



TECHNOLOGY BRIEFS

Ceramic-Based Sensor

Researchers at the University of Toledo (Ohio) and The Ohio State University (Columbus) have developed a novel technique for detecting low levels of CO using tungsten oxide and molybdenum oxide, According to an article in *Technical Insights* (Frost & Sullivan).

The technique is based on rigorous thermodynamic considerations of the metal/metal oxide (M/MO) coexistence and has resulted in a novel redox technique to enhance sensor behavior. By modulating the oxygen partial pressure across the equilibrium M/MO proximity line, formation

and growth of new oxide surface on an atomic/submolecular level under conditions of "oxygen deprivation" has been achieved in potential sensor materials.

By precisely modulating the oxygen potential slightly lower or slightly higher than that existing in the vicinity of a given oxide, the scientists can cause atomic/molecular level reduction or oxidation of the given ceramic oxide. The scientists believe this is the first time the concept and technique of oxygen deprivation for such changes on the atomic/molecular level has been exploited. (Contact: Abdul-Majeed Azad, tel 419-530-8103, E-mail abdul-majeed.azad@utoledo.edu)