CLAIMS

1. A method of forming a stack of semiconductor layers, the method comprising:

depositing a first silicon oxide layer on a substrate;

depositing a first silicon layer on the first silicon oxide layer;

depositing a first silicon nitride layer on the first silicon layer;

depositing a second silicon layer on the first silicon nitride layer; and

depositing a stress layer on a side of the substrate opposite a side of the substrate with the first silicon oxide layer and forming the stack of semiconductor layers comprising the first silicon oxide layer, the first silicon layer, the first silicon nitride layer, and the second silicon layer.

2. The method of claim **1**, wherein the stress layer is a second silicon nitride layer.

3. The method of claim **1**, wherein depositing the stress layer is after the substrate is characterized by a bow exceeding a threshold value.

4. The method of claim **3**, wherein after depositing the stress layer, the substrate is characterized by a bow not exceeding the threshold value.

5. The method of claim **1**, wherein depositing the stress layer is after depositing the first silicon nitride layer and before depositing the second silicon layer.

6. The method of claim **1**, wherein depositing the stress layer is after depositing the second silicon layer and before patterning the second silicon layer.

7. The method of claim **1**, wherein depositing the first silicon oxide layer, the first silicon layer, the first silicon nitride layer, the second silicon layer, and the stress layer are by low pressure chemical vapor deposition.

8. The method of claim **1**, wherein:

the substrate is in contact with the first silicon oxide layer,

the first silicon oxide layer is in contact with the first silicon layer,

the first silicon layer is in contact with the first silicon nitride layer, and

the first silicon nitride layer is in contact with the second silicon layer.

9. The method of claim **1**, further comprising:

depositing a second silicon oxide layer on the second silicon layer,

depositing a third silicon layer on the second silicon oxide layer,

depositing a second silicon nitride layer on the third silicon layer,

depositing a fourth silicon layer on the second silicon nitride layer, and

depositing the stress layer after depositing the fourth silicon layer.

10. The method of claim **9**, wherein depositing the stress layer is after the substrate is characterized by a bow exceeding a threshold value.

11. The method of claim **1**, further comprising removing the substrate from a processing tool.

12. The method of claim **1**, wherein:

depositing the first silicon oxide layer, depositing the first silicon nitride layer, depositing the stress layer are performed in a first chamber of a processing tool, and

depositing the first silicon layer and depositing the second silicon layer are performed in a second chamber of the processing tool.