CLAIMS

1. A method of normalizing fluorescence measurements, comprising:

receiving a plurality of fluorescence measurements for a plurality of receptacles in a fluorometer;

using the fluorescence measurement of a first receptacle of the plurality of receptacles to generate a correction factor for the first receptacle;

creating correction factors for each of the other of the plurality of receptacles using the fluorescence measurement from the first receptacle;

storing the correction factors; and

applying the correction factors to a subsequent plurality of fluorescence measurements in each respective receptacle of the plurality of receptacles.

2. The method of claim 1, wherein the fluorometer comprises a multi-channel fluorometer, the method further comprising:

receiving a calibrant in a plurality of receptacles of the multi-channel fluorometer;

exciting the plurality of receptacles with one or more light sources;

measuring a fluorescence level of each calibrant in the plurality of receptacles.

3. The method of claim 1 or 2, wherein creating correction factors comprises dividing the fluorescence measurement of the first receptacle by the fluorescence measurement of each respective one of the plurality of receptacles.

4. The method of claim 3 further comprising generating a standard curve based at least in part on the correction factors.

5. The method of claim 4 wherein generating the standard curve comprises:

a) applying the correction factor obtained for each of the plurality of receptacles to subsequent measurements of fluorescence levels of known concentrations of standard solutions in each respective receptacle of the plurality of receptacles; or

b) using two or more replicates of each concentration of standard solution.

6. The method of claim 5, wherein the standard solution comprises a biomolecule.

7. The method of claim 1 further comprising: obtaining subsequent measurements of fluorescence levels of a sample containing an analyte of interest in one or more receptacle of the plurality of receptacles and applying the correction factor obtained for the one or more receptacle of the plurality of receptacles.

8. The method of claim 7, wherein the analyte of interest is a biomolecule.

9. The method of claim 6 or 8, wherein the biomolecule is chosen from a protein, a peptide, an amino acid, an enzyme, a toxin, a lectin, a lipopolysaccharide, a nanoparticle, a virus, an extracellular vesicle, a nucleic acid, a polynucleotide, an oligonucleotide, a single-stranded DNA, a double-stranded DNA, an RNA or a microRNA.

10. The method of claim 2, wherein the calibrant is chosen based on one or more types of light comprising the one or more light sources.

11. The method of claim 10, wherein the calibrant is chosen so that it will fluoresce when excited by the one or more types of light.

12. The method of claim 2, wherein the calibrant comprises a fluorescent dye, fluorophore, quantum dot, fluorescent nanoparticle or fluorescent gelling polymer.

13. A multi-channel fluorometer, comprising:

one or more receptacles configured to receive a test solution therein;

one or more light sources configured to provide excitation to the one or more receptacles;

one or more photodetectors, each photodetector configured to receive emission light from one of the excited receptacles and to measure a fluorescence level of the emission light; and

a non-transitory computer-readable storage medium coupled to the one or more receptacles, light sources and photodetectors, having stored thereon a computer program which, when executed on at least one processor, causes the at least one processor to carry out a method comprising the steps of:

receiving an indication of a calibrant being placed in the one or more receptacles of the multi-channel fluorometer;

exciting the calibrant in the one or more receptacles with the one or more light sources;

measuring the fluorescence level of each calibrant in the one or more receptacles;

using the fluorescence level of the calibrant in a first receptacle of the one or more receptacles to generate a correction factor for the first receptacle;

creating correction factors for each of the other of the one or more receptacles using the fluorescence level from the first receptacle;

storing the correction factors; and

applying the correction factors to subsequent measurements of fluorescence levels in each respective receptacle of the one or more receptacles.

14. The multi-channel fluorometer of claim 13 wherein the one or more receptacles comprises eight receptacles.

15. The multi-channel fluorometer of claim 13 wherein a subsequent measurement comprises a measurement of one or more replicas of a known concentration of a standard solution.

16. The multi-channel fluorometer of claim 15, wherein the standard solution comprises a biomolecule.

17. The multi-channel fluorometer of claim 13 wherein a subsequent measurement comprises a measurement of a sample comprising an analyte of interest.

18. The multi-channel fluorometer of claim 17 wherein the analyte of interest comprises a biomolecule.

19. The multi-channel fluorometer of claim 16 or 18 wherein the biomolecule is chosen from a protein, a peptide, an amino acid, an enzyme, a toxin, a lectin, a lipopolysaccharide, a

nanoparticle, a virus, an extracellular vesicle, a nucleic acid, a polynucleotide, an oligonucleotide, a single-stranded DNA, a double-stranded DNA, an RNA or a microRNA.

20. A method of testing fluorescence according to a plurality of standards in a single test, the method comprising:

receiving a first plurality of fluorescence measurements for a plurality of receptacles in a multi-channel fluorometer, each containing a calibrant;

using the fluorescence measurement of a first receptacle of the plurality of receptacles to generate a correction factor for the first receptacle;

creating correction factors for each of the other of the plurality of receptacles using the fluorescence measurement from the first receptacle;

storing the correction factors;

receiving a second plurality of fluorescence measurements for the plurality of receptacles, wherein a first one or more receptacles of the plurality of receptacles contain concentrations of a first standard and a second one or more receptacles of the plurality of receptacles contain concentrations of a second standard; and

applying the correction factors to the second plurality of fluorescence measurements.