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PII: S0167-577X(16)30885-0
DOI: http://dx.doi.org/10.1016/j.matlet.2016.05.118
Reference: MLBLUE20929

To appear in: *Materials Letters*

Received date: 29 April 2016
Revised date: 20 May 2016
Accepted date: 25 May 2016

Cite this article as: Yu Tai, Chunju Xu and Huiyu Chen, Silver-coated glass fabric composites prepared by electroless plating, *Materials Letters* http://dx.doi.org/10.1016/j.matlet.2016.05.118

Silver-coated glass fabric composites prepared by electroless plating

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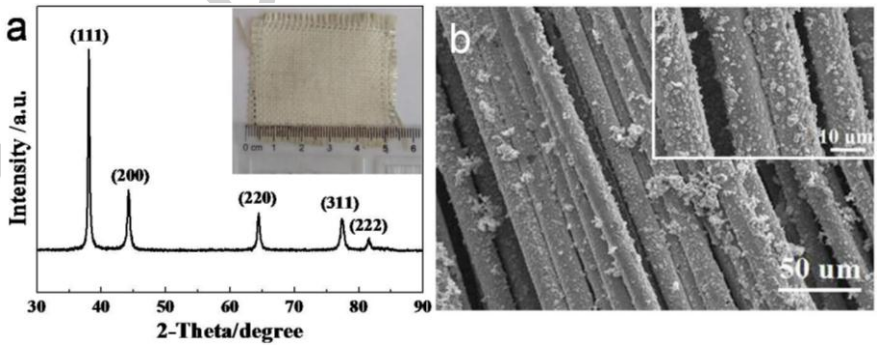
Abstract: Silver-coated glass fabrics have been successfully obtained by a facile and versatile electroless plating method, and the silver layers on the surface of glass fabrics were compact and uniform. The purity and quality of these silver coatings were investigated by X-ray diffraction (XRD) and scanning electron microscopy (SEM), respectively. It was found that the quality of the coating layer was influenced by the dosage of reducing agent and reaction time. The composites possessed an excellent conductivity, and the optimal volume resistivity could reach 6.54×10^{-4} Ω·cm. It was expected that such conductive composites have extensive application in shielding materials.

Graphical abstract



Glass fabrics/silver core-shell composites were successfully prepared via an electroless plating route at 30 ^{o}C in an alkaline bath, and the optimal volume resistivity of such composites with compact silver layers could reach 6.54×10^{-4} Ω·cm.