Heatpulse 610 Rapid Thermal Annealer

Operating Procedures LINK

Process Description:

Rapid thermal annealing is a process for heating or annealing single wafers in very rapid processing times with high thermal uniformity. The rapid thermal process is used after deposition, plasma etching, or ion implantation has taken place. Deposition and etching processes can develop stresses in the deposited thin film or wafer that need to be removed. Doing anneals after ion implantation activates the doping profile and removes any crystal damage caused by the implant.

Equipment Description:

The Heatpulse 610 is a rapid thermal system that uses high-intensity visible radiation to heat single wafers for 1-600 seconds. The temperature range is 400 – 1000ºC and controlled with pyrometer and thermocouple temperature sensing. The heating rate is user controlled at 1–200ºC per second. The chamber is cooled using nitrogen gas. The manually controlled process gases are nitrogen and 5% hydrogen balanced in nitrogen. The quartz wafer tray is sized for a 4-inch wafer.

Materials Allowed		***Materials Not Allowed***
AlGAs	Polysilicon	Other metals
Au	Pt	Photoresists
Carbon	Silicon	Polymers
Ge	SiO2	
InP	Si3N4	
Ni	Ti	

Gases Available	
5% Hydrogen bal. Nitrogen	
Nitrogen