The integration of a micropipette in a closed microfluidic chip with optical tweezers for investigations of single cells: erratum

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Abstract: In July 2011 a new concept of a closed microfluidic system equipped with a fixed micropipette, optical tweezers and a UV-Vis spectrometer was presented [Biomed. Opt. Express 2, 2299 (2011)]. Figure 1 showed falsely oriented mirrors. To clarify the design of the setup, this erratum presents a correct schematic.

OCIS codes: (350.4855) Optical tweezers or optical manipulation; (170.3880) Medical and biological imaging; (300.1030) Absorption; (280.2490) Flow diagnostics; (220.4000) Microstructure fabrication; (110.0180) Microscopy.

References

1. A. Alrifaiy and K. Ramser, "How to integrate a micropipette into a closed microfluidic system: absorption spectra of an optically trapped erythrocyte," Biomed. Opt. Express **2**(8), 2299–2306 (2011).

In July 2001 we presented a new concept of integrating a micropipette within a closed microfluidic system equipped with optical tweezers and a UV-Vis spectrometer [1]. In Fig. 1 of that paper a schematic of the setup was illustrated. The mirrors in the figure were wrongly oriented and hence depicted as semitransparent or transparent glasses. In Fig. 1, below, a new schematic with correctly oriented mirrors is given.

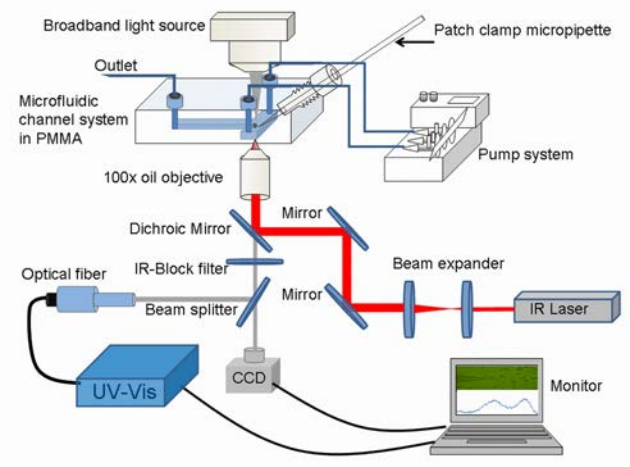

Fig. 1. Inverted microscope that incorporates the following techniques: Gastight lab-on-a-chip with an integrated micropipette coupled to a pump system, optical tweezers for 3D steering of the single cells comprising of an IR laser, a beam expander, mirrors and a dichroic mirror and an IR blocking filter to block the IR laser. UV-Vis spectrometer with an integrated optical fiber to record the oxygenation states of the RBC, CCD camera to monitor the trapping dynamics of the cells within the micro-channel system.

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