Title: Laser scanned photodiodes (LSP) for Image sensing

Author(s): Vieira, M (Vieira, M); Fernandes, M (Fernandes, M); Louro, P (Louro, P); Schwarz, R (Schwarz, R); Schubert, M (Schubert, M)

Editor(s): Obermeier E

Source: Transducers'01: Eurosensors XV, Digest Technical Papers, Vols 1 and 2 Pages: 578-581 Published: 2001

Abstract: An optimized ZnO:Al/a-pin SixCl1-x:H/Al configuration for the laser scanned photodiode (LSP) imaging detector is proposed. The LSP utilizes light induced depletion layers as detector and a laser beam for readout. The effect of the sensing element structure, cell configuration and light source flux are investigated and correlated with the sensor output characteristics. Experimental data reveal that the large optical gap and the low conductivity of the doped a-SixCl1-x:H layers are responsible by an induced inversion layer at the illuminated interfaces which blocks the carrier collection. These insulator-like layers act as MIS gates preventing image smearing. The physical background of the LSP is discussed.

Language: English

Document Type: Proceedings Paper

Conference Title: 11th International Conference on Solid-State Sensors and Actuators

Conference Date: JUN 10-14, 2001

Conference Location: MUNICH, GERMANY


Author Keywords: Laser Scanner Photodiode; Image Acquisition and Representation; Analog Readout

Reprint Address: Vieira, M (reprint author), ISEL, Elect & Commun Dept, R Conselheiro Emídio Navarro, P-1949014 Lisbon, Portugal

Publisher: Springer-Verlag Berlin

Publisher Address: HEIDELBERGER PLATZ 3, D-14197 Berlin, GERMANY

ISBN: 3-540-42150-5