

ABSTRACT

TITLE: AMORPHOUS LAYER EXTREME ULTRAVIOLET LITHOGRAPHY BLANK, AND MANUFACTURING AND LITHOGRAPHY SYSTEMS THEREFOR

An integrated extreme ultraviolet blank production system includes: a vacuum chamber for placing a substrate in a vacuum; a deposition system for depositing a multi-layer stack without removing the substrate from the vacuum; and a treatment system for treating a layer on the multi-layer stack to be deposited as an amorphous metallic layer. A physical vapor deposition chamber for manufacturing an extreme ultraviolet mask blank includes: a target, comprising molybdenum alloyed with boron. An extreme ultraviolet lithography system includes: an extreme ultraviolet light source; a mirror for directing light from the extreme ultraviolet light source; a reticle stage for placing an extreme ultraviolet mask blank with a multi-layer stack having an amorphous metallic layer; and a wafer stage for placing a wafer. An extreme ultraviolet blank includes: a substrate; a multi-layer stack having an amorphous metallic layer; and capping layers over the multi-layer stack.

Figure 3