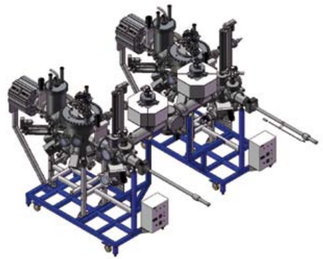
FLEXIBLE COMPACT 21

Research activity becoming more and more complex, Riber offers multi chamber equipment linked with either a manual linear transfer system or with a completely automated cluster tool



Dual Compact 21 with linear transfer system

Multi chamber Compact 21 with automated cluster system

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Centre de Recherche sur l'Hétéroepitaxie et ses Applications – CRHEA/CNRS – Valbonne – France
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Ecole Centrale de Lyon – ECL – Lyon – France
Institut d'Electronique et de Microélectronique de Nord – IEMN/USTL – Villeneuve d'Ascq – France
Laboratoire de Photonique et de Nanostructures – LPN/CNRS – Marcoussis – France
College Nankai University – TEDA Institute – Tianjin – China
Ioffe Physico Technical Institute – St. Petersburg – Russia
Korea Photonics Technology Institute – KOPTI – Korea
EPIR Ltd – Bolingbrook, IL – USA
National Renewable Energy Laboratory, NREL – Washington – USA
Nigth Vision & Electronic Sensors Directorate, NVESD – Fort Belvoir – USA
Weizmann Institute of Science – Rehovot – Israel
Ecole Polytechnique de Lausanne – EPFL – Lausanne – Switzerland
National Central University – Chung-Li, – Taiwan
Universität of Würzburg – Würzburg – Germany
Xian Institute of Applied Optics – Shaanxi Province – China
National Institute for Materials Science – NIMS – Ibaraki – Japan

TECHNOLOGICAL LEADERSHIP

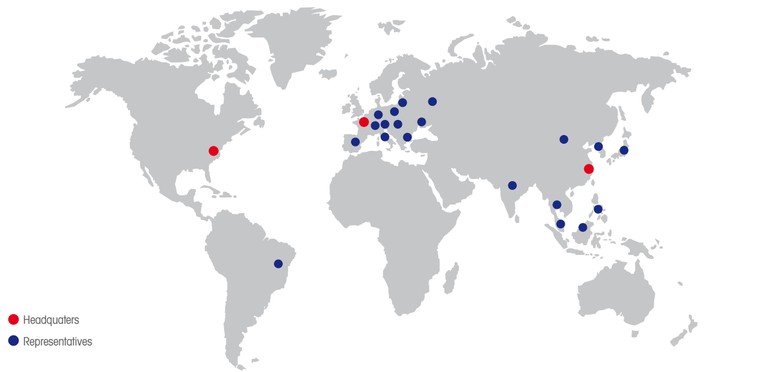
Riber is the world leading supplier of MBE processing equipments and related services.

Our MBE system installed base reaches 750 systems with at least one system in each of the 35 countries involved with MBE wich represents 75% of the market worlwide.

Capitalizing on 30 years of experience, the core philosophy of the company is to design system in close association with customers. Riber invented and designed majors features which are now found in all MBE systems.

Riber plays a key role in the development of MBE technology, providing customers with solutions from equipment to epitaxial growth.

WORLDWIDE PRESENCE



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RIBER

MBE SYSTEMS AND COMPONENTS FOR R&D AND PRODUCTION

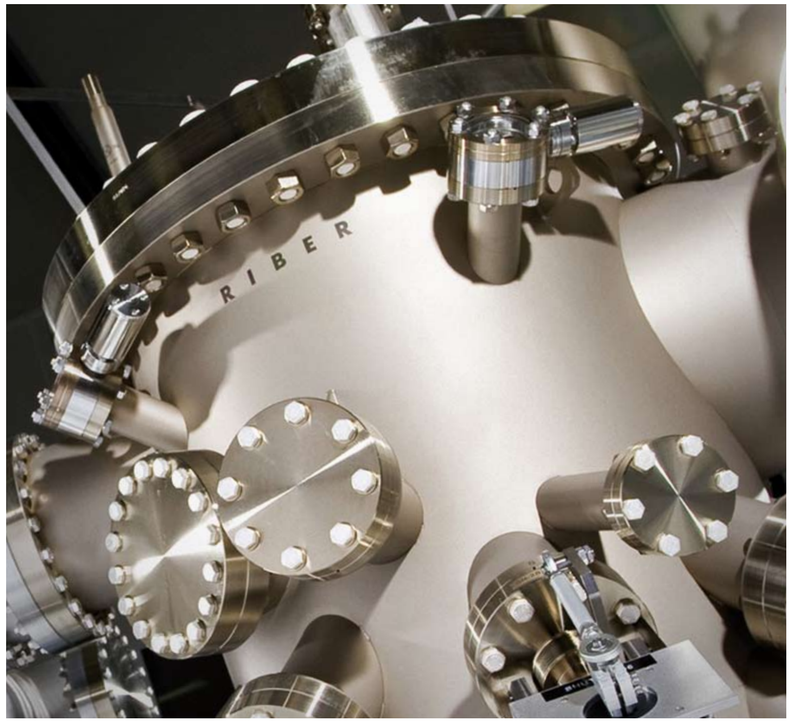
COMPACT 21 SYSTEM

THE WORLD BEST SELLER
THE BEST PERFORMANCE IN THE COMPOUND SEMICONDUCTOR WORLD

ADVANCED MBE SYSTEM FITTING YOUR RESEARCH ACTIVITY
ERGONOMIC AND MODULAR DESIGN
EASY OPERATION AND SMALL FOOTPRINT
HIGH CONFIGURATION FLEXIBILITY

INNOVATIVE SOLUTIONS FOR SEMICONDUCTOR INDUSTRY

RIBER



MARKET LEADING R&D SYSTEM

MBE GLOBAL SOLUTION

Capitalizing on 30 years of experience in UHV, Riber directed its MBE strategy to designing systems in agreement to applications in order to offer the best technical MBE system to achieve rapidly the best performance.
Every technical choice: design, mechanical, thermal, component equipment is conceived and optimized to deliver the best performance at the lowest operating cost.
All MBE systems benefit from established stringent manufacturing procedures. Systems are assembled and conditionned in a perfect cleaned environment to assure purity of the layers.

RIBER MBE Compact 21 research system series is the most flexible machine covering the highest demanding applications; GaAs, InP, GaN, ZnO, MCT, SiGe, …

All Compact 21 are based on the same architecture. A vertical growth chamber, on which wafer is facing down. An optimized cell/wafer evaporation geometry to reach a high level of performance for thickness, composition and doping uniformities. An efficient pumping assembly located directly in line with the growth chamber, and a wafer handling system used for the introduction or removal from the growth chamber of one 1x3'', 1x2'' platen with fast automated vacuum pumping and venting.

Our extensive experience allows Riber to offer the best research system design fulfilling your stringent requirements depending on your research project. Compact 21 Systems can also be customized following your request.

Compact 21 GaAs / InSb

Our reference

- Dedicated pumping configuration
- Arsenic and/or Antimony cracker cells
- Precise control of the deposited layers
- High purity of the deposited layers
- Excellent uniformity profiles
- Reliability allowing complex structure growth
- Up to eleven source ports

Applications: QCL, Quantum dots, VCSELs, laser …

Compact 21 InP

Adapted to Phosphorus based application

- Patented Phosphorus cracker cