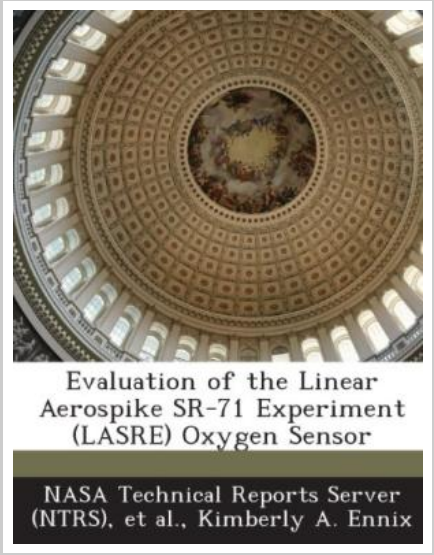

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Evaluation of the Linear Aerospike Sr-71 Experiment (Lasre) Oxygen Sensor

By Kimberly A. Ennix

Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 28 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.The Linear Aerospike SR-71 Experiment (LASRE) was a propulsion flight experiment for advanced space vehicles such as the X-33 and reusable launch vehicle. A linear aerospike rocket engine was integrated into a semi-span of an X-33-like lifting body shape (model), and carried on top of an SR-71 aircraft at NASA Dryden Flight Research Center. Because no flight data existed for aerospike nozzles, the primary objective of the LASRE flight experiment was to evaluate flight effects on the engine performance over a range of altitudes and Mach numbers. Because it contained a large quantity of energy in the form of fuel, oxidizer, hypergolics, and gases at very high pressures, the LASRE propulsion system posed a major hazard for fire or explosion. Therefore, a propulsion-hazard mitigation system was created for LASRE that included a nitrogen purge system. Oxygen sensors were a critical part of the nitrogen purge system because they measured purge operation and effectiveness. Because the available oxygen sensors were not designed for flight testing, a laboratory study investigated oxygen-sensor characteristics and accuracy over a range of altitudes and oxygen concentrations. Laboratory...

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