CO_2 sensing characteristics of $Sm_{1-x}Ba_xCoO_3$ (x = 0, 0.1, 0.15, 0.2) nanostructured thick film

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Abstract:

$SmCoO_3$ gas sensor has been developed with high sensitivity for CO_2 gas by doping Ba. Nanostructured $SmCoO_3$ and $Sm_{1-x}Ba_xCoO_3$ (x = 0, 0.1, 0.15, 0.2) were obtained by EDTA-Glycol method. The operation temperature falls and sensitivity increases from 425 to 370^{O}C when Ba concentration in $SmCoO_3$ changes from x = 0 to x = 0.1. Ag impregnation over $Sm_{0.9}Ba_{0.1}CoO_3$ sensor, on exposure to CO_2 at about 360^{O}C showed an increased sensitivity as well as the response time also decreases. The possible CO_2 sensing mechanism is proposed on the basis of available literatures.