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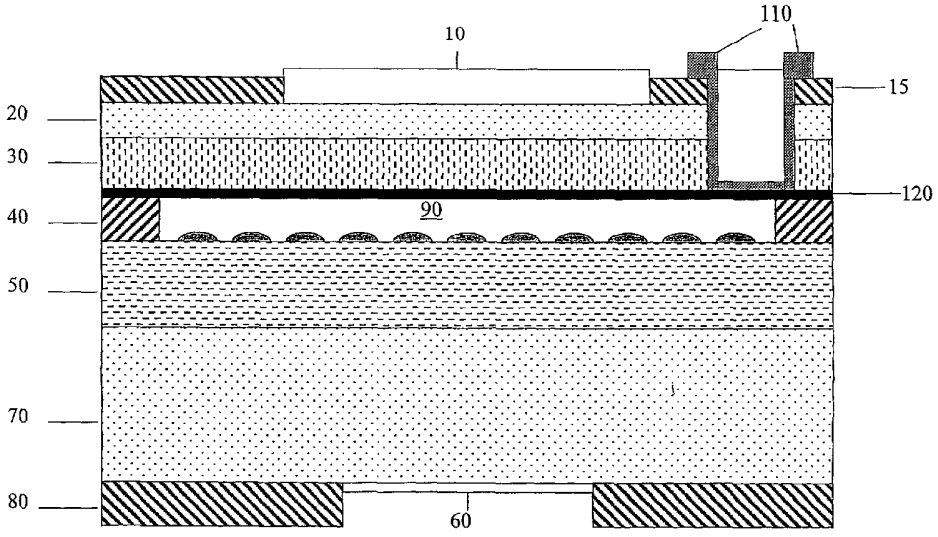
[Continued on next page]

(54) Title: SEMICONDUCTOR AVALANCHE PHOTODETECTOR WITH VACUUM OR GASEOUS GAP ELECTRON ACCELERATION REGION



(57) Abstract: A semiconductor avalanche photodiode (APD) with very high current gain utilizes a small vacuum or gas filled gap, which is used as a region to accelerate electrons to high energies. The APD has an absorption layer, a gap, and a multiplication layer. The absorption layer is adapted to generate electron-hole pairs upon absorbing light. The APD is adapted to generate an electric field in the gap and at an interface between the absorption layer and the gap. The electric field extracts electrons from the absorption layer into the gap and accelerates the extracted electrons while in the gap. The multiplication layer is adapted so that said accelerated electrons impinge on and cause a flow of secondary electrons within the multiplication layer.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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US CL : 257/432
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
East

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,914,491 (SALOKATVE et a.) 22 June 1999 (22.06.1999), column 12, lines 37-42, figs. 5,28.	1,2,6,8-11

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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