GV-01
www.oxfordplasma.de/process/gaas_qmi.htm

OXFORD INSTRUMENTS

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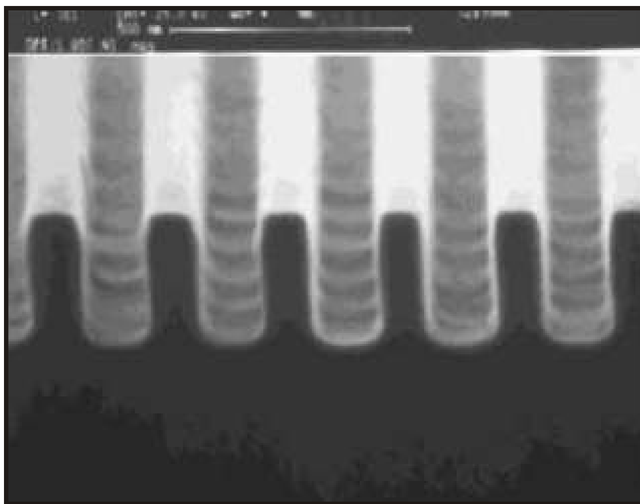
Plasmalab Data

RIE of GaAs based grating structures for optoelectronic applications



GaAs based 220 nm pitch gratings formed by RIE using a photoresist mask (removed) (OPT Applications Laboratory).

Process Technology:

Reactive Ion Etch
Single wafer or batch loading
$SiCl_4$ based chemistry for profile control and excellent mask selectivity

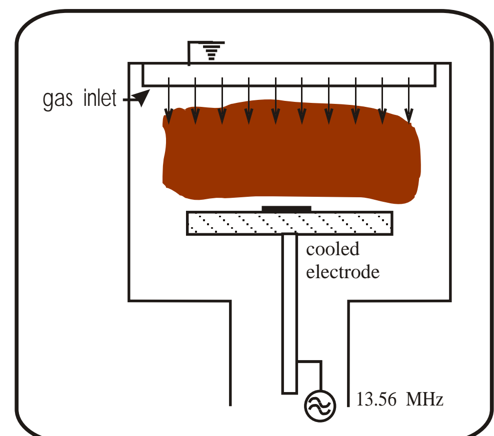
Typical Results:

Etch rate: 10 - 200 nm/min
Uniformity: <± 3% (2" wafer)
Selectivity: > 10:1
Profile control: Vertical
Smooth etched sidewalls for minimum scattering loss

Plasmalab 80 Plus

Plasmalab System 100

Plasmalab System 133



KEY PROCESS FEATURES

$SiCl_4$
Adresses the need to form volatile etch by-products for efficient low damage etch

Broad process controll range
wide process window for reproducible processing as well as versatility for other materials such as AlGaAs

In-situ chamber cleaning
High efficiency chamber dry etch back developed to minimse downtime

Low damage process
Smooth etched features minimise device scattering losses

Profile control
Sidewall passivating chemistry provides precise profile control