

Title (en)
MICROSTRUCTURE ENHANCED ABSORPTION PHOTOSENSITIVE DEVICES

Title (de)
MIKROSTRUKTURVERBESSERTE LICHTEMPFLINDLICHE ADSORPTIONSVORRICHTUNGEN

Title (fr)
DISPOSITIFS PHOTOSENSIBLES À ABSORPTION AMÉLIORÉE PAR DES MICROSTRUCTURES

Publication
EP 4059055 A1 20220921 (EN)

Application
EP 20868204 A 20200921

Priority

- US 201962905065 P 20190924
- US 201962914028 P 20191011
- US 201962925183 P 20191023
- US 201962950888 P 20191219
- US 202062957779 P 20200106
- US 202062964094 P 20200121
- US 202062968093 P 20200130
- US 202062969624 P 20200203
- US 202062975726 P 20200212
- US 202062978736 P 20200219
- US 202062981979 P 20200226
- US 202062985171 P 20200304
- US 202062993414 P 20200323
- US 202062994758 P 20200325
- US 202063005152 P 20200403
- US 202063009928 P 20200414
- US 202063011217 P 20200416
- US 202063016160 P 20200427
- US 202063019208 P 20200501
- US 202063026591 P 20200518
- US 202063033153 P 20200601
- US 202063034964 P 20200604
- US 202063034961 P 20200604
- US 202063038079 P 20200611
- US 201962937813 P 20191120
- US 201962943146 P 20191203
- US 202063039945 P 20200616
- US 202063039941 P 20200616
- US 202063041997 P 20200621
- US 202063043709 P 20200624
- US 202063048641 P 20200706
- US 202063050044 P 20200709
- US 202063051896 P 20200715
- US 202063054192 P 20200720
- US 2020051733 W 20200921

Abstract (en)
[origin: WO2021061543A1] Microstructure enhanced photodetector arrangements uses a CMOS image sensor (CIS) wafer of crystalline Si and a CMOS Logic Processor (CLP) wafer stacked on each other for electrical interaction. The wafers can be fabricated separately and stacked or can be regions of the same monolithic chip. The image can be a time-of-flight image. Bayer arrays are enhanced with microstructure holes. Avalanche photodiodes, single photon avalanche photodiodes and phototransistors can be laterally and/or vertically doped. Photodetectors / photosensors can have slanted sidewalls for improved optical confinement and reduced crosstalk.

IPC 8 full level
H01L 27/146 (2006.01); **H01L 31/101** (2006.01); **H01L 31/102** (2006.01)

CPC (source: EP)
H01L 27/14603 (2013.01); **H01L 27/1461** (2013.01); **H01L 27/14629** (2013.01); **H01L 27/1463** (2013.01); **H01L 31/03529** (2013.01); **H01L 31/1055** (2013.01); **H01L 31/107** (2013.01); **G01S 7/4863** (2013.01); **G01S 7/4914** (2013.01); **H01L 27/14621** (2013.01); **H01L 27/14627** (2013.01); **H01L 27/14634** (2013.01)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2021061543 A1 20210401; EP 4059055 A1 20220921; EP 4059055 A4 20231227

DOCDB simple family (application)
US 2020051733 W 20200921; EP 20868204 A 20200921