

MBE system

RC1100



MBE system (RC1100) supplied to Hokkaido University

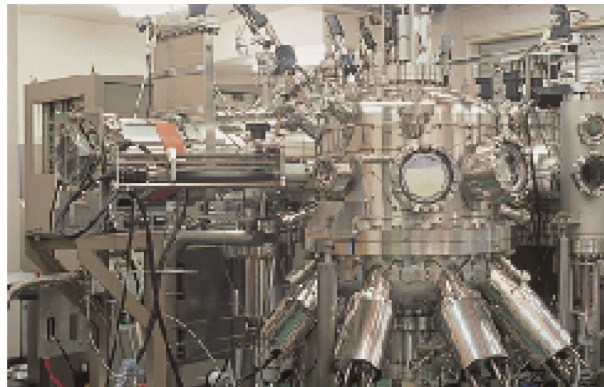
Features

RC1100 Series is a low-cost, space-saving and high performance MBE system for research purpose. For all its compact-size, it is adequate for full-fledged research. The combined use with an analyzer like STM system provides a way for the development of new materials.

Specifications

- Substrate size : 1 × φ1"
- K-Cell ports : 6 × ICF114

RC2100/RC3100



MBE system (RC2100) supplied to Sophia University

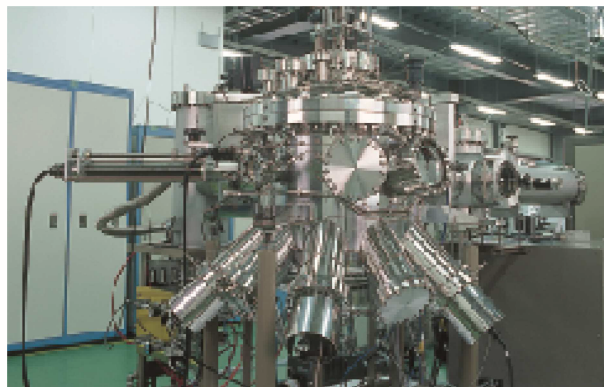
Features

RC2100/RC3100 Series is an MBE system optimum for higher level of research and semi-production. This system supports the use of a variety of materials such as Nitride, ZnO.

Specifications

- Substrate size : 1 × φ2" (RC2100)
1 × φ3" (RC3100)
- K-Cell ports : 8 × ICF114 (RC2100)
8 × ICF152 (RC3100)

RC6100



MBE system (RC6100) supplied to National Institute of Advanced Industrial Science and Technology

Features

The K-Cell-substrate arrangement designed by the most advanced molecular beam simulation technology achieves extremely uniform crystal growth on a large-area substrate.

