4. The method of claim 1 wherein the method additionally includes the step of treating the cleaned Si surface with 3-methyl-3-methoxybutanol prior to contacting the cleaned Si surface with the dilute dopant solution.

5. The method of claim 1, wherein the method further includes the step of diffusing the dopant material into the Si surface by annealing the layer of dopant material on the Si surface.

6. The method of claim 16 wherein said diffusing step comprises using rapid thermal annealing.

7. The method of claim 1 wherein said dopant material is provided in an amount of between 1wt.% and 20 wt.% based on the weight of the dilute dopant solution.

8. The method of claim 1 wherein said dopant material is provided in an amount of 4 wt.% or less based on the weight of the dilute dopant solution.

9. The method of claim 1 wherein said dopant material comprises diethyl 1-propylphoshonate.

10. The method of claim 1 wherein said dopant material comprises allylboronic acid pinacol ester.

11. The method of any one of claims 1-10, wherein the solvent comprises tetraethylene glycol dimethyl ether.

12. The method of claim 11, wherein said dilute dopant solution comprises a second solvent in addition to tetraethylene glycol dimethyl ether.

13. The method of claim 12, wherein said second solvent comprises triethylene glycol dimethyl ether, diethylene glycol dimethyl ether, dimethylsulfoxide, dimethylsulfone, N-methylpyrrolidone, 1 formyl piperidine, Isopar M, ethanolamine, diethanolamine,

4. The method of claim 1 wherein the method additionally includes the step of treating the cleaned Si surface with 3-methyl-3-methoxybutanol prior to contacting the cleaned Si surface with the dilute dopant solution.

5. The method of claim 1, wherein the method further includes the step of diffusing the dopant material into the Si surface by annealing the layer of dopant material on the Si surface.

6. The method of claim 5, wherein said diffusing step comprises using rapid thermal annealing.

7. The method of claim 1 wherein said dopant material is provided in an amount of between 1wt.% and 20 wt.% based on the weight of the dilute dopant solution.

8. The method of claim 1 wherein said dopant material is provided in an amount of 4 wt.% or less based on the weight of the dilute dopant solution.

9. The method of claim 1 wherein said dopant material comprises diethyl 1-propylphoshonate.

10. The method of claim 1 wherein said dopant material comprises allylboronic acid pinacol ester.

11. The method of any one of claims 1-10, wherein the solvent comprises tetraethylene glycol dimethyl ether.

12. The method of claim 11, wherein said dilute dopant solution comprises a second solvent in addition to tetraethylene glycol dimethyl ether.

13. The method of claim 12, wherein said second solvent comprises triethylene glycol dimethyl ether, diethylene glycol dimethyl ether, dimethylsulfoxide, dimethylsulfone, N-methylpyrrolidone, 1 formyl piperidine, Isopar M, ethanolamine, diethanolamine,