WHAT IS CLAIMED IS:

1. A method of manufacturing meta lenses, comprising:

depositing an optical material over a substrate;

spin coating a nano-imprint resist over the optical material;

contacting a mold with the nano-imprint resist, wherein the mold has a plurality of circular cylindrical recesses and a protruding portion, and the circular cylindrical recesses are spaced apart from each other, wherein the mold has an anti-stick layer applied over the circular cylindrical recesses and the protruding portion of the mold, so that in the step of contacting the mold with the nano-imprint resist, the anti-stick layer is directly in contact with the nano-imprint resist;

curing the nano-imprint resist after the mold is in contact with the nano-imprint resist to form a nano-imprint resist pattern, wherein the nano-imprint resist pattern has a plurality of circular cylindrical thick portions and a thin portion, and the circular cylindrical thick portions respectively correspond to the circular cylindrical recesses of the mold, and the thin portion corresponds to the protruding portion of the mold;

moving the mold upward to separate from the nano-imprint resist pattern;

removing the thin portion and remaining the circular cylindrical thick portions; and

patterning the optical material according to the remaining circular cylindrical thick portions to form a plurality of circular cylindrical meta lenses.

2. The method of manufacturing the meta lenses of claim 1, further comprising:

removing the circular cylindrical thick portions after forming the

circular cylindrical meta lenses.

3. The method of manufacturing the meta lenses of claim 1, wherein the step of contacting the mold with the nano-imprint resist comprises filling the circular cylindrical recesses of the mold with the nano-imprint resist, and the step of filling the circular cylindrical recesses of the mold with the nano-imprint resist comprises moving the mold downward, heating the nano-imprint resist, or a combination thereof.

4. The method of manufacturing the meta lenses of claim 1, wherein the step of curing the nano-imprint resist comprises performing an ultraviolet light irradiation treatment.

5. The method of manufacturing the meta lenses of claim 1, wherein the step of curing the nano-imprint resist comprises performing a cooling treatment, and the nano-imprint resist is made of a thermoplastic material.

6. The method of manufacturing the meta lenses of claim 1, further comprising:

forming a chromium-containing layer over the optical material after depositing the optical material over the substrate and before spin coating the nano-imprint resist over the optical material.

7. The method of manufacturing the meta lenses of claim 1, wherein the optical material comprises amorphous silicon, titanium dioxide or a combination thereof.

8. The method of manufacturing the meta lenses of claim 1, further

comprising:

forming a back protective layer beneath the substrate after depositing the optical material over the substrate and before spin coating the nano-imprint resist over the optical material, and the substrate is between the optical material and the back protective layer.

9. The method of manufacturing the meta lenses of claim 1, wherein the mold is made from a master stamp.

10. The method of manufacturing the meta lenses of claim 1, wherein the mold is a disposable polymer stamp.

11. The method of manufacturing the meta lenses of claim 1, wherein

the circular cylindrical meta lenses spaced apart from each other, and an included angle between a sidewall of one of the circular cylindrical meta lenses and a bottom surface of the one of the circular cylindrical meta lenses is in a range of from 85 degrees to 88 degrees or in a range of from 92 degrees to 95 degrees.

12. The method of manufacturing the meta lenses of claim 11, wherein a ratio of a height of the one of the circular cylindrical meta lenses to a maximum diameter of the one of the circular cylindrical meta lenses is in a range of from 1.25 to 3.5.

13. The method of manufacturing the meta lenses of claim 11, wherein a height of the one of the circular cylindrical meta lenses is in a range of from 250 nm to 350 nm, and a maximum diameter of the one of the circular cylindrical meta lenses is in a range of from 100 nm to 200 nm.

14. The method of manufacturing the meta lenses of claim 11, wherein a minimum distance between adjacent two of the circular cylindrical meta lenses is in a range of from 75 nm to 125 nm.