Specifications

- Substrate size : 1 × φ6"
- K-Cell ports : 10 × ICF152

MBE System Specifications

Model		RC1100	RC2100/RC3100	RC6100	
Growth Chamber	Ultimate Pressure (Pa)	<1.33×10 ⁻⁸	<1.33×10 ⁻⁸	<1.33×10 ⁻⁸	
	Substrate (wafer) size	1 × φ1"	1 × φ2" / 1 × φ3"	1 × φ6"	
	Substrate temperature (T. C. Value for control)	Standard	900°C	900°C	900°C
		Optional	1200°C	1200°C	1200°C
	K-Cell ports	6 × ICF114	8 × ICF114 / 8 × ICF152	10 × ICF152	
	Beam flux monitor	Standard	Standard	Standard	
	Ion Pump	270I/sec	500I/sec	500I/sec	
	Turbo Molecular Pump	Optional	Optional	Optional	
	Cryo Pump	Not Available	Optional	Optional	
RHEED (30keV)	Standard	Standard	Standard		
RHEED screen size	ICF152	ICF152/ICF203	ICF203		
Transfer Chamber (with Transfer Rod)	Ultimate Pressure (Pa)	<1.33×10 ⁻⁷	<1.33×10 ⁻⁷	<1.33×10 ⁻⁷	
	Combination Pump	150I/sec	150I/sec	150I/sec	
	Transfer system	Transfer Rod	Transfer Rod	Transfer Rod	
	Rail transfer system	Optional	Optional	Optional	
Transfer Chamber (with arm transfer system)	Ultimate Pressure (Pa)	<1.33×10 ⁻⁷	<1.33×10 ⁻⁷	<1.33×10 ⁻⁷	
	Combination Pump	300I/sec	300I/sec	300I/sec	
	Transfer system	Arm transfer system	Arm transfer system	Arm transfer system	
Load lock Chamber	Extension ports (amount × size)	2 × ICF152	2 × ICF152	2 × ICF203	
	Ultimate Pressure (Pa)	<1.33×10 ⁻⁵	<1.33×10 ⁻⁵	<1.33×10 ⁻⁵	
	Turbo Molecular Pump	300I/sec	300I/sec	300I/sec	
	Pre-heating system (Max500°C)	Standard	Standard	Standard	
	Substrate stock stage (for up to 4 holders)	Standard	Standard	Standard	
Control system	Transfer system (Unnecessary in case of arm transfer system)	Transfer Rod or Rail transfer system	Transfer Rod or Rail transfer system	Transfer Rod or Rail transfer system	
	Operation panel	Standard	Standard	Standard	
Others	Alarm system	Standard	Standard	Standard	
	Inter lock system	Standard	Standard	Standard	
	Automatic Growth system (for shutter)	Optional	Optional	Optional	
	Automatic Growth system (for temperature)	Optional	Optional	Optional	
Residual Gas Analyzers	Optional	Optional	Optional		

High temperature vacuum baking system



Features

We are ready to offer design and manufacture of high-temperature vacuum baking system to meet various types of applications.

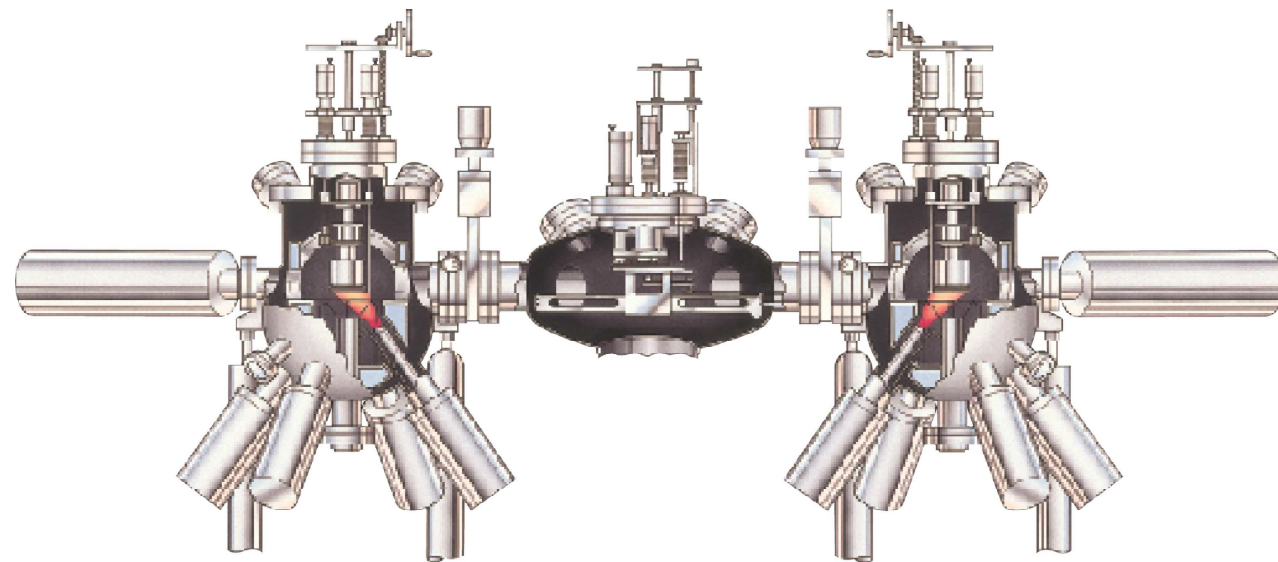
Specifications

- Maximum heating : from 1000°C up to 2000°C temperature
- Ultimate pressure : <1.33×10⁻⁴Pa (using TMP)

