Claims:

1. An optical coating, comprising:

a plurality of low refractive index layers, each having a first refractive index;

a plurality of high refractive index layers each having a second refractive index which is higher than the first refractive index;

wherein the low refractive index layers and the high refractive index layers are arranged alternatingly in interlaced manner to form a stack;

wherein each of the low refractive index layers and high refractive index layers comprises a nano-laminate layer made up of alternating nano-layers of two different materials.

2. The optical coating of Claim 1, wherein the each of the nano-layers has a thickness of from 2nm to 10nm.

3. The optical coating of Claim 1, wherein:

when the at least one layer is selected from the low refractive index layers, each of the two different materials is selected to have refractive index having value closer to the first refractive index than the second refractive index; and,

when the at least one layer is selected from the high refractive index layers, each of the two different materials is selected to have refractive index having value closer to the second refractive index than the first refractive index.

4. The optical coating of Claim 1, wherein:

in the low refractive index layers, each of the two different materials is made up of an oxide material; and,

in the high refractive index layers, each of the two different materials is made up of a nitride material.

5. The optical coating of Claim 1, wherein:

each of the plurality of low refractive index layers comprises two different materials having refractive index value closer to the first refractive index than the second refractive index;

each of the plurality of high refractive index layers comprises two different materials having refractive index value closer to the second refractive index than the first refractive index.

6. The optical coating of Claim 1, wherein within the a nano-laminate layer the two different materials are selected such that the expression $(n_1-n_2)/(n_1+n_2) \leq 0.07$ is satisfied, wherein n_1 and n_2 are the refractive indexes of the two different materials.

7. The optical coating of Claim 1, wherein:

each of the plurality of low refractive index layers comprises two different materials having refractive indexes n_1 and n_2, respectively, and wherein the expression $(n_1-n_2)/(n_1+n_2) \leq 0.07$ is satisfied;

each of the plurality of high refractive index layers comprises two different materials having refractive indexes n_i and n_j, respectively, the expression $(n_i-n_j)/(n_i+n_j) \leq 0.07$ is satisfied.

8. The optical coating of Claim 7, wherein the expression $(n_f-n_s)/(n_f+n_s) \geq 0.10$ is satisfied, wherein n_f equals the first refractive index and n_s equals the second refractive index.

9. The optical coating of Claim 1, wherein the two different materials of the high refractive index layers are made from two or more of the following: ZrO2, ZrN, AlN, Si3N4, TiO2, Nb2O5, Ta2O5, CrO2, WO3.

10. The optical coating of Claim 1, wherein the two different materials of the low refractive index layers are made from two or more of the following: SiO2, Al2O3, SiOxNy, SixAlyOz.

11. The optical coating of Claim 1, further comprising a diamond-like carbon coating (DLC) formed over the stack.

12. The optical coating of Claim 11, further comprising:

a silicon layer formed over the DLC;

an SiO2 layer formed over the silicon layer; and,

an anti-fingerprint (AF) layer formed over the SiO2 layer.

13. An optical coating comprising:

a plurality of first layers having a first refractive index;

a plurality of second layers having a second refractive index different from the first refractive index;

wherein the plurality of first layers and the plurality of second layers are formed alternatingly in an interlaced manner over a substrate, terminating with one layer from the plurality of second layers; and,

a top layer formed over the one layer, the top layer comprising a nano-laminate having a plurality of bi-layers, each bi-layer comprising two nano-layers made of different materials, such that the effective refractive index of the top layer has a value closer to the first refractive index than the second refractive index;

wherein the different materials are made from two or more of the following: SiO2, Al2O3, SiOxNy, SixAlyOz.

14. The optical coating of Claim 13, the different materials are selected such that the expression $(n_1-n_2)/(n_1+n_2) \leq 0.07$ is satisfied, wherein n_1 and n_2 are the refractive indexes of the different materials.

15. The optical coating of Claim 14, wherein effective refractive index n_{eff} of the top layer satisfies the expression $|(n_{eff}-n_s)/(n_{eff}+n_s)| \geq 0.10$, wherein n_s is the refractive index of the one layer.

16. The optical coating of Claim 15, wherein the different materials are made from two or more of the following: ZrO2, ZrN, AlN, Si3N4, TiO2, Nb2O5, Ta2O5, CrO2, WO3.

17. The optical coating of Claim 15, further comprising a diamond-like coating (DLC) formed over the top layer.

18. The optical coating of Claim 17, further comprising:

a silicon layer formed over the DLC;

an SiO2 layer formed over the silicon layer; and,

an anti-fingerprint (AF) layer formed over the SiO2 layer.