

What is claimed is:

1. An extreme ultraviolet (EUV) mask blank comprising:
 - a substrate;
 - 5 a multilayer stack which reflects EUV radiation, the multilayer stack comprising a plurality of reflective layer pairs;
 - a capping layer on the multilayer stack which reflects UV radiation; and
 - an absorber on the capping layer, the absorber comprising a plurality of bilayers comprising a first layer of silicon and a second layer selected from the
 - 10 group consisting of TaSb, CSb, TaNi, TaCu, SbN, CrN, Cr, Ir, Pd, Re, Os, Cd, Co, Ag, Pt, oxides of TaSb, CSb, TaNi, TaCu, SbN, CrN, Cr, Ir, Pd, Re, Os, Cd, Co, Ag, Pt, and nitrides of TaSb, CSb, TaNi, TaCu, Cr, Ir, Pd, Re, Os, Cd, Co, Ag, and Pt.
- 15 2. The EUV mask blank of claim 1, wherein the second layer comprises TaSb.
3. The EUV mask blank of claim 2, wherein the TaSb comprises a range of from about 21.9 wt.% to about 78.2 wt.% tantalum and a range of from about 21.8 wt.% to about 78.1 wt.% antimony.
- 20 4. The EUV mask blank of claim 1, wherein the second layer is selected from Cr, oxides of Cr and nitrides of Cr.
5. The EUV mask blank of claim 4, wherein the absorber comprises from 3 to 40
- 25 bilayers.
6. The EUV mask blank of claim 1, wherein the second layer comprises TaNi.
7. The EUV mask blank of claim 6, wherein the TaNi comprises a range of from
- 30 about 56.9 wt.% to about 94.6 wt.% tantalum and a range of from about 5.4 wt.% to about 43.1 wt.% nickel.

8. The EUV mask blank of claim 1, wherein the second layer comprises CSb.
9. The EUV mask blank of claim 8, wherein the CSb comprises a range of from about 0.3 wt.% to about 3.6 wt.% carbon and a range of from about 96.4 wt.%
5 to about 99.7 wt.% antimony, or a range of from about 5.0 wt.% to about 10.8 wt.% carbon and a range of from about 89.2 wt.% to about 95.0 wt.% antimony.
10. The EUV mask blank of claim 1, wherein the absorber comprises from 3 to 40 bilayers.
- 10 11. A method of manufacturing an extreme ultraviolet (EUV) mask blank comprising:
forming on a substrate a multilayer stack which reflects EUV radiation,
the multilayer stack comprising a plurality of reflective layer pairs;
15 forming a capping layer on the multilayer stack; and
forming an absorber on the capping layer, the absorber comprising a plurality of bilayers comprising a first layer of silicon and a second layer selected from the group consisting of TaSb, CSb, TaNi, TaCu, SbN, CrN, Cr, Ir, Pd, Re, Os, Cd, Co, Ag, Pt, oxides of TaSb, CSb, TaNi, TaCu, SbN, CrN, Cr, Ir,
20 Pd, Re, Os, Cd, Co, Ag, Pt, and nitrides of TaSb, CSb, TaNi, TaCu, Cr, Ir, Pd, Re, Os, Cd, Co, Ag, and Pt.
12. The method of claim 11, wherein the second layer comprises TaSb.
- 25 13. The method of claim 12, wherein the TaSb comprises a range of from about 21.9 wt.% to about 78.2 wt.% tantalum and a range of from about 21.8 wt.% to about 78.1 wt.% antimony.
14. The method of claim 11, wherein the second layer is selected from Cr, oxides
30 of Cr and nitrides of Cr.
15. The method of claim 14, wherein the absorber comprises from 3 to 40 bilayers.

16. The method of claim 11, wherein the second layer comprises TaNi.
17. The method of claim 16, wherein the TaNi comprises a range of from about
5 56.9 wt.% to about 94.6 wt.% tantalum and a range of from about 5.4 wt.% to
about 43.1 wt.% nickel.
18. The method of claim 11, wherein the second layer comprises CSb.
- 10 19. The method of claim 18, wherein the CSb comprises a range of from about 0.3
wt.% to about 3.6 wt.% carbon and a range of from about 96.4 wt.% to about
99.7 wt.% antimony, or a range of from about 5.0 wt.% to about 10.8 wt.%
carbon and a range of from about 89.2 wt.% to about 95.0 wt.% antimony.
- 15 20. The method of claim 11, wherein the absorber comprises from 3 to 40 bilayers.