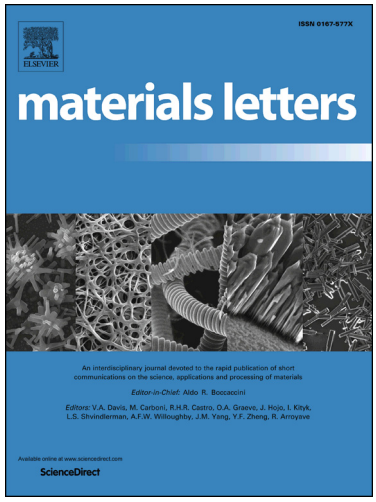

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Two step polyol-solvothermal growth of thick silver nanowires

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Abstract

In this work a new method for the growth of thick silver nanowires (AgNWs) is presented. With this method, AgNWs are obtained in a first step by a modified polyol method and used, in a second step, as seeds for further growth in a solvothermal process. The variation of structure, morphology and dimensions of the obtained silver nanostructures was studied. It was found that the composition of solvent (ethylene glycol and isopropyl alcohol) used in the solvothermal process greatly influences the composition, morphology and dimensions of the final product. Several times longer and thicker silver nanowires, compared with the initial seeds, having diameters between 200-250 nm and lengths between 10-25 microns, can be obtained by controlling the solvent composition.

Keywords: silver nanowire; polyol method; solvothermal growth; electronic materials