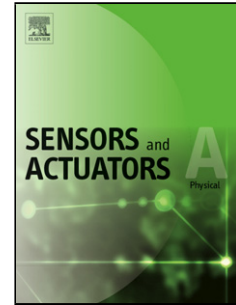


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A Novel Exposure Sensor Based on Reverse Series Memristor

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Highlights

- 1 A novel design scheme of exposure sensor is presented.
- 2 The presented exposure sensor has a larger measurement range than the method based on the integral circuit.
- 3 The exposure sensor avoids the measurement errors and complex operations of the method based on photoresist thickness measurement.
- 4 The reverse series memristor M_n avoids the influence of the memristor resistance variation on the sensor performance and exposure measurement.

Abstract: In order to expand the measuring range of the exposure sensor and solve the current fluctuation caused by the memristor resistance, a novel exposure sensor based on reverse series memristor is proposed. The exposure sensor mainly consists of the photoresistor, the current limiting resistor and the reverse series memristor. The resistance of photoresistor varies with the illuminance, causing the loop current change. Based on the memory feature of the memristor, its resistance can be used to characterize the integral value of the illuminance for a period of time. Thus the measurement of the exposure can be realized by the exposure sensor based on reverse series memristor. In the exposure sensor, two series memristors constitute the reverse series memristor and they are connected in serial

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