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(71) Applicant (for all designated States except US): **BIO-RAD LABORATORIES, INC.** [US/US]; 1000 Alfred Nobel Drive, Hercules, California 94547 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HENG, Xin** [CN/US]; 1000 Alfred Nobel Drive, Hercules, California 94547 (US). **PATT, Paul** [US/US]; 1000 Alfred Nobel Drive, Hercules, California 94547 (US).

(74) Agents: **BOYD, David, W.** et al.; Townsend and Townsend and Crew LLP, 1400 Wewatta Street, Suite 600, Denver, Colorado 80202-5556 (US).

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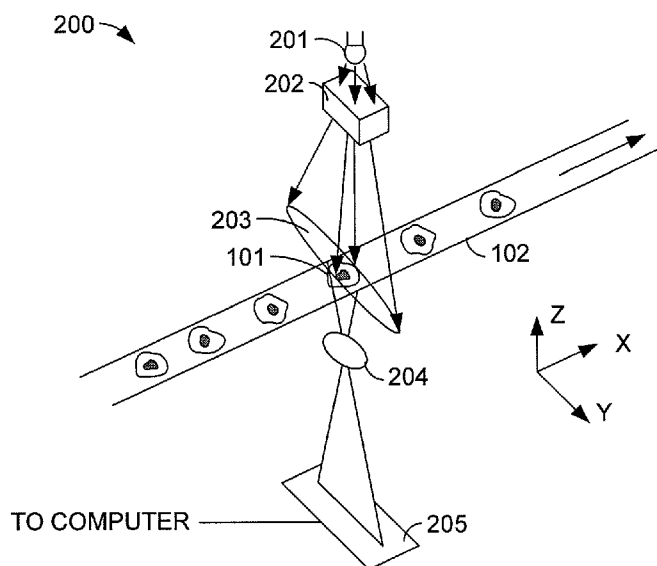


FIG. 2

(57) Abstract: A system for performing high-speed, high-resolution imaging cytometry utilizes a line-scan sensor. A cell to be characterized is transported past a scan region. An optical system focuses an image of a portion of the scan region onto at least one linear light sensor, and repeated readings of light falling on the sensor are taken while a cell is transported through the scan region. The system may image cells directly, or may excite fluorescence in the cells and image the resulting light emitted from the cell by fluorescence. The system may provide a narrow band of illumination at the scan region. The system may include various filters and imaging optics that enable simultaneous multicolor fluorescence imaging cytometry. Multiple linear sensors may be provided, and images gathered by the individual sensors may be combined to construct an image having improved signal-to-noise characteristics.