Claims

1. A flow cell for optical analysis of a test liquid, the flow cell comprising:

- a measuring chamber;

- a first and a second optical window, the first and second optical windows on opposite sides of the measuring chamber;

- an inlet for supply of the test liquid into the flow cell, wherein the inlet is configured to supply a vortex flow of the test liquid through the measuring chamber when the test liquid is supplied through the inlet and into the flow cell; and

- an outlet for discharge of the test liquid from the flow cell, wherein the inlet and outlet are on opposite sides of the measuring chamber, wherein the cross-section of the measuring chamber has a larger surface area at the inlet side as compared to the outlet side.

2. The flow cell of claim 1, wherein the measuring chamber has a circular cross-section.

3. The flow cell of claim 1 wherein the measuring chamber has a top portion and a bottom portion, wherein the top portion slopes from the inlet to the outlet, thereby decreasing the surface area of the cross-section of the measuring chamber.

4. The flow cell of claim 1 wherein the measuring chamber has a top portion and a bottom portion, wherein the bottom portion slopes from the inlet to the outlet, thereby decreasing the surface area of the cross-section of the measuring chamber.

5. The flow cell of claim 1 wherein the measuring chamber has a top portion and a bottom portion, wherein the top portion and the bottom portions slope from the inlet to the outlet, thereby decreasing the surface area of the cross-section of the measuring chamber.

6. The flow cell of claim 1 wherein the inlet is configured to supply the test liquid at a tangent relative to (i) an inscribed circle of the inner volume of the measuring chamber; or (ii) the circular cross-section of the measuring chamber of the flow cell, when the test liquid is supplied through the inlet and into the flow cell.

7. A system comprising the flow cell of claim 1, wherein the system

comprises a light detector positioned near the first optical window.

8. The system of claim 7, wherein the light detector is proximal to the inlet.

9. The system of claim 7, wherein the light detector is proximal to the outlet.

10. The system of claim 7, wherein the system comprises an incident light source positioned near the second optical window.

11. The system of claim 7, wherein the system further comprises a pump for pumping the test liquid into the inlet.

12. A method for optical analysis of a test liquid, the method comprising:

supplying the test liquid into the flow cell inlet of the system of claim 7, thereby generating a vortex flow of the test liquid through the measuring chamber of the flow cell;

optionally, changing the test liquid; and

measuring the optical properties of the test liquid(s) by detecting a photon from the flow cell with the light detector.

13. The method of claim 12, wherein the detecting the photon from the flow cell with the light detector comprises detecting a photon emitted from one or more components of the test liquid after stimulation with an incident light source.

14. The method of claim 12, wherein the detecting the photon from the flow cell with the light detector comprises detecting a photon transmitted through the flow cell from the incident light sources.

15. The flow cell of claim 1 wherein the outlet has a width equal to the radius of (i) an inscribed circle of the outlet side of the measuring chamber, or (ii) the circular cross-section of the outlet side of the measuring chamber.