CLAIMS

WHAT IS CLAIMED IS:

1. A blank mask comprising a transparent substrate and a light shielding film disposed on the transparent substrate,

wherein the light shielding film comprises a transition metal comprising Cr and at least one selected from the group consisting of oxygen and nitrogen,

wherein a surface of the light shielding film has a first contact angle of 40 ° to 45 ° measured by using diiodo-methane as a first liquid contacting the surface of the light shielding film,

wherein the surface of the light shielding film has an Rsk value, which is a skewness value, of -1 to 0, and

wherein the surface of the light shielding film has an Rku value, which is kurtosis value, of 7 or less.

2. The blank mask of claim 1, wherein a ratio of a dispersion component of a surface energy of the surface of the light shielding film to the surface energy of the surface of the light shielding film is 0.84 to 0.865.

3. The blank mask of claim 2, wherein the dispersion component of the surface energy of the surface of the light shielding film is 37 mN/m to 40 mN/m.

4. The blank mask of claim 2, wherein the light shielding film has the surface energy of 43 mN/m to 47 mN/m.

5. The blank mask of claim 1, wherein the first contact angle divided by a second contact angle of the light shielding film measured by using pure water as a second liquid contacting the surface of the light shielding film is 0.58 to 0.604.

6. The blank mask of claim 1, wherein the surface of the light shielding film has an Rku value of 2 or more.

7. The blank mask of claim 1, wherein the light shielding film comprises a first light shielding layer and a second light shielding layer disposed on the first light shielding layer.

8. The blank mask of claim 7, wherein an amount of the transition metal in the second light shielding layer is greater than an amount of the transition metal in the first light shielding layer.

9. The blank mask of claim 1, wherein the transition metal further comprises at least one selected from the group consisting of Ta, Ti, and Hf.

10. A photomask comprising a transparent substrate and a light shielding pattern film disposed on the transparent substrate,

wherein the light shielding pattern film comprises a transition metal comprising Cr and at least one selected from the group consisting of oxygen and nitrogen,

wherein an upper surface of the light shielding pattern film has a contact angle of 40 ° to 45 ° measured by using diiodo-methane as a liquid contacting the surface of the light shielding film,

wherein the surface of the light shielding pattern film has an Rsk value, which is a skewness value, of -1 to 0, and

wherein the surface of the light shielding pattern film has an Rku value, which is kurtosis value, of 7 or less.

11. A method of manufacturing a semiconductor element comprising:

preparing a light source, a photomask, and a semiconductor wafer, onto which a resist film has been applied;

selectively transmitting a light incident from the light source through the photomask onto the semiconductor wafer; and

developing a pattern on the semiconductor wafer,

wherein the photomask comprises a transparent substrate and a light shielding pattern film disposed on the transparent substrate,

wherein the light shielding pattern film comprises a transition metal comprising Cr and at least one selected from the group consisting of oxygen and nitrogen,

wherein an upper surface of the light shielding pattern film has a contact angle of 40 ° to 45 ° measured by using diiodo-methane as a liquid contacting the surface of the light shielding film,

wherein the surface of the light shielding pattern film has an Rsk value, which is a skewness value, of -1 to 0, and

wherein the surface of the light shielding pattern film has an Rku value, which is kurtosis value, of 7 or less.