Opportunity Title: Sensor Technology
Opportunity Reference Code: 0010-NPP-MAR22-GRC-TechDev

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0010-NPP-MAR22-GRC-TechDev

Application Deadline 3/1/2022 6:00:00 PM Eastern Time Zone

Description **Opportunity Restricted to US Citizens Only**

The objective of the sensor research is to develop minimally intrusive, multifunctional, miniaturized smart sensors including microelectromechanical systems (MEMS) and MEMS type structures for use in harsh environments. Research focuses on measurement of such parameters as surface temperature, strain, pressure, chemical species, gas temperature, gas flow, turbulence, and heat flux on propulsion system materials and components. Clean room processing and device test facilities are used in the fabrication and testing of the thin-film based micro- and nano-devices to improve the sensor performance. Surface-science and electron microscopy techniques are used to characterize the chemistry and structure of thin-film devices.

In the control sensor work, the objective is to develop long-life sensors to measure temperature, strain, pressure, cracking, and chemical species in order to provide information on engine conditions. This information can be used to continuously monitor engine health, control emissions, and to provide early warning for serious breakdowns in engine structural integrity. These sensors must be reliable for long-term operation in harsh environments.

Location:
Glenn Research Center
Cleveland, Ohio

Field of Science: Technology Development

Advisors:
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Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.