUSTION CHARACTERISTICS ACCORDING TO RECESS LENGTH FOR A
ROCKET ENGINE USING GAS METHANE/LOX AS PROPELLANTS

Abstract

In this study, coaxial shear/swirl type injectors using gas methane and lox as propellants were designed and combustion tests were performed to evaluate combustion characteristics according to recess length. In order to evaluate a reproducibility, every tests were tested two times on each injector. Combustion characteristic and stability would be represented by Characteristic Exhaust Velocity(C^*) and fluctuation of chamber pressure. The experimental results showed that combustion efficiencies were not too different between these injectors and combustion stability was confirmed by pressure fluctuations of these injectors showed lower than 5% during combustion tests.