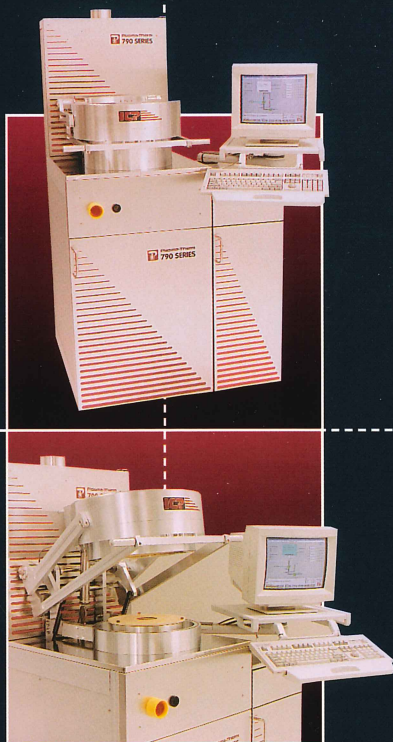


Plasma-Therm

790 SERIES



Plasma
Deposition &
Etching Systems
for Research
& Development

The Premier Research & Development System

HIGH TECHNOLOGY ON A SIMPLE PLATFORM

The 790 series platform offers the ultimate machine for thin film research and development. Advanced reactor technologies, such as inductively coupled plasma, ICP, and plasma enhanced chemical vapor deposition, PECVD, are available as standard products. Manual loading offers the flexibility to handle a variety of substrate sizes, shapes, and thicknesses. As a result of this wide range of options, 790 systems are routinely used in all major areas of academic and commercial research and development.

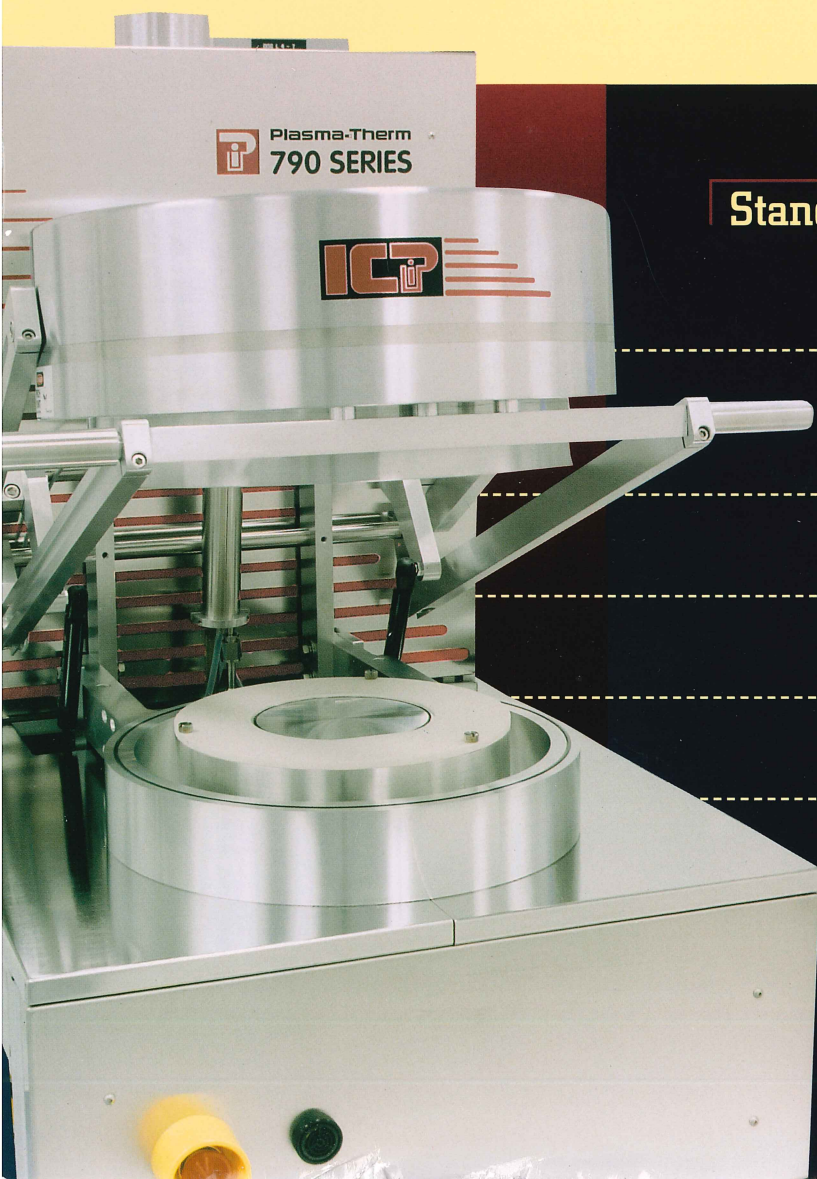
790 SYSTEMS ARE SIMPLE TO USE

Ease of use is central in the design of 790 systems. The control system utilizes software developed for Microsoft Windows, providing graphic displays of key parameters, system alarms, and process recipes. Additionally, the units offer a modular design located in a small area, ensuring easy access for maintenance activities. As a result, the 790 has been proven to be highly reliable in all field applications.