MBE system

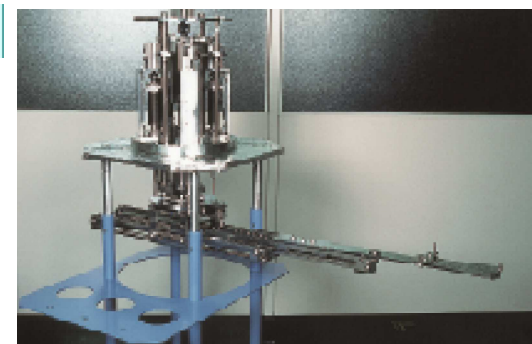
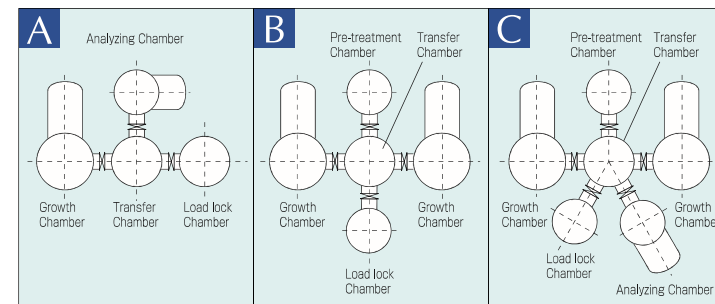
Extension for Multi-Chamber

An ultra high vacuum transfer chamber incorporating a three-step extendable arm transfer system is equipped at the center. Connected around the transfer chamber are multiple independent growth chambers, which constitute a consistent ultra high vacuum system. The system allows the growth of hetero materials, and analysis and evaluation in ultra high vacuum.

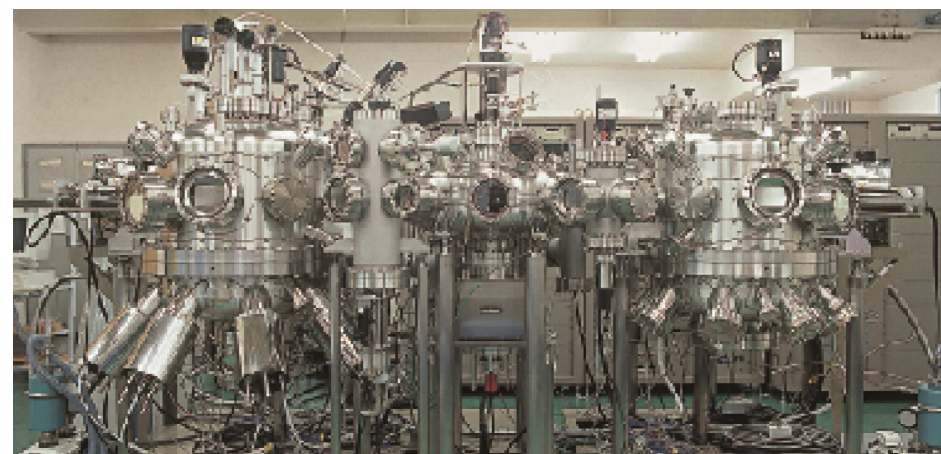


Extension for Multi-Chamber

The use of the arm transfer system enables the upgrade of the system to the multi-chamber of a satellite configuration, thereby contributing to the space-saving and enhanced extensibility.



