UPISC UNIVERSITY OF PITTSBURGH INFRASTRUCTURE SENSING COLLABORATION WORKSHOP

NATIONAL ENERGY TECHNOLOGY LABORATORY

Towards Portable and Simultaneous Gas/Temperature Fiber Optic Point Sensor Interrogator for Electrical Assets Health Monitoring

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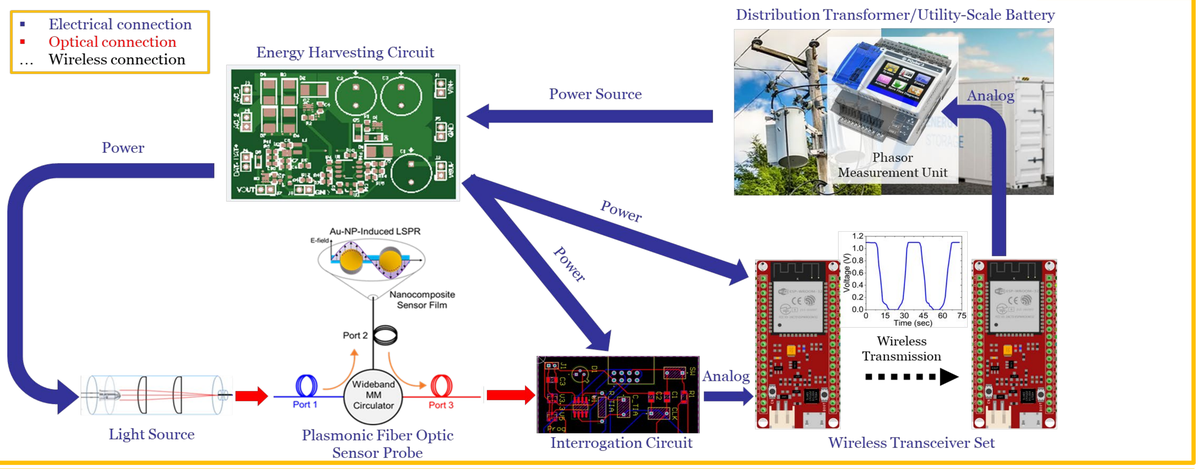
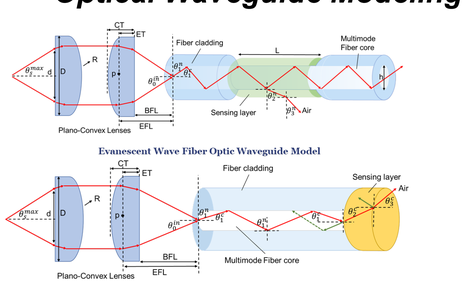
Sensor Interrogator System Overview

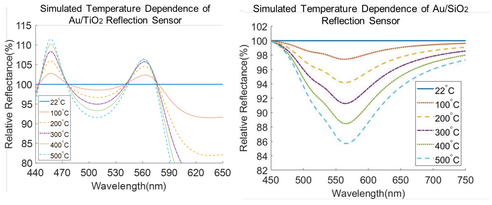
Patented



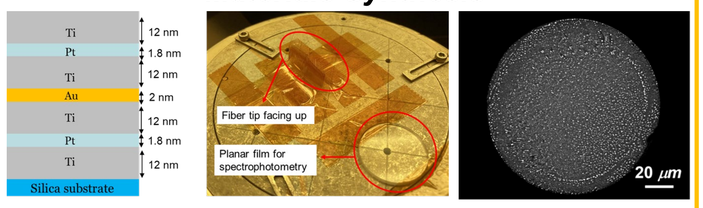
Sensing Layer Materials Development

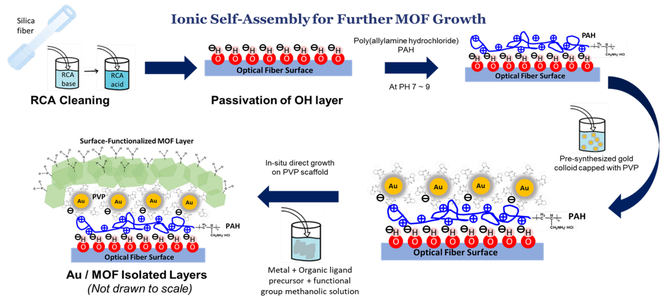
Optical Waveguide Modeling





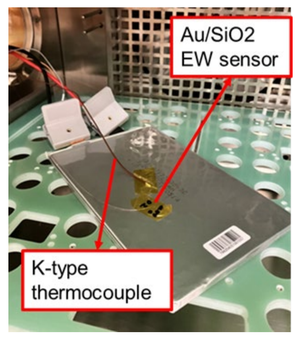
Materials Synthesis

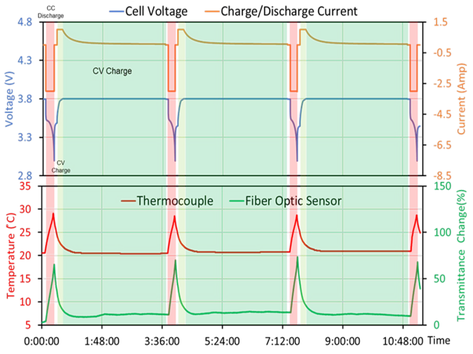


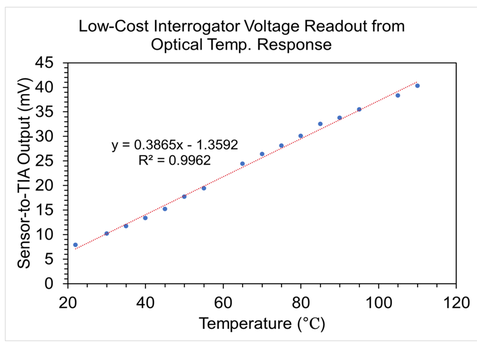


Sensor Dynamic Response and Calibration

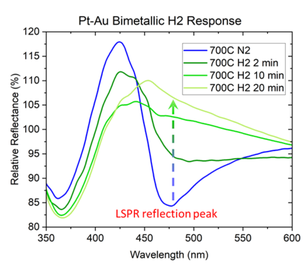
Temperature (Au/SiO2, 20 ~ 100s℃)

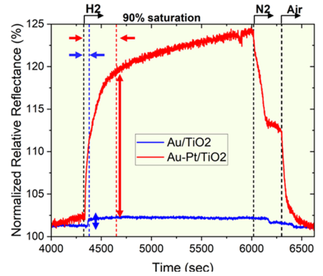


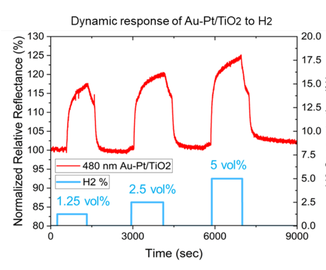


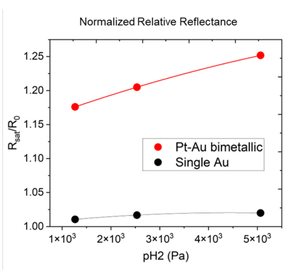


Extreme Environment H2 (Au-Pt/TiO2, 700℃)









Temp. Cross-Sensitivity with CO2 (Au/ZIF-8, 20 - 70℃)