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## Coumarin:GO doped Bi2O3 composites/p-type silicon hybrid photodiodes

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### Abstract

Au/Coumarin:GO doped Bi2O3/p-Si diodes were prepared by drop casting technique. The current-voltage characteristics of the diodes were analyzed under solar light illumination to determine photodiode behavior. The diodes exhibited a photodiode behavior as the photocurrent is higher than the dark current. The photoconducting mechanism of the diodes is a linear photoconducting behavior. The photoconducting behavior of the diodes was improved with Coumarin: GO doping. The transient photocurrent, photocapacitance and photoconductance behaviours of the diodes were analyzed. The diodes exhibited a photocapacitance and photoconductance behavior under solar light illumination. It was found that the hybrid diodes could be used as a photocapacitor or photodiode in electro-optic applications. (C) 2016 Elsevier B.V. All rights reserved.

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