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## Synthesis of Silver-Na-4 Mica Nanocomposite

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### ABSTRACT

*Metallic silver has been grown in the channels of crystalline structure of sodium fluorophlogopite mica commonly referred to as Na-4 mica. Crystal channels of thickness ~ 1.2 nm have been exploited to grow the metallic nanostructure. Sol gel technique has been adopted to prepare mica crystals which contain Na<sup>+</sup> cations within the interlayer space. This interlayer space has been used as nanochannels. After an ion exchange treatment  $Ag^+ \leftrightarrow Na^+$  the specimens were subjected to an electrodeposition reaction. Temperature variation of resistivity of the nanocomposite exhibit metallic behaviour over the temperature range 160 to 300 K. Voltage-current Characteristics of the nanocomposite also confirms the metallic behaviour of the nanocomposite.*

**Keywords:** Nanowire, Sol gel technique, Template, Electrodeposition.

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