

# **BAHAN SEMIKONDUKTOR ZrO<sub>2</sub> DIDOPING DENGAN ZnO SEBAGAI SENSOR GAS CO<sub>2</sub>, CO, dan O<sub>2</sub>**

## **ABSTRAK**

Sifat respon gas dari bahan semikonduktor keramik ZrO<sub>2</sub> didoping ZnO 2 mol%, 4 mol%, 6 mol% dan 8 mol% menggunakan metode *solid state reaction* menunjukkan peningkatan nilai arus dengan kenaikan tegangan. Nilai sensitivitas yang optimal terjadi pada tegangan 3 volt untuk sampel dengan dengan penambahan ZnO 8 mol%. Nilai selektivitas sampel terhadap gas CO<sub>2</sub>, CO meningkat dengan adanya penambahan bahan doping. Nilai konduktivitas meningkat seiring dengan penambahan doping. Hasil XRD memperlihatkan terbentuknya senyawa baru. Penambahan doping mengakibatkan ukuran kristal lebih besar.

**Kata kunci** : Sensitivitas, Selektivitas, Solid State Reaction

**SENSOR OF CO<sub>2</sub>, CO, AND O<sub>2</sub>**

**ABSTRACT**

The nature of the response of gas from semiconductor material doped ZrO<sub>2</sub> ceramics with ZnO with pendoping content of 2 mol%, 4%, 6 mol mol% and 8 mol% with solid state reaction method indicates an increase in the current value of the voltage rises, the value of the sensitivity occurs at the initial voltage on the samples with the addition of ZnO 8 mol%, the value of selectivity can select their samples proved that gas well, depends on the value of conductivity is inversely proportional to the value of I-V characteristics, from the results of XRD obtained compounds bari which is ZnZrO<sub>3</sub> but with the addition of doping lead crystal size larger if compared with the material without doping.

**Key words:** sensitivity, Selectivity, Solid State Reaction