

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

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SURVEY ON THE GREEN PROPULSION SYSTEMS: FROM THE LAB SCALE TO THE PILOT  
SCALE-UP, HAN IS A GOOD EXAMPLE**Abstract**

The development of green propellant is of importance for safer handling and higher cost effectiveness than conventional toxic hydrazine propellant. In terms of green liquid propellant, hydroxylammonium nitrate (HAN) offers better performance and lower toxicity than hydrazine. Extensive studies have been conducted on HAN decomposition using different techniques. Due to its ionic nature, HAN can be electrolyzed compared to hydrazine. Therefore, other than conventional thermal and catalytic decompositions, electrolytic decomposition of HAN is also possible. The thermal decomposition of HAN has been performed in different conditions of temperatures and pressures. In addition, the effect of some additives on its thermal behavior. Finally, the 20 N thruster has been developed and the shape of different catalysts has been evaluated and compared in terms of performance and reactivity.