for the ideal case, as shown in FIG. **9**. At higher wavelengths, however, the fractional signal modulation between the two spectrums is improved, albeit at a lower signal level of absorption than that seen at λmax. While the light emission and absorption spectrums will preferably overlap exactly, the overlap need not be an exact match for utility in the present invention.

Example 5

Use of an Edge Filter to Improve Signal Modulation

As shown in Example 4, overlap between light emission and absorption spectrums need not be an exact match for use in the present invention. However, monochromatic light sources and/or filters can generally be used to create a near exact match of the characteristics between a light source and the colored product absorption. Using the same parameters as used in Example 4, FIG. **12** demonstrates use of an edge filter with a cut-off of 490 nm used on either the light transmission or detection side of the optical system to improve signal modulation.

While preferred embodiments of the present invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the invention. It should be understood that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention. It is intended that the following claims define the scope of the invention and that methods and structures within the scope of these claims and their equivalents be covered thereby.

What is claimed is:

1. A system for detecting at least one analyte in a bodily fluid from a subject, the system comprising:

a light source comprising a coating of luminescent paint and having an emission spectrum;

an assay assembly having one or more reactants to react with the bodily fluid to yield a colored product having an absorbance spectrum encompassing at least one wavelength within the emission spectrum from the light source; and

a detector that detects absorption of the at least one wavelength of light directed through the colored product, wherein said absorption of said at least one wavelength through the colored product is indicative of the presence of the analyte in said bodily fluid.

2. The system of claim **1** wherein the detector is configured to detect at least two different analytes in the bodily fluid.

3. The system of claim **1** wherein the amount of absorption is stoichiometrically related to the concentration of the analyte in said bodily fluid.

4. The system of claim **1** wherein the assay assembly is configured to run an immunoassay or an enzymatic assay yielding the colored product.

5. The system of claim **1** wherein the light source comprises a light emitting diode.

6. The system of claim **1** wherein the wavelength is in a range of about 400 to about 800 nm.

7. The system of claim **1** wherein the light source comprises a monochromatic light source having a wavelength that is encompassed by the absorbance spectrum.

8. The system of claim **1** wherein the light source comprises a filter having a wavelength that is encompassed by the absorbance spectrum.

9. The system of claim **1** wherein the analyte is specifically bound by an antibody that is detected by a secondary enzyme-linked antibody that catalyzes a color-producing reaction.

10. The system of claim **1** wherein the analyte is converted chemically to the colored product via a color-producing reaction.

11. The system of claim **1** wherein the analyte catalyzes the formation of the colored product from said reactants.

12. The system of claim **1** further comprising a chemical reagent that bind the analyte binds with an agent that participates in a color-producing reaction.

13. The system of claim **3** wherein the amount of absorption is linearly related to the concentration of the analyte in said bodily fluid.

14. The system of claim **1** wherein the volume of bodily fluid is less than about 50 μl.

15. A fluidic device for detecting the presence or absence of at least one analyte in a bodily fluid from a subject, the device comprising:

a cartridge comprising a sample collection unit, an assay assembly, and a light source;

wherein said light source comprises luminescent paint coated in said assay assembly, and

wherein said sample collection unit is configured to collect a sample of bodily fluid from said subject and wherein said assay assembly comprises at least one reaction site containing a reactant that reacts with said analyte to yield a colored product having an absorbance spectrum corresponding to at least one wavelength of light directed through the colored product by said light source.

16. The fluidic device of claim **15**, wherein said sample collection unit comprises a sample collection well, a metering channel, and a dilution chamber in fluidic communication with said metering channel, wherein said dilution chamber is configured to store a diluent.

17. The fluidic device of claim **16**, wherein said sample collection unit further comprises a mixing chamber that is configured to mix a predetermined portion of the sample with the diluent to yield a diluted sample.

18. The fluidic device of claim **17**, wherein the sample collection unit further comprises a filter configured to filter the diluted sample before it is assayed.

19. The fluidic device of claim **15**, wherein the absorbance spectrum of the colored product overlaps by at least 70% with an emission spectrum from the light source.

20. The system of claim **1** wherein the detector is configured to detect the absorption of the at least one wavelength of light at a reaction site where the reactants react with the bodily fluid within the assay assembly.

21. The system of claim **1** wherein the detector is configured to detect the absorption of the at least one wavelength of light at a detection site after the colored product has been transported from a reaction site where the reactants react with the bodily fluid within the assay assembly.

22. The system of claim **1** wherein the assay assembly comprises at least one well in which the reactants react with the bodily fluid.

23. The system of claim **22** wherein the well is cylindrical in shape and includes a defined length between two opposed flat surfaces, wherein at least one of the flat surfaces is transparent.

24. The system of claim **23** wherein the light source and the detector are on the same side of the well where the one or more reactants react with the bodily fluid.