

High-rate etching of GaAs using chlorine atmospheres doped with a Lewis acid

Gerhard Franz^{a)}

Siemens Research Laboratories, D-81370 Munich, Germany

(Received 25 September 1997; accepted 9 March 1998)

The etching behavior of GaAs versus BCl_3/Cl_2 is analyzed in a capacitively coupled plasma and a plasma excited by electron cyclotron resonance using optical emission spectroscopy (OES). For both types of discharges, the etch rate of the semiconductor can be parametrized by using the OES signal which is corrected by actinometry. Exhibiting open surfaces between 10 and 17 cm^2 , high-rate etching in both types of discharges is combined with very steep sidewalls and excellent radial uniformity. © 1998 American Vacuum Society. [S0734-2101(98)58503-X]