What is claimed is:

1. A method of manufacturing an extreme ultraviolet (EUV) mask blank comprising:

providing a substrate;

forming a multilayer stack of reflective layers on the substrate, the multilayer stack of reflective layers including a plurality of reflective layer pairs;

forming a capping layer on the multilayer stack of reflective layers; and

forming an absorber layer on the capping layer, the absorber layer comprising an alloy of tantalum and nickel,

wherein the alloy of tantalum and nickel is selected from an alloy having about 70 wt.% to about 85 wt.% tantalum and about 15 wt.% to about 30 wt.% nickel, an alloy having about 45 wt.% to about 55 wt.% tantalum and about 45 wt.% to about 55 wt.% nickel, and an alloy having about 30 wt.% to about 45 wt.% tantalum and about 55 wt.% to about 70 wt.% nickel.

2. The method of claim 1, wherein the alloy of tantalum and nickel is selected from an alloy having about 70 wt.% to about 75 wt.% tantalum and about 25 wt.% to about 30 wt.% nickel, an alloy having about 48 wt.% to about 55 wt.% tantalum and about 45 wt.% to about 52 wt.% nickel, and an alloy having about 35 wt.% to about 45 wt.% tantalum and about 55 wt.% to about 65 wt.% nickel.

3. The method of claim 1, wherein the alloy is co-sputtered by a gas selected from one or more of argon (Ar), oxygen (O_2), or nitrogen (N_2) to form the absorber layer.

4. The method of claim 1, wherein the alloy is deposited layer by layer as a laminate of tantalum and nickel layers using a gas selected from one or more of argon (Ar), oxygen (O_2), or nitrogen (N_2) to form the absorber layer.

5. The method of claim 1, wherein the alloy is deposited using a bulk target having the same composition as the alloy and is sputtered using a gas selected

~~from one or more of argon (Ar), oxygen (O_2), or nitrogen (N_2) to form the absorber layer.~~

~~6. The method of claim 1, wherein the absorber layer has a thickness of less than 45 nm.~~

~~7. The method of claim 1, wherein the absorber layer is etch selective relative to the capping layer.~~

~~8. An extreme ultraviolet (EUV) mask blank comprising:~~

~~a substrate;~~

~~a multilayer stack of reflective layers on the substrate, the multilayer stack of reflective layers including a plurality of reflective layers including reflective layer pairs;~~

~~a capping layer on the multilayer stack of reflecting layers; and~~

~~an absorber layer comprising an alloy of tantalum and nickel,~~

~~wherein the alloy of tantalum and nickel is selected from an alloy having about 70 wt.% to about 85 wt.% tantalum and about 15 wt.% to about 30 wt.% nickel, an alloy having about 45 wt.% to about 55 wt.% tantalum and about 45 wt.% to about 55 wt.% nickel, and an alloy having about 30 wt.% to about 45 wt.% tantalum and about 55 wt.% to about 70 wt.% nickel.~~

~~9. The extreme ultraviolet (EUV) mask blank of claim 8, wherein the absorber layer has a thickness of less than 45 nm.~~

~~10. The extreme ultraviolet (EUV) mask blank of claim 8, wherein the absorber layer is etch selective relative to the capping layer.~~

~~11. The extreme ultraviolet (EUV) mask blank of claim 8, wherein the absorber layer further comprises 0.1 wt.% to about 5 wt% of a dopant selected from one or more of nitrogen or oxygen.~~

~~12. The extreme (EUV) mask blank of claim 8, wherein the alloy of tantalum and nickel comprises an alloy having about 70 wt.% to about 75 wt.% tantalum and about 30 wt.% to about 25 wt.% nickel.~~

~~13. The extreme ultraviolet (EUV) mask blank of claim 8, wherein the alloy of tantalum and nickel comprises an alloy having about 48 wt.% to about 55 wt.% tantalum and about 45 wt.% to about 52 wt.% nickel.~~

~~14. The extreme ultraviolet (EUV) mask blank of claim 8, wherein the alloy of tantalum and nickel comprises an alloy having about 35 wt.% to about 45 wt.% tantalum and about 55 wt.% to about 65 wt.% nickel.~~

~~15. An extreme ultraviolet (EUV) mask blank comprising:~~

~~a substrate;~~

~~a multilayer stack of reflective layers on the substrate, the multilayer stack of reflective layers including a plurality of reflective layers including reflective layer pairs of molybdenum (Mo) and silicon (Si);~~

~~a capping layer on the multilayer stack of reflecting layers; and~~

~~an absorber layer comprising an alloy of tantalum and nickel,~~

~~wherein the alloy of tantalum and nickel is selected from an alloy having about 70 wt.% to about 75 wt.% tantalum and about 30 wt.% to about 25 wt.% nickel, an alloy having about 48 wt.% to about 55 wt.% tantalum and about 45 wt.% to about 52 wt.% nickel, and an alloy having about 35 wt.% to about 45 wt.% tantalum and about 55 wt.% to about 65 wt.% nickel.~~

1. An invention not claimed in any divisional application.