Paper ID: 74482
interactive
student

IAF SPACE PROPULSION SYMPOSIUM (C4)
Late breaking abstracts (LBA)

Author: Ms. Sarah Dias
SRM Institute of Science and Technology, India

Mr. Vinayak Malhotra
SRM University Chennai, India

ON THE ROLE OF ARTICULATED THERMOACOUSTICS IN ENERGY TRANSITION IN SPACE PROPULSION

Abstract

Present work, attempts to resolve acoustics on the onset of large scale propagating fires owing to the instability. Systematic experimentation is carried out to explore the phenomenon of energy transition with acoustics. A simple experimental setup is upraised, comprising of acoustic source, homemade matchsticks as fuel and external source, igniter, and facility for measurement and optical shadowgraphy. The self ignition and pilot fuel fire propagation rate, with variation in the interspace distance , number of sources, acoustic frequency, acoustic source location will be detailed. with The type and structure of flames. The work is primarily motivated by the need to have technologically enhanced combustion understanding and for fire safety applications in space propulsion. The results, are likely to be very useful for combustion operated systems, along with wide range of practical, functional and engineering applications in the form of testing, validation and and designing of the efficient propulsive systems.