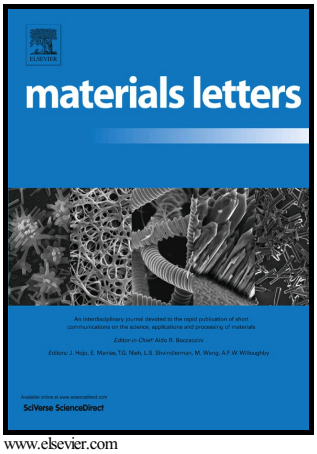




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# Determination of electrical conductivity type of SbSI nanowires

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## Abstract

This paper presents for the first time qualitatively different DC electrical responses of antimony sulfoiodide (SbSI) nanowires on hydrogen and oxygen. The effect produced by adsorbed gas on the electrical conductance can be used for determination of electrical conductivity type of investigated nanomaterials. Electrical conductance of the SbSI nanowires increases due to adsorption of $O_2$ molecules (known as electron acceptors) and decreases due to adsorption of $H_2$ molecules (known as electron donors). Such behavior proves the p-type electrical conductivity of investigated SbSI nanowires.

**Keywords**: Antimony sulfoiodide (SbSI); Nanowires; Type of electrical conductivity; Gas sensors; Semiconductors; Ferroelectrics.