CLAIMS

1. A method of forming a plurality of diodes, comprising:

forming a first mask over silicon of a semiconductor substrate, the first mask comprising first trenches formed there-through running in a first major direction over the substrate, the first mask comprising a hardmask layer;

plasma etching first trenches into the silicon of the semiconductor substrate using the first mask, the plasma etching of the first trenches into the silicon comprising forming an etching plasma using precursor gases comprising SF_6, an oxygen-containing compound, and a nitrogen-containing compound;

forming a second mask over the first trenches, the second mask comprising second trenches formed there-through running in a second major direction over the substrate which is orthogonal to the first major direction, the second mask comprising the hardmask layer of the first mask and not passing through the first trenches, the second trenches extending through the hardmask layer of the first mask;

plasma etching second trenches into the silicon of the semiconductor substrate using the second mask, the plasma etching of the second trenches into the silicon comprising forming an etching plasma using precursor gases comprising SF_6, an oxygen-containing compound, and a nitrogen-containing compound, the plasma etching of the second trenches into the silicon forming spaced silicon-comprising mesas; and

providing individual diodes on individual of the mesas and depositing insulative material to be received about the spaced silicon-comprising mesas.

2. The method of claim 1 wherein the individual diodes comprise a p-type silicon-comprising region and an n-type silicon-comprising region.

3. The method of claim 1 wherein the oxygen-containing compound and the nitrogen-containing compound comprise different compounds in each of the plasma etchings of the first and second trenches.

4. The method of claim 1 wherein the oxygen-containing compound and the nitrogen-containing compound comprise the same compound in each of the plasma etchings of the first and second trenches.

5. The method of claim 4 wherein the same compound comprises NO_x.

6. The method of claim 1 wherein the precursor gases comprise HBr in each of the plasma etchings of the first and second trenches.

7. The method of claim 1 wherein the first mask comprises a plurality of layers.

8. The method of claim 1 wherein the second mask comprises a plurality of layers.

The invention claimed is:

1. A method of forming a plurality of diodes, comprising:

forming a first mask over silicon of a semiconductor substrate, the first mask comprising first trenches formed there-through running in a first major direction over the substrate, the first mask comprising a hardmask layer;

plasma etching first trenches into the silicon of the semiconductor substrate using the first mask, the plasma etching of the first trenches into the silicon comprising forming an etching plasma using precursor gases consisting of SF_6, an oxygen-containing component, and a nitrogen-containing component;

forming a second mask over the first trenches, the second mask comprising second trenches formed there-through running in a second major direction over the substrate which is orthogonal to the first major direction, the second mask comprising the hardmask layer of the first mask and not passing through the first trenches, the second trenches extending through the hardmask layer of the first mask;

plasma etching second trenches into the silicon of the semiconductor substrate using the second mask, the plasma etching of the second trenches into the silicon comprising forming an etching plasma using precursor gases consisting of SF_6, an oxygen-containing component, and a nitrogen-containing component, the plasma etching of the second trenches into the silicon forming spaced silicon-comprising mesas; and

providing individual diodes on individual of the mesas and depositing insulative material to be received about the spaced silicon-comprising mesas.

2. The method of claim 1 wherein the individual diodes comprise a p-type silicon-comprising region and an n-type silicon-comprising region.

3. The method of claim 1 wherein the oxygen-containing component and the nitrogen-containing component comprise different compounds in each of the plasma etchings of the first and second trenches.

4. The method of claim 1 wherein the oxygen-containing component and the nitrogen-containing component comprise the same compound in each of the plasma etchings of the first and second trenches.

5. The method of claim 4 wherein the same compound comprises NO_x.

6. The method of claim 1 wherein the first mask comprises a plurality of layers.

7. The method of claim 1 wherein the second mask comprises a plurality of layers.