

ABSTRACT

APPARATUS FOR DEPOSITION OF MATERIALS ON A SUBSTRATE

Methods and apparatus for deposition of materials on a substrate are provided herein. In some embodiments, an apparatus for processing a substrate may include a process chamber having a substrate support disposed therein to support a processing surface of a substrate, an injector disposed to a first side of the substrate support and having a first flow path to provide a first process gas and a second flow path to provide a second process gas independent of the first process gas, wherein the injector is positioned to provide the first and second process gases across the processing surface of the substrate, a showerhead disposed above the substrate support to provide the first process gas to the processing surface of the substrate, and an exhaust port disposed to a second side of the substrate support, opposite the injector, to exhaust the first and second process gases from the process chamber.

[Figure 1A]