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Borenstain

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- [54] DUAL-BAND INFRARED SENSING MATERIAL ARRAY AND FOCAL PLANE ARRAY
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[57] ABSTRACT

A dual color focal plane array includes a sensing material array (SMA) backed by a readout multiplexer unit (RMU). The SMA includes two interleaved sets of pixels. Each pixel of the first set, sensitive only in a primary band, includes a QWIP backed by a grating. Each pixel of the second set, sensitive only in a secondary band, includes a QWIP in tandem with an intrinsic normal incidence detector but lacking a grating. The QWIPs with gratings detect in the primary band. The QWIPs without gratings are inactive. The intrinsic normal incidence detectors detect in the secondary band. The preferred intrinsic normal incidence detector is a PIN diode. The QWIPs and the intrinsic normal incidence detectors are deposited together epitaxially on a common substrate, and then the intrinsic normal incidence detectors are removed from the pixels of the first set by etching. Each pixel of the SMA is connected electrically to a cell of the RMU.

- [56] References Cited
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14 Claims, 3 Drawing Sheets

