

Memristive Properties of Nanostructured Porous Silicon

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Abstract : The paper describes methods for obtaining porous structures with the properties of a silicon-based memristor and explains the electrical properties of porous silicon films. Based on the results, there is a positive shift in the current-voltage characteristics (CVC) after each measurement, i.e., electrical properties depend not only on the applied voltage but also on the previous state. After 3 minutes of rest, the film returns to its original state (reset). The method for obtaining a porous silicon nanofilm with the properties of a memristor is simple and does not require additional effort. Based on the measurement results, the typical memristive behavior of the porous silicon nanofilm is analyzed.

Keywords : porous silicon, current-voltage characteristics, memristor, nanofilms

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