move the optically active fluid through the intraocular lens system of the present invention.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed:

1. A variable focus intraocular lens comprising:

a first lens portion with at least one lens surface and at least one fluid channel;

a second lens portion with at least one lens surface;

an optical zone defined in the center of each of said first and second lens portions;

a fluid reservoir between said first and second lens portions;

at least one flow loop connecting said fluid reservoir to said fluid channel to define a fluid path, such that said fluid path contains multiple discrete segments of fluid which move through the fluid path, said multiple segments including at least one segment of charged solution.

2. The lens system defined in claim **1** wherein said discrete fluid segments further comprise at least one segment of positively charged solution, at least one segment of negatively charged solution, at least one segment of air, and at least two segments from the group consisting of oil, water and another biocompatible fluid.

3. The lens system defined in claim **2** wherein said discrete fluid segments move through said fluid path in response to the application of a positive potential.

4. The lens system defined in claim **3**, wherein said segment of air is positioned in said optical zone in response to the application of said positive potential.

5. The lens system defined in claim **2** wherein said discrete fluid segments move through said fluid path in response to the application of a negative potential.

6. The lens system defined in claim **4**, wherein one of said segments of oil, water or another fluid is positioned in said optical zone in response to the application of said negative potential.

7. A method of varying the accommodation of an intraocular lens system within an eye, utilizing the potential produced by the contraction and relaxation of a ciliary body of said eye comprising the steps of:

increasing a diopter power of said intraocular lens system in response to an application of a positive potential produced by said ciliary body when said ciliary body contracts to said intraocular lens system; and

decreasing the diopter power of said intraocular lens system in response to an application of a negative potential produced by said ciliary body when said ciliary body relaxes to said intraocular lens system.

8. An intraocular lens for implantation into an eye, comprising:

a first lens surface;

a second surface spaced apart from the first lens surface;

a reservoir in between the first lens surface and the second surface;

at least one flow path into and out of the reservoir;

at least one segment of optical media movably disposed in the at least one flow path; and

at least one segment of charged species movably disposed in the at least one flow path.

9. An intraocular lens as in claim **8**, wherein the flow path provides a continuous flow loop through at least a portion of the reservoir.

10. An intraocular lens as in claim **9**, further comprising a second continuous flow loop.

11. An intraocular lens as in claim **9**, wherein said charged species comprises at least one segment of positively charged media movably disposed within the loop, and spaced apart from at least one segment of negatively charged media movably disposed within the loop.

12. An intraocular lens as in claim **11**, wherein said positively charged media comprises a fluid having a cation therein.

13. An intraocular lens as in claim **8**, wherein at least a portion of the reservoir lies within the optical zone of the lens.

14. An intraocular lens as in claim **8**, wherein said lens is a double convex lens.

15. An intraocular lens as in claim **14**, wherein said double convex lens further comprises a fluid flow path extending therethrough, for providing communication between the flow loop and the portion of the reservoir within the optical zone.

16. An intraocular lens system having variable optical properties, comprising:

a first lens having a flow path extending therethrough;

a second lens spaced apart from the first lens to define a reservoir therebetween;

a first flow loop for providing fluid communication between a first end of the flow path and the reservoir;

a second flow loop for providing fluid communication between a second end of the flow path and the reservoir;

a branch flow path for providing fluid communication between the flow path in the first lens and the reservoir; and

a fluid media disposed within at least a portion the flow path;

wherein the fluid media is movable from a first position within the reservoir and a second position outside of the reservoir.

17. A flow system sized and configured for placement in the eye, said system for moving an optical media into and out of a reservoir in an intraocular lens, said system comprising:

a flow path adapted to be positioned adjacent a muscle, the flow path being in fluid communication with the reservoir;

at least one segment of charged media movably disposed within the flow path;

a first optical media within the flow path, having a first refractive index; and

at least one second optical media in the flow path having a second refractive index;

wherein the first and the at least one second optical media are moved relative to the reservoir in response to an electrical potential generated by the muscle.

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