

IAF SPACE PROPULSION SYMPOSIUM (C4)
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Author: Ms. OLIVIA MWANIKI
Kenya Space Agency (KSA), Kenya, o.mwaniki@ksa.go.ke

HIGH- POWER SOUNDING ROCKETS

Abstract

Abstract The Rocket Propulsion Laboratory at the Kenya Space Agency (RPL-KSA) primarily focuses on research in high power propulsion system design and development as well as design and development of high power rocketry systems providing the young professionals with experiential learning opportunities to develop critical skills and knowledge in designing, building and testing rocket subsystems. Current project includes a modular sounding rocket using solid propellant, design and analysis of rocket recovery systems also known as KSA Twiga-1. The RPL-KSA has established partnerships and offer mentorship to university students who are designing, developing and researching on rockets. One of the support system it offers is to the Nakuja project being conducted by students at the Jomo Kenyatta University of Agriculture (JKUAT) and Pan African University Institute for Basic Sciences Technology and Innovation (PAUSTI). Nakuja project aims to build a liquid-fuel rocket to bring small satellites into the orbit. This project describes the research and development effort of the solid sounding rocket which focuses on the principles of systems engineering with highly detailed system/subsystem designs for rocket systems and propulsion systems. Recent advances in CubeSat design and CubeSat related missions as well as the need for inexpensive access to space has led to several design and testing of propulsion systems as well as launch vehicle design, especially in Kenya. The mission of the Kenya Space Agency rocket propulsion laboratory is to design, construct and successfully launch high power rocket vehicles.