

# Seminar

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## Institute for Plasma Research

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**Title :** Porous Metal Oxides: Synthesis and Applications

**Speaker:** Dr. Vanarajsinh Jashavantsinh Solanki

Indian Institute of Science, Bengaluru

**Date :** 30th August 2018 (Thursday)

**Time :** 03.30 PM.

**Venue :** Committee Room 3, (New Building), IPR

### **Abstract :**

Highly porous materials, with large surface area and accessible space, variable chemical compositions, and porosity at different length scales, have captivated the attention of researchers in recent years as an important family of functional materials. Researchers have explored various routes to grow porous materials but most of the routes are limited to grow silica and carbon based compounds only. There is no specific route which can guarantee the growth of porous metal oxides. We have developed a technique “sequential elemental dealloying” which assure the growth of porous metal oxides. Further, we have explored the grown porous SnO<sub>2</sub> for various applications like humidity sensing, an electronic listening, bio-medical applications, real time water quality and control etc. The developed humidity sensor shows high sensitivity, ~350, together with high stability and reproducibility. Sensor also respond identically to the same words spoken by different user indicating its electronic listening activity. In addition, we have also explored the applicability of the grown material for real time water quality and control and hence to replace the spectroscopy based technique to monitor the organic pollution in water.

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