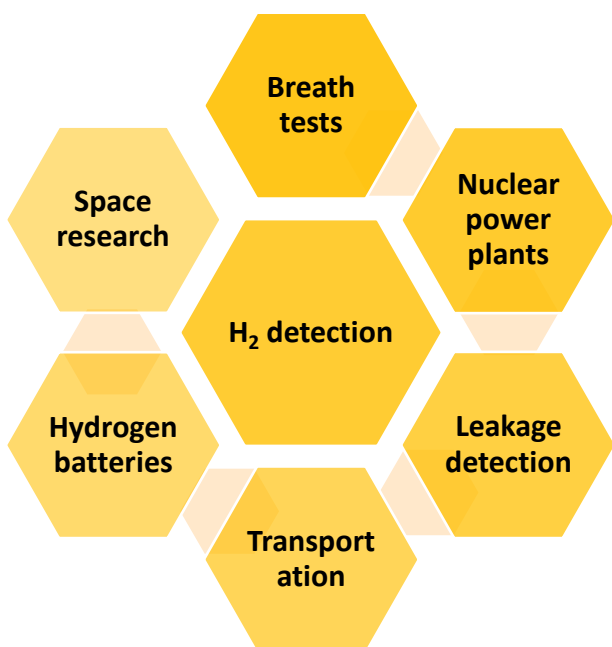




Room Temperature Optical Hydrogen sensing properties of nanostructured sol-gel synthesized Pt-WO₃ thin films

Nisha¹, Dr. Palash Kumar Basu¹

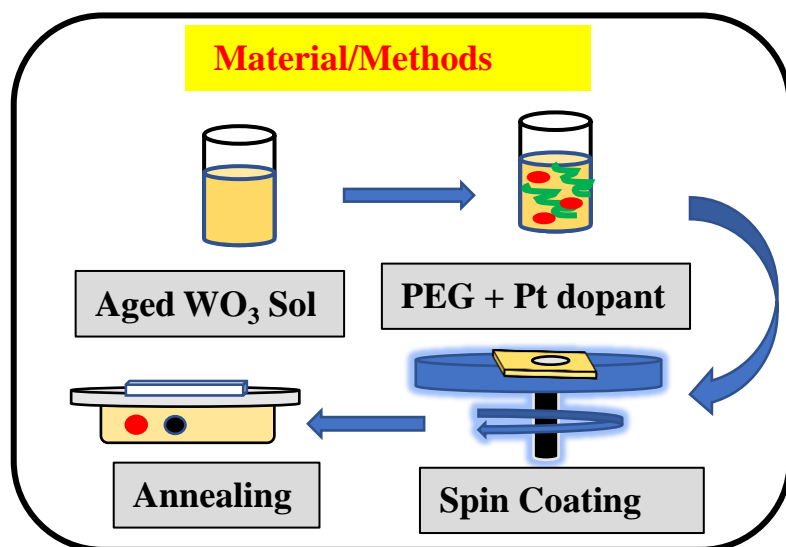
¹Department of Avionics, Indian Institute of Space Science and Technology, Valiamala, Kerala, 695547, India



Problems with the existing chemiresistive sensors

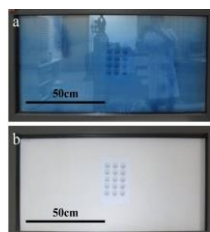
- Sensitive to environmental changes
- Operate at high temperatures.
- High power consumption due to microheater.
- Highly susceptible to electromagnetic noise, also suffer from cross sensitivity to other gases.

Material/Methods



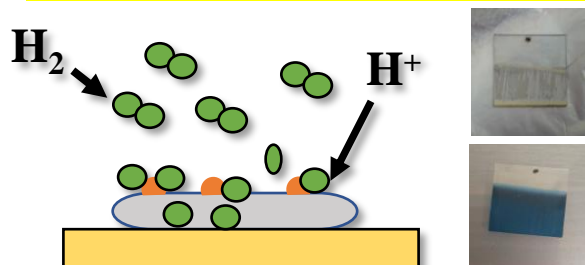
Gasochromic sensing Advantages

- Low concentration detection at safe operating temp.
- Highly sensitive and selective towards H₂ gas.
- Also used in Smart Glazing, switchable windows whose color can be switched from colored to transparent state.
- Simple and low cost construction

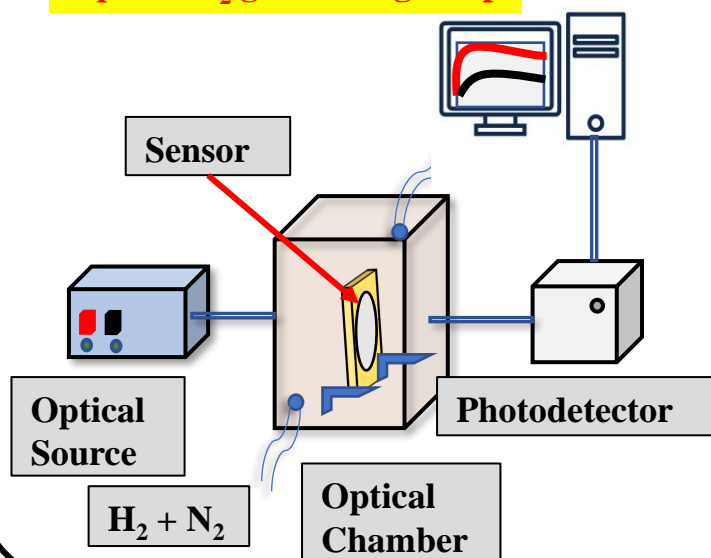


Gasochromic window under coloring and bleaching state¹

Hydrogen Sensing Mechanism



Optical H₂ gas sensing setup



Optical H₂ Sensing Results

