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A facile synthesis of silicon nanowires/micropillars structure using lithography and metal-assisted chemical etching method

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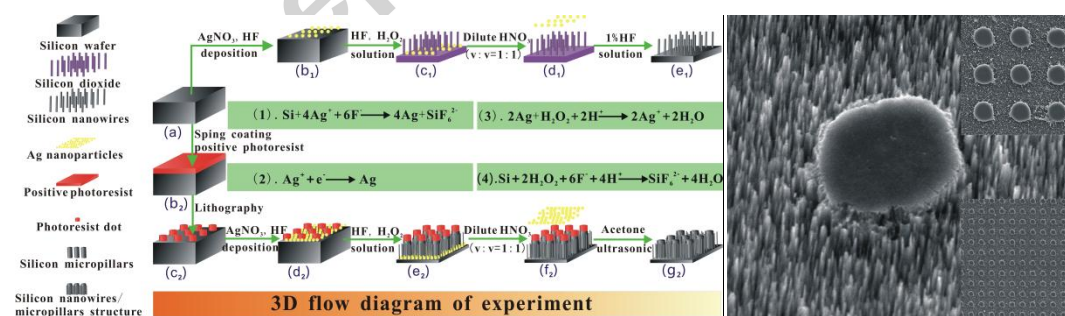
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Abstract

In this paper, a new fabrication method for silicon nanowires/micropillars structure is proposed. This method is using lithography and metal-assisted chemical etching to fabricate the structure of silicon nanowires/micropillars. In the experiment, to obtain the optimal light trapping properties of silicon nanowires/micropillars structure, the optimal light trapping properties of silicon nanowires were systemically investigated, including etching concentration, etching time and etching temperature. And then, a large-area uniform, controllable and optimal light trapping silicon nanowires/micropillars structure was fabricated using lithography and metal-assisted chemical etching method. This controllable and facile method for silicon nanowires/micropillars structure will expand its application in the field of optoelectronic devices and solar cells.

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A novel fabrication method for the silicon nanowires/micropillars structure has been proposed. This method is using lithography and metal-assisted chemical etching to fabricate silicon nanowires/micropillars structure. In the experiment, to obtain the optimal light trapping property of the silicon nanowires/micropillars structure, the optimal light trapping

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