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In conclusion, we have developed a fully-implantable, laser-based fluorescence sensor complete with optical and electrical read-out elements. This constitutes the first known laser-based implanted fluorescence detector. We have verified that the device operates while implanted in a live animal, and is sensitive enough to detect fluorophore at pre-clinically-relevant concentrations. Although this is an initial demonstration, we believe this technology platform has potential for the long term monitoring of disease progression and treatment.

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