Unaxis 790 RIE

Operating Procedures LINK

Process Description:

The purpose of this system is to selectively remove (etch) various thin films. One common method of selectively removing a thin film is reactive ion etching (RIE) using a RF plasma system. In this system, the wafers are placed on a plasma electrode. When a voltage difference is present between the plasma and the electrode, ion bombardment occurs. A fluorine rich plasma will deposit fluorocarbons on all surfaces but the directional velocity of the ions will continue the etch process on the horizontal surface with little sidewall reactions. The result of RIE is an anisotropic etch with good selectivity.

Equipment Description:

The Unaxis 790 is a RIE system which is computer controlled using MS-DOS® and Windows®. The operator runs programmable processes. The process chamber is 11 inches in diameter and uses water as the cooling medium. The vacuum system consists of a dual stage rotary vane mechanical pump and a turbomolecular pump. The maximum RF power for this system is 500 watts.

Materials Allowed		***Materials Not Allowed***
AlGAs	Photoresists	---------
All metals	BP sodium glass	
Carbon	GaAs	
InP	Polysilicon	
Photoresists	Polymers	
Quartz	Silicon	
Silicon dioxide	Silicon nitride	

Gases Available	
Argon	Oxygen
Halocarbon 14 (CF4)	Nitrogen
Halocarbon 23 (CHF3)	Sulfur Hexafluoride (SF6)
Helium	