

ION ASSISTED ETCHING: INFLUENCE OF THE ION CHARGE SIGN

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The relative influence of the ions of different signs on the ion-assisted etching of silicon is under investigation. The fluorine radicals are produced by the direct current glow discharge with pressure gradient. The beam of positive or negative ions is produced by PIG source. The flows of radicals and ion beam are met on the surface of the silicon placed in high vacuum. The positive ions can be converted into the fast neutral atoms by method of resonance exchanging in an own gas. It is shown that the fast neutral atoms have the highest stimulating ability. The catalytic influence of the positive ions is in two times less. The negative ions have the intermediate parameters. It is found that some kinds of ions (for example, molecular oxygen) decelerate the etching that is they behave itself like an inhibitor.