having the optical characteristics of FIGS. **6**A and **6**B. Similar results can be achieved by using masks of varied density. The vision corrective effect would correspond to that produced by the posterior surface undulations in the lens of FIG. **4**.

FIGS. **8**A, **8**B and **8**C show, respectively, a corneal inlay lens, a corneal onlay lens, and an intraocular lens, each incorporating the concepts of the present invention. In the corneal inlay lens **80** of FIG. **8**A, and in the corneal onlay lens **82** of FIG. **8**B, the illustrated progressive zonal variations are accomplished with the variable refractive index of lens material **84**, as described in conjunction with FIG. **7**.

In the intraocular lens **86** of FIG. **8**C, the posterior surface **88** is shown as an undulating surface having progressive zonal variations comparable to those in FIG. **4**.

Any of the three lens implants of FIGS. **8**A, **8**B or **8**C could use either the surface variations or the refractive index variations, and also could use either the anterior or posterior surface as the multifocal surface.

The implanted lenses of FIGS. **8**A, **8**B and **8**C are subject to the same problems as are the contact lenses, e.g., pupil size variations and decentration problems. The pupil size problems are essentially the same. The decentration problems are less pronounced with implanted lenses, but are nevertheless significant because operational procedures do not insure centration, and, in the case of intraocular lenses, postoperative movement can be quite noticeable.

From the foregoing description, it will be apparent that the apparatus and methods disclosed in this application will provide the significant functional benefits summarized in the introductory portion of the specification.

The following claims are intended not only to cover the specific embodiments disclosed, but also to cover the inventive concepts explained herein with the maximum breadth and comprehensiveness permitted by the prior art.

I claim:

1. The method of forming an ophthalmic lens which comprises:

preparing a lens having anterior and posterior surfaces shaped as segments of spheres which converge at the periphery of the lens; and

causing ion-implantation on at least one surface of the lens in such a way as to cause that surface to have varying optical refractive index values, which provide a plurality of concentric optical zones, each of which zones has a higher power corrective portion and a lower power corrective portion interconnected by progressively varying intermediate portions.

2. The method of forming an ophthalmic lens which comprises:

providing a lens having anterior and posterior surfaces and first and second spaced apart regions of first and second vision correction powers, respectively, said first and second vision correction powers being different; and

causing ion-implantation on the lens in such a way as to cause varying optical refractive index values which provide progressive vision correction powers between the first and second regions.

3. A method as defined in claim **2** wherein the first and second regions are annular and the second region circumscribes the first region and causing ion-implantation on the lens in such a way as to cause varying optical refractive index values which provide progressive vision correction powers between the first and second vision correction powers in an annular zone radially outwardly of the first region.

4. A method as defined in claim **2** wherein the progressive vision correction powers are provided in at least a first generally annular progressive power zone between the first and second regions.

5. A method as defined in claim **4** including causing ion implantation on the lens to produce varying optical refractive index values which provide progressive vision correction powers in at least a second generally annular progressive power zone and said second annular progressive power zone circumscribes the second region.

6. A method as defined in claim **5** wherein the progressive vision correction powers of one of said first and second zones includes progressive vision correction powers which increase in a radial outward direction and the progressive vision correction powers of the other of said first and second zones include progressive vision correction powers which decrease in a radial outward direction.

7. A method as defined in claim **6** wherein the progressive vision correction powers of the first and second zones include some of the same vision correction powers.

8. A method of making an ophthalmic lens as defined in claim **2** wherein the step of causing ion-implantation includes implanting nitrogen ions on the lens.

9. A method of making an ophthalmic lens as defined in claim **2** wherein the step of causing ion-implantation includes implanting ions of atomic size on the lens.

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