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Corrigendum to "Van der Waals materials for HOT infrared detectors: A review" [Opto-Electronics Review 30 (2022) e140551]

Antoni Rogalski

Institute of Applied Physics, Military University of Technology, 2 Kaliskiego St., 00-908 Warsaw, Poland

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The author regrets that an error in equation (10) (detector thickness, *t*, should be removed) consequently affected the erroneous form of equation (13).

The correct version of the expression (10) is of the form

$$G_{th} = \frac{N_{min}}{\tau},$$

which leads to expression (13) in the form

$$D^* \propto \left(\frac{\alpha}{G_{th}}\right)^{1/2} = \left(\frac{\alpha N_{maj}\tau}{n_i^2}\right)^{1/2} = \left(\frac{\sqrt{N_{maj}}}{n_i}\right)\sqrt{\alpha\tau}$$

i.e. the detectivity is proportional to $\sqrt{\alpha\tau}$; not proportional to $\alpha\sqrt{\tau}$ as stated in the source paper.

As a result of the above correction, the last two paragraphs of section 4 have been amended as shown below:

Considering the experimental data collected in Figs. 4, 5 and 7, it is possible to compare the estimated $\sqrt{\alpha\tau}$ values for HgCdTe ($\alpha = 2\times10^3$ cm^{-1}, $\tau = 10^{-3}$ s) with those for 2D TMD materials ($\alpha = 2\times10^5$ cm^{-1}, $\tau = 10^{-9}$ s). For HgCdTe, it is equal to 1.4 (s/cm)$^{1/2}$ while for TMD materials: 1.4×10^{-2} (s/cm)$^{1/2}$, which is two orders of magnitude smaller. Note that the comparison of $\sqrt{\alpha\tau}$ values is for semiconductors with significantly different energy gaps. For a hypothetical 2D material with a narrow energy gap (of the order of 0.1 eV which is the case of HgCdTe), the absorption coefficient would be smaller (about one order of magnitude), resulting in a much smaller $\sqrt{\alpha\tau}$ for the hypothetical 2D materials compared to the HgCdTe material.

To summarize the discussion in this section, it can be concluded that, considering the $\sqrt{\alpha\tau}$ paradigm, HgCdTe is a better material for the active area of LWIR detectors compared to 2D TMD materials.

The corrections made changed the performance figure-of-merit values for the materials used in the fabrication of infrared detectors, but do not affect the qualitative conclusions cited throughout the paper.

*Corresponding author at: antoni.rogalski@wat.edu.pl

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