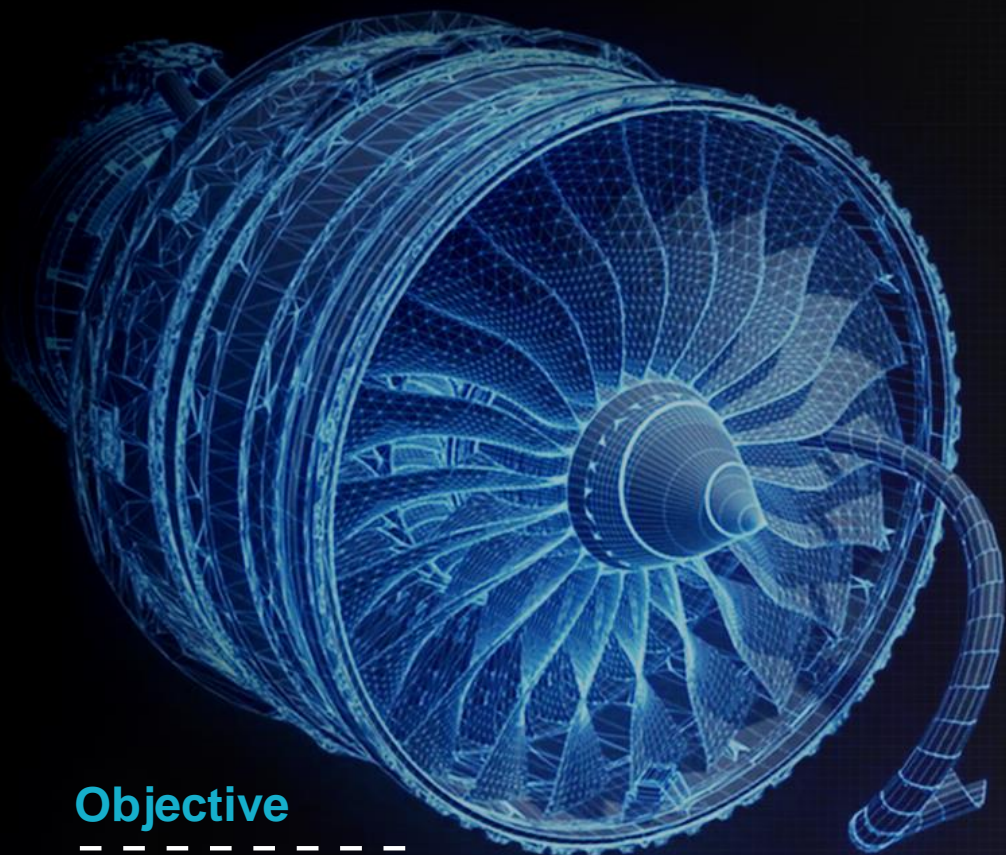


Self-powered SO₂ Sensors for Harsh Environment

Miniaturized gas sensor with ruggedized electronics packaging solutions and self powered battery offers best opportunity for aero engine applications

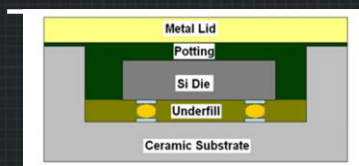


Objective

This programme focuses on the systematic design and development of miniaturized SO₂ sensors along with packaging and energy source for harsh environment applications featuring high temperature and strong vibration. The ultimate goal is to achieve the wide deployment of self-powered SO₂ sensors to aero engines for effective monitoring of sulphidation for the sake of engine reliability and performance.

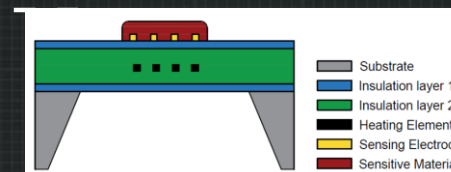
IoT 1.1 Ruggedized Sensor Packaging

Design and investigation of novel packaging materials and technologies for sensors under harsh environment in aero engines.



IoT 2.1 Miniaturized/Embedded Sensing

Realization of a new generation solid state SO₂ sensor based on Si/SiC MEMS technology for high temperature turbine engine applications.



IoT 3.1 Energy Harvesting Sensor Technology

Development of ionic liquid-based kinetic energy harvester and battery operating at high temperature realized by microfabrication technology.

