

Abstract Submitted
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Using ZnO:Sb micro-wires as oxygen sensors BRIAN KNAUF, TEJ
POUDEL CHHETRI, NADA MASMALI, ZEESHAN ALI, HERBERT JAEGER,
LEI KERR, KHALID EID, Miami University — We fabricated ZnO:Sb micro-wires
using a simple thermal technique and then studied the dependence of their electrical
resistance on light, temperature and the abundance of ambient oxygen. While this
work demonstrates that individual wires are quite sensitive to oxygen gas flow, both
temperature and light illumination strongly affect their oxygen gas sensitivity and
stability. Operating these ZnO:Sb oxygen sensors at 200C gives the highest response
to oxygen, yet a vanishingly small effect of light and temperature variations. The
underlying physics and the interplay between these effects will also be discussed.

Zeeshan Ali
Miami University

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