Corrigendum: Cathodoluminescence nano-characterization of semiconductors (2011 Semicond. Sci. Technol. 26 064005)

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In our original paper, we estimated the maximum field of view (FOV) that would result when collecting luminescence over a cone half-angle u and coupling this into a spectrograph with a given f/number and a slit width d. Due to the use of the low-angle approximation outwith the paraxial regime, the expression given in Equation 2 used the tangent of the angle rather than the correct sine function. The corrected expression is:

$$\mathrm{FOV} = \frac{d}{2 \cdot (f/\mathrm{number}) \cdot \sin u} \tag{2}$$

In the high collection ($u \to 90°$) limit, this equation describes a FOV which drops to a value of $d/(2 \cdot f/\mathrm{number})$. Thus for the example cited in our paper ($f/4$, $d = 25\,\mu\mathrm{m}$) the minimum FOV will be $\approx 3.1\,\mu\mathrm{m}$, as shown in this amended version of Figure 3:

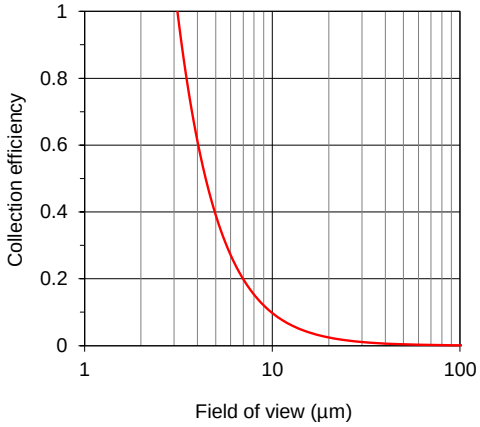

Figure 3. CL collection efficiency versus field of view, calculated for an $f/4$ spectrometer with 25 µm slits.

The conclusion we drew—that a 10 µm FOV imposes a collection limit of $\approx 10\,\%$—is not altered by this correction. However, the incorrect expression significantly underestimated the FOV possible for higher N.A. collection geometries.

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