

Progress in growth, fabrication, and characterization of semiconductor photonic crystal nanocavities

Erratum

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An error was made in the calculation of the photonic crystal mode volume. Fixing this error increases our mode volume by a factor of 2 and makes our claim of highest Q/V invalid.

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In our article [1], we state that the computed mode volume of the 1D photonic crystal nanobeam cavity is $0.27(\lambda/n)^3$. This value appears in Section 4.5. Recently, it was discovered that a factor-of-two error was made in the calculation of the cavity mode volume. Fixing this error results in an increase in the mode volume of these cavities to $0.54(\lambda/n)^3$.

We made a claim in Section 4.5 and in the conclusion that we have observed the highest Q/V ratio as of the date of publication. Using the new mode volume, and our reported highest Q of 85 000, our calculated Q/V ratio becomes 157 000.

This value is no longer larger than the Q/V ratio of 173 000 reported by the group of De La Rue and co-workers [2].

References

- [1] B. C. Richards, J. Hendrickson, J. D. Olitzky, R. Gibson, M. Gehl, K. Kieu, P. Polynkin, G. Khitrova, H. M. Gibbs, U. K. Khankhoje, A. Homyk, A. Scherer, J.-Y. Kim, and Y.-H. Lee, Phys. Status Solidi B **248**, 892 (2011).
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