國家實驗研究院
NATIONAL INSTITUTES OF APPLIED RESEARCH

Introduction to Comprehensive Ion Implanter

Tool (1) Overview

Implantation Tool Introduction

○ System introduction

System name: Medium-current ion implanter
Manufacturer: Varian
Mode: E500
System functions: Ion Implantation

○ Function introduction

System functions:
Implants B, BF2, P, As, Ar, C, N, and Si ions.
Process conditions:
Energy (keV): 10~200 keV
Dose: 1E12~5E15 (ion/cm^2)

○ System restrictions

1. Large-area metal is not permitted.
2. The wafer tilt angle must be ≤ 60°.
3. If photoresist is applied, a hard bake is required.
4. The wafer must be 2-inch or a broken wafer, securely affixed with vacuum tape onto a 6-inch or 8-inch carrier wafer. Do not attach anything (including broken wafers or vacuum tape) within 2 cm of the outer edge or on the back side of the 6-inch or 8-inch carrier wafer.
5. We are not responsible for any wafer breakage resulting from the use of non-standard wafers during installation or implantation. (Please refer to the notes for complete details.)

Tool (2) Overview

Implantation Tool Introduction

○ System introduction

System name: High-Precision Ion Implanter (High-current ion implanter)
Manufacturer: AIBT
Model: iPulsar
System functions: Ion Implantation

○ Function introduction

System functions:
Implants B, BF2, P, and As ions.
Process conditions:
Energy (keV): 1~40 keV
Dose: 5E14~1E16 (ion/cm^2)

○ System restrictions

1. The wafer tilt angle must be ≤ 60°.
2. Energy (keV) ≦40 keV; ≧5 keV
3. Dose ≦1E16(ion/cm^2); ≧ 5E14(ion/cm^2)
4. Energy (keV) ≦5 keV; Dose ≦ 5E15(ion/cm^2)
5. For wafers smaller than 6 inches, please consult an engineer.