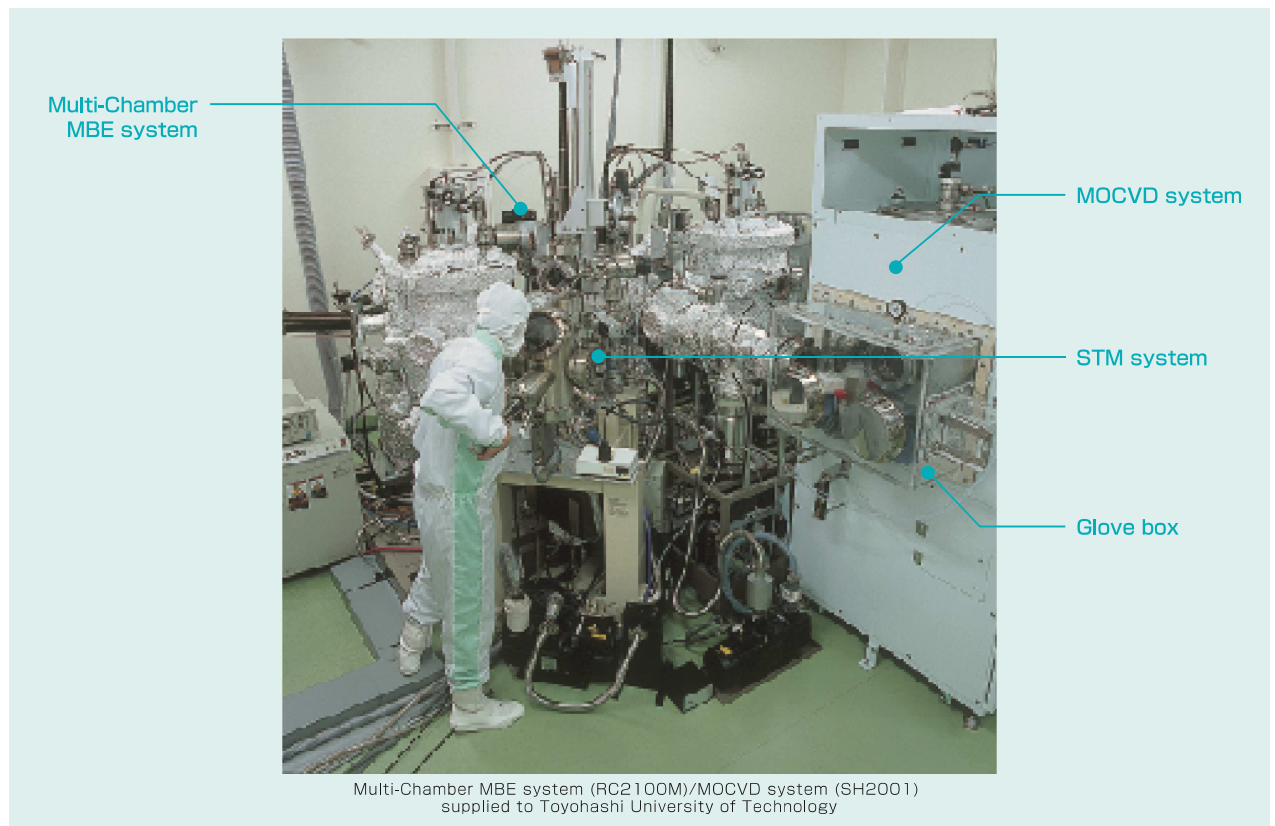
This arm transfer system for ultrahigh vacuum is based on the EpiQuest's know-how accumulated for years. It has three-step arm, which can rotate, expand and contract in an ultrahigh vacuum, and convey samples in every direction (360-degrees). The system has been adopted in commercial production facilities and it has also been proven in a number of research laboratories.



Multi-chamber MBE system for GaN, supplied to Sophia University

Combined system of multi-chamber MBE (RC2100M) plus MOCVD (SH2001)

In this system, an MBE system for Si MBE growth and a compound semiconductor MBE system are connected by means of the transfer chamber that incorporates rotation, expansion and contraction arm transfer system, and further, they are connected to the compound semiconductor MOCVD system by means of a vacuum lorry. This configuration enables growth of different types of materials that uses both MBE and MOCVD systems without exposing the materials to the atmospheric air. In addition, an STM chamber is also connected to the transfer chamber located on the multi-chamber side, and thus we can analyze the surface immediately after the growth.



Multi-Chamber MBE system (RC2100M)/MOCVD system (SH2001) supplied to Toyohashi University of Technology

System layout

