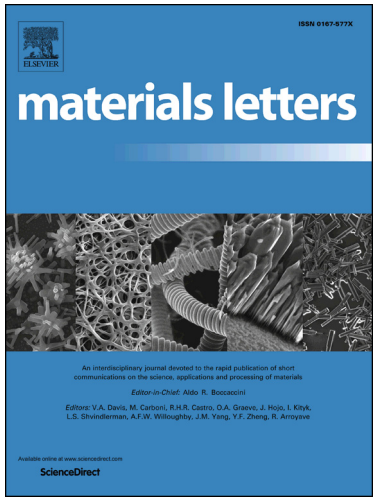

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Selective Nickel/Silver front metallization for graphene/silicon solar cells

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ABSTRACT

In this work we studied Ag/Ni front electrodes on Gr/Si solar cell structure using field induced plating. These electrodes could be used as a front electrode on 2D graphene-based devices at very low cost and low temperature (<70 °C). Adhesion was controlled between the nickel and graphene interface by varying the solution temperature ranges between 50 °C to 70 °C. Afterwards Ag plating was performed at room temperature. It was observed that contact resistivity was improved between plated electrodes and graphene, thus helped to improve the *F.F* of the device from 49 % to 60.1 %. Efficiency was enhanced from 4.3 % to 5.01 %.

Keywords: Nickel/Silver plating, Field induced plating, Solar cells.

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