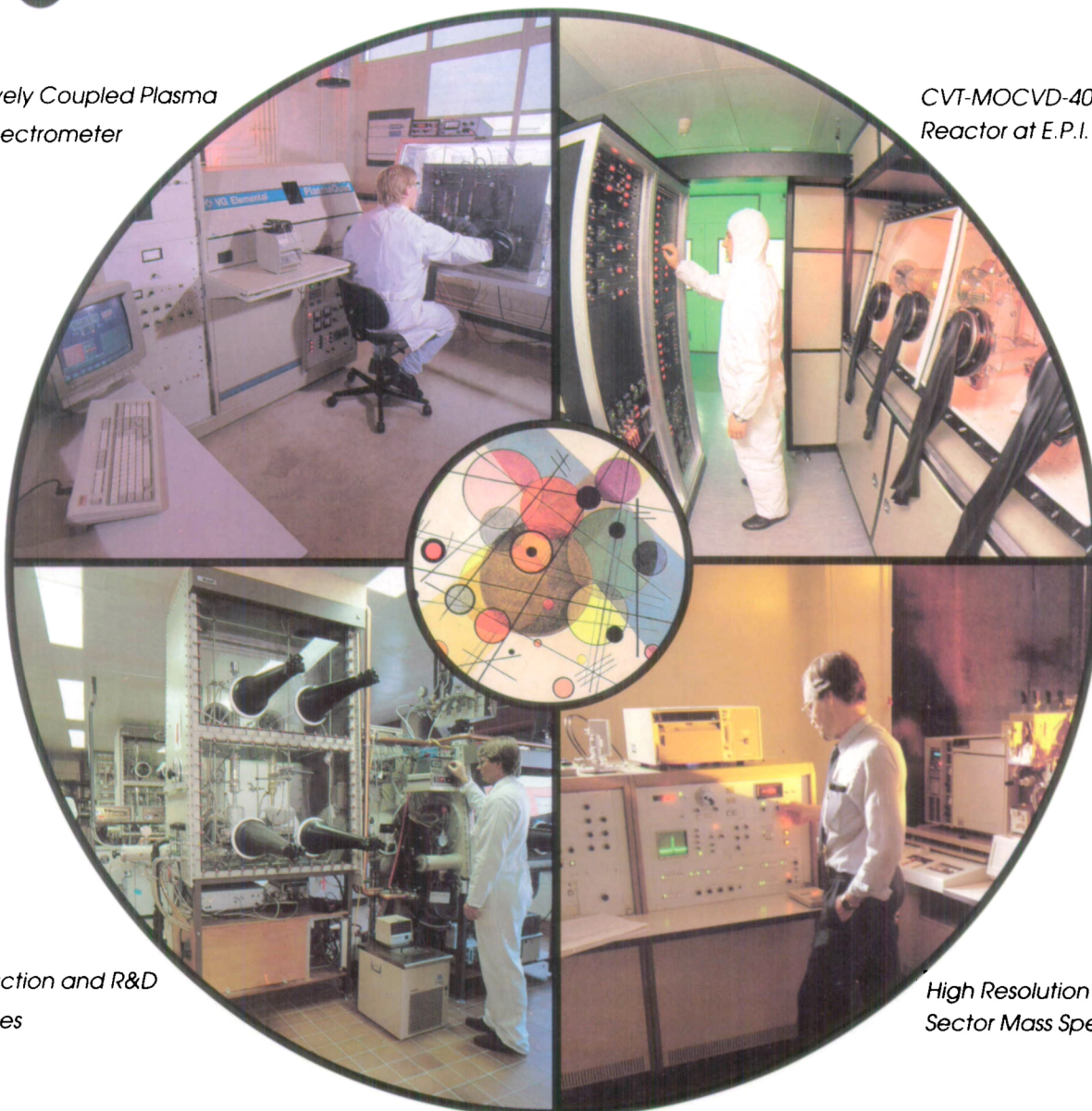


# Organometallics for Electronics

Inductively Coupled Plasma  
Mass Spectrometer

CVT-MOCVD-4000  
Reactor at E.P.I.



Production and R&D  
facilities

High Resolution Magnetic  
Sector Mass Spectrometer

Organometallics produced and analysed by Billiton Precursors B.V.\* are tested by Epitaxial Products International Ltd. and other institutions ensuring products of consistent high performance. Certificates of Analysis and Performance are supplied with each batch.

## Typical Precursor Performance

Precursor	Epitaxial layer grown	Temp. °C	Pressure, mbar	V/III	n(300K)	μ(300K)	μ(77K)
TMGa	GaAs	650	100	110	7e13(C-V)	8900	155,000
TMIIn	InP	650	200	270	3e14(C-V)	4600	120,000
TMAI*	Al <sub>0.25</sub> Ga <sub>0.75</sub> As	760	950	50	2e15(Hall)	3200	6,500

\* FWHM (5K) of Bound Exciton: (Al<sub>0.10</sub>Ga<sub>0.90</sub>As) 4.0 meV; (Al<sub>0.25</sub>Ga<sub>0.75</sub>As) 4.5 meV



## Billiton Precursors B.V.

Billiton Precursors B.V.\*, Dr R.G. Lythe, P.O. Box 639,  
(Westervoortsedijk 67d), 6800 AP Arnhem, **The Netherlands**.  
Tel (Int'l) 31-85-654882. Fax (Int'l) 31-85-654664. Telex 75026 bires nl

Billiton Metals Japan K.K.\*, Mr H. Neriishi, Kasumigaseki Bldg 29f,  
2-5, Kasumigaseki 3-chome, Chiyoda-Ku, Tokyo 100, **Japan**.  
Tel (Int'l) 81-3-581-6303. Fax (Int'l) 81-3-592-0903. Telex j22373, j22901.

\* A company of the Royal Dutch/Shell Group of Companies

Circle No. 2 on Reader Service Card.

# IN R&D, THE FUTURE BELONGS TO THE FLEXIBLE

**F**or as much as superconductivity is changing the future, there will also be changes in the projects you're working on.

That means the equipment you buy today should be designed to help you — not limit you — in the future. If you decide on UHV's Model 6000 modular approach to deposition and sample processing, you can stay flexible enough to handle changes as they occur in super-conducting, semiconducting, optical, diamond or any other rapidly developing area of materials research and development.

A UHV system begins with the basics, a standardized ultra-clean, ultra-low pressure  $5 \times 10^{-11}$  Torr vacuum chamber (five sizes), pumps, vacuum gauges, gas controls, electrical distribution system, and a versatile sample manipulation stage.

To this, you can add (now or later) any one of dozens of options, including RF-DC sputtering, evaporation, MBE, ECR, ion sputtering or others, to create a unique R&D tool.

Write or call for UHV's complete 1991 catalog and price list. Let UHV help you stay flexible for the future, at an affordable price.



**Ultra High Vacuum Instruments Inc.**  
Office Box 12, 1951 Hamburg Turnpike  
Buffalo, N.Y. 14218 (716) 833-7534

**BUILDING EQUIPMENT FOR THE WORLD'S LEADING SCIENTISTS AND ENGINEERS**