

What is claimed is:

1. A system comprising:
a flow cell configured to propagate a sample in a flow stream;
a light source configured to irradiate the sample in the flow cell;
a detector unit configured to differentially detect light from the flow cell, wherein
5 the detector unit comprises an optical adjustment component and a detector, and the
detector unit differentially detects light from the flow stream by modulating:
one or more components of the optical adjustment component; or
the detector; and

wherein the light from the flow cell contacts the optical adjustment component directly.

2. The system according to claim 1, wherein the detector unit comprises a detector
comprising a detector array.

3. The system according to claim 2, wherein the detector array comprises an array
15 of photodiodes.

4. The system according to claim 3, wherein the detector unit is configured to
differentially detect light from the flow stream by deactivating a subset of the photodiodes
in the array.

5. The system according to claim 1, wherein the optical adjustment component
comprises a fused fiber optic component and the detector comprises a detector array.

6. The system according to claim 5, wherein the fused fiber optic component
25 comprises a tapered fused fiber optic bundle.

7. The system according to any one of claims 5-6, wherein the detector unit further
comprises a light conducting material positioned between the fused fiber optic component
and the detector array.

8. The system according to claim 1, wherein the optical adjustment component comprises one or more lenses.

5 9. The system according to any one of claims 6-8, wherein the detector array comprises an array of photodiodes.

10. The system according to claim 5, wherein the optical adjustment component comprises a micro-opto-electro-mechanical system.

10 11. The system according to claim 10, wherein the optical adjustment component comprises a digital micro-mirror device.

12. The system according to any one of claims 1-11, wherein the system is a flow cytometer.

15

13. A method comprising:
irradiating a flow cell comprising a sample in a flow stream with a light source; and
detecting light from the flow cell with a detector unit according to any one of claims
1-11 that is configured to differentially detect light from the flow cell.

20

14. A kit comprising:
a flow cell configured to propagate a sample in a flow stream;
an optical adjustment component; and
a detector unit according to any one of claims 1-11 configured to differentially
25 detect light from the flow cell.