coloured contact lenses that are well-equipped with the essential functions as mentioned above, which will exhibit selective transmission or reflection of visible light.

Accordingly, there is a need to provide alternative ophthalmic device that overcomes, or at least ameliorates, one or more of the disadvantages described above. There is also a need to provide a method of preparing a textured surface ophthalmic device that ameliorates one or more disadvantages mentioned above.

Summary

There is provided a textured surface ophthalmic device comprising a polymeric material having a micro or nano-sized textured surface, wherein said polymeric material is configured for insertion into an eye of a human.

According to a first aspect, there is provided a textured surface ophthalmic device comprising a polymeric material having a micro or nano-sized textured surface, wherein said polymeric material is configured for insertion into an eye of a human, and wherein said textured surface ophthalmic device comprises at least one amorphous metal/metal oxide layer deposited thereon.

There is provided a method of preparing a textured surface ophthalmic device comprising a) heating the polymeric material precursor to a molten state and injecting the polymeric material precursor into a patterned mold under pressure; b) providing a complementary negative textured surface on said polymeric material precursor from said patterned mold; and c) removing said textured surface polymeric material from the mold to cool to form said ophthalmic device.

According to another aspect, the present disclosure refers to a method of preparing a textured surface ophthalmic device comprising a) heating the polymeric material precursor to a molten state and injecting the polymeric material precursor into a patterned mold under pressure; b) providing a complementary negative textured surface on said polymeric material precursor from said patterned mold; c) removing said textured surface polymeric material from the mold to cool to form said ophthalmic device; and d) depositing at least one amorphous metal/metal oxide layer on said textured surface ophthalmic device.

Definitions

The following words and terms used herein shall have the meaning indicated:

The term "ophthalmic device" as used herein includes a wide range of design types and applications such as contact lenses, intraocular lenses, ocular inserts, ocular bandages, corneal implants and retinal implants.

The word “substantially” does not exclude “completely” e.g. a composition which is “substantially free” from Y may be completely free from Y. Where necessary, the word “substantially” may be omitted from the definition of the invention.

Unless specified otherwise, the terms "comprising" and "comprise", and grammatical variants thereof, are intended to represent "open" or "inclusive" language such that they include recited elements but also permit inclusion of additional, unrecited elements.

As used herein, the term "about", in the context of concentrations of components of the formulations, typically means +/- 5% of the stated value, more typically +/- 4% of the stated value, more typically +/- 3% of the stated value, more typically, +/- 2% of the stated value, even more typically +/- 1% of the stated value, and even more typically +/- 0.5% of the stated value.

Throughout this disclosure, certain embodiments may be disclosed in a range format. It should be understood that the description in range format is merely for convenience and brevity and should not be construed as an inflexible limitation on the scope of the disclosed ranges. Accordingly, the description of a range should be considered to have specifically disclosed all the possible sub-ranges as well as individual numerical values within that range. For example, description of a range such as from 1 to 6 should be considered to have specifically disclosed sub-ranges such as from 1 to 3, from 1 to 4, from 1 to 5, from 2 to 4,

Claims

1. A textured surface ophthalmic device comprising
a polymeric material having a micro or nano-sized textured surface, wherein said polymeric material is configured for insertion into an eye of a human, and

wherein said textured surface ophthalmic device comprises at least one amorphous metal/metal oxide layer deposited thereon.

2. The textured surface ophthalmic device according to claim 1, wherein said textured surface ophthalmic device is integrally formed with the polymeric material.

3. The textured surface ophthalmic device according to claim 1, wherein said amorphous oxide layer comprises an oxide of a metal selected from titanium, cobalt, zinc, aluminum and composites thereof.

4. The textured surface ophthalmic device according to claim 1, wherein said amorphous metal layer comprises of a metal selected from gold or silver.

5. The textured surface ophthalmic device according to claim 1, wherein said amorphous oxide layer is deposited by atomic layer deposition.

6. The textured surface ophthalmic device according to claim 1, wherein said amorphous metal layer is deposited by electron beam evaporation.

7. The textured surface ophthalmic device according to claim 1, wherein said amorphous oxide layer comprises amorphous titanium dioxide.

8. The textured surface ophthalmic device according to any one of the preceding claims, wherein said textured surface ophthalmic device is substantially optically transparent.

9. The textured surface ophthalmic device according to any one of the preceding claims, wherein said textured surface comprises hierarchical structures.

10. A method of preparing a textured surface ophthalmic device comprising
a) heating the polymeric material precursor to a molten state and injecting the polymeric material precursor into a patterned mold under pressure;
b) providing a complementary negative textured surface on said polymeric material precursor from said patterned mold;
c) removing said textured surface polymeric material from the mold to cool to form said ophthalmic device; and
d) depositing at least one amorphous metal/metal oxide layer on said textured surface ophthalmic device.

11. The method of preparing a textured surface ophthalmic device according to claim 10, wherein said amorphous metal oxide layer comprises an oxide of a metal selected from titanium, cobalt, zinc, aluminum and composites thereof.

12. The method of preparing a textured surface ophthalmic device according to claim 10, wherein said amorphous metal layer comprises of a metal selected from gold or silver.