

What is claimed is:

1. A gas supply assembly for providing a gas mixture comprising germanium tetrafluoride (GeF₄) and hydrogen (H₂) gases in an ion implantation chamber comprising:
one or more fluid supply package(s) comprising GeF₄ and H₂ wherein the assembly is configured to provide a gas mixture comprising GeF₄ and H₂ in an ion implantation chamber, wherein H₂ is present in an amount in the range of 25%-67% (volume) of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 3:1 to 33:67.
2. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 37-67% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 63:37 to 33:67.
3. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 42-62% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 29:21 to 19:31.
4. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 45-59% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 11:9 to 41:59.
5. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 47-57% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 53:47 to 43:57.
6. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 49-55% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 51:49 to 9:11.
7. The gas supply assembly of claim 1 wherein H₂ is present in an amount in the range of 51-53% of the gas mixture, or GeF₄ and H₂ are present in a volume ratio (GeF₄:H₂) in the range of 49:51 to 47:53.
8. The gas supply assembly of any of the previous claims wherein the gases consist essentially of GeF₄ and H₂.

9. The gas supply assembly of any of claims 1-7 further comprising an inert gas selected from the group consisting of argon, helium, neon, nitrogen, xenon, and krypton.
10. The gas supply assembly of any of claims 1-7, wherein GeF_4 and H_2 are mixed in a single fluid supply package.
11. The gas supply assembly of any of the claims 1-7 wherein GeF_4 is present in a GeF_4 -containing gas supply package and H_2 is present in a separate H_2 -containing gas supply package.
12. The gas supply assembly of any of claims 1-7, wherein GeF_4 is not isotopically enriched.
13. A method of implanting germanium in a substrate, comprising introducing germanium tetrafluoride (GeF_4) and hydrogen (H_2) gases into an ion implantation chamber comprising, wherein introducing provides a gas mixture comprising GeF_4 and H_2 an ion implantation chamber, wherein H_2 is present in an amount in the range of 25%-67%, or GeF_4 and H_2 are present in a volume ratio ($\text{GeF}_4:\text{H}_2$) in the range of 3:1 to 33:67.