

Title (en)  
HIGH SENSITIVITY, HIGH RESOLUTION DETECTOR DEVICES AND ARRAYS

Title (de)  
HOCHEMPFLINDLICHE HOCHAUFLÖSENDE DETEKTOREINRICHTUNGEN UND ARRAYS

Title (fr)  
MATRICES ET DETECTEURS HAUTE SENSIBILITE, HAUTE RESOLUTION

Publication  
**EP 1894223 A2 20080305 (EN)**

Application  
**EP 06772574 A 20060610**

Priority  
• US 2006022316 W 20060610  
• US 68941705 P 20050610  
• US 69193105 P 20050617

Abstract (en)  
[origin: WO2006135683A2] Avalanche amplification structures (1) including electrodes (2) and (8), an avalanche region (3), a quantifier (4), an integrator (5), a governor (6), and a substrate (7) arranged to detect a weak signal composed of as few as several electrons are presented. Quantifier (4) regulates the avalanche process. Integrator (5) accumulates a signal charge. Governor (6) drains the integrator (5) and controls the quantifier (4). Avalanche amplifying structures (1) include: normal quantifier, reverse bias designs; normal quantifier, normal bias designs; lateral quantifier, normal bias designs; changeable quantifier, normal bias, adjusting electrode designs; normal quantifier, normal bias, adjusting electrode designs; and lateral quantifier, normal bias, annular integrator designs. Avalanche amplification structures (1) are likewise arranged to provide arrays of multi-channel devices. Structures have immediately applicability to devices critical to homeland defense.

IPC 8 full level  
**H01J 47/00** (2006.01)

CPC (source: EP KR)  
**H01J 47/00** (2013.01 - KR); **H01L 27/14603** (2013.01 - EP); **H01L 31/101** (2013.01 - KR); **H01L 31/107** (2013.01 - EP KR)

Citation (search report)  
See references of WO 2006135683A2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2006135683 A2 20061221**; **WO 2006135683 A3 20070322**; CA 2613195 A1 20061221; EP 1894223 A2 20080305; IL 188040 A0 20080320; JP 2008544496 A 20081204; KR 20080074084 A 20080812; RU 2008100029 A 20090720; RU 2406181 C2 20101210

DOCDB simple family (application)  
**US 2006022316 W 20060610**; CA 2613195 A 20060610; EP 06772574 A 20060610; IL 18804007 A 20071210; JP 2008515920 A 20060610; KR 20087000807 A 20080110; RU 2008100029 A 20060610