

## Effects of Electrode Materials on CO<sub>2</sub> Sensing Properties of Solid-Electrolyte Gas Sensors

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The effect of oxide powder addition to a carbonate auxiliary electrode on the CO<sub>2</sub>-sensing properties of Na<sub>3</sub>Zr<sub>2</sub>Si<sub>2</sub>PO<sub>12</sub> (NASICON) gas sensors has been investigated. CO<sub>2</sub> was adsorbed on the surfaces of most of the oxides tested after treatment at 400°C in dry air, while the coexistence of H<sub>2</sub>O reduced the amount of adsorbed CO<sub>2</sub>. However, the amount of CO<sub>2</sub> adsorbed on the oxides was not correlated with the CO<sub>2</sub> response of the NASICON sensors equipped with an electrode containing the oxide. The CO<sub>2</sub> response increased and the humidity cross response decreased with a decrease in the resistance of the oxides. This result suggests that the strict conductivity control of auxiliary electrodes is an important factor for achieving high-performance potentiometric CO<sub>2</sub> sensors.

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