THE NEXT STEP IS EASY

Since the 790 series systems utilize the same process chambers as those on

the Shuttlelock® and Versalock® platforms, process transfer to a more automated processing system is direct and easy. No shortcuts are taken on the 790 series modules, with the same best of breed components, high quality workmanship, and exacting engineering standards used in a number of areas on all Plasma-Therm platforms. As a result, customers that develop processes on the 790 platform find that transferring a process to production occurs seamlessly and smoothly.



Standard Features. Extraordinary Benefits

Modular Design for Process Transferability and Ease of Maintenance

Single or Dual Chamber Processing Capability for Flexibility in Processing

Batch or Single Substrate Processing Adds Capacity

Windows Software Ensures Ease of Operation

Non-Standard Substrate Processing Provides Versatility

Small Footprint Minimizes CleanRoom Costs

The Possibilities are Endless...

These features are available on both the single and dual chamber platforms:

INDUCTIVELY COUPLED PLASMA (ICP)

This high density plasma module offers independent control of the plasma generation power and the wafer bias. As a result, high etch rates are available at low wafer bias. This offers the researcher significant process flexibility and a wide variety of options when designing new processes or extending existing ones.

PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION (PECVD)

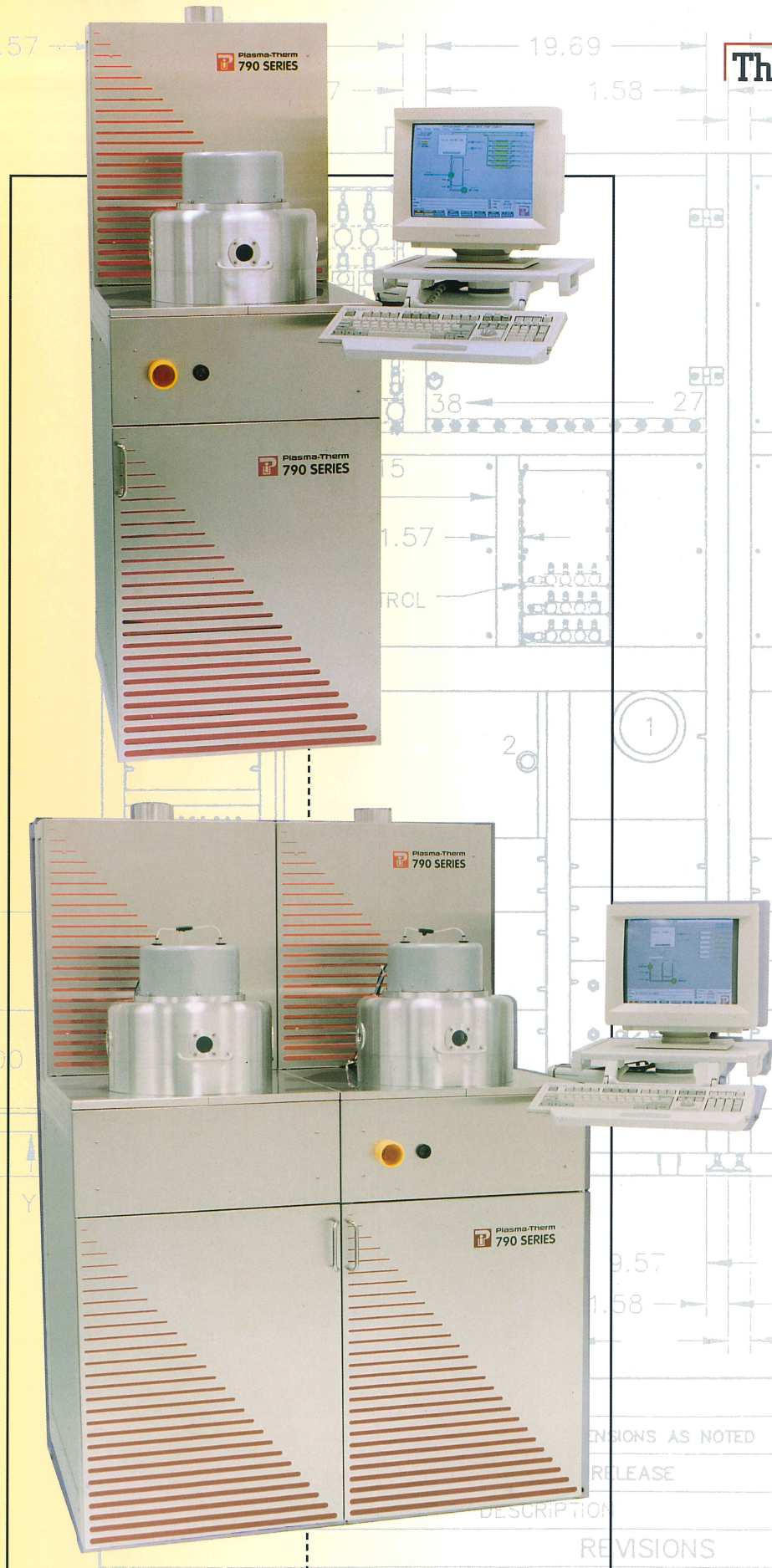
Through application of power at the top electrode and heating the lower electrode, a wide variety of insulator and carbon containing films can be deposited. Stress control, a wide variety of thicknesses, and overall film quality are easily controlled through variation of process chemistry.

REACTIVE ION ETCH/ PLASMA ETCH (RIE/PE)

This switchable configuration offers the researcher the ability to run either reactive ion etch or plasma etch processes on the same system.

REACTIVE ION ETCH (RIE)

This proven reactor is based upon previous Plasma-Therm Series 70 and 700 etch systems. RIE systems have been used in thin film processing for decades and offer the scientist a well understood, fully characterized plasma system. Applications of this technology continue to expand into new areas and are often applied in research activities.



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The Applications are Endless...

790 series products can be applied to an infinite number of development programs, research activities, and low volume applications. The following list is only a partial list of the processes that have been run on these systems. With all of the options available on this platform, the list is constantly growing.

GENERAL RESEARCH & DEVELOPMENT

790 systems are the ideal R&D tool, since they provide significant options for examination of a wide variety of processes. Advanced processing capabilities are available on the simple, stand alone platform.

Additionally, the flexible Windows software, through investigation of large numbers of thin film processes, are available now and in the future.

OPTOELECTRONICS/ TELECOMMUNICATIONS

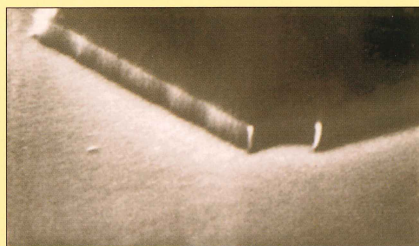
The list of processes for this served market is endless and includes:

- > GaAs Gate Recess Etching and Mesa Definition
- > GaAs and InP Via Etching
- > Typical HBT Materials, such as InGaAs/InAlAs
- > Graded Refractive Index AlGaAs Waveguides
- > SAW Device Etching
- > Silicon Nitride and Silicon Dioxide Depositions
- > Polyimide Etching
- > Quartz Etching
- > InP Via Etching

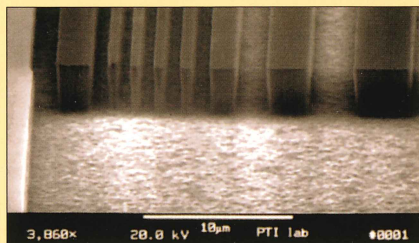
MICROELECTROMECHANICAL (MEMS) DEVICES

A complete array of development processes can be investigated, including:

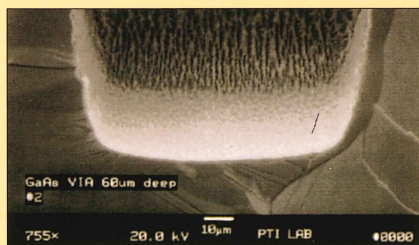
- > Zero Stress CVD Films for Membrane Applications
- > Etch: Deep Quartz, Polysilicon, Polyimide
- > Low Temperature PECVD Processes for SiO_2 and Si_3N_4



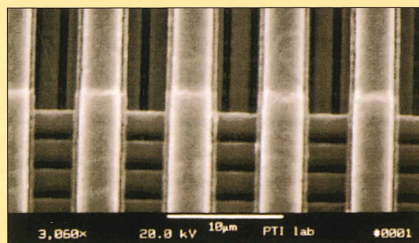
InP Feature Etch



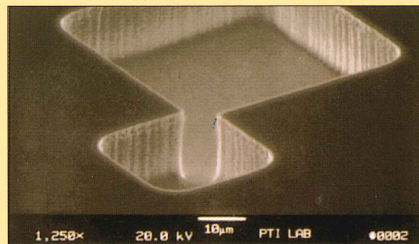
Polyimide Etch



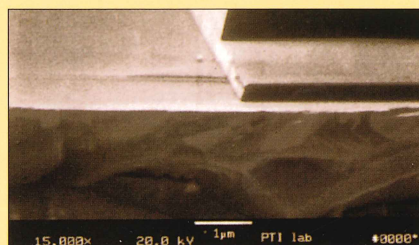
GaAs Via Hole



Passivation and Interlayer Dielectrics removed for failure analysis



GaAs Feature Etch



Anisotropic SiO_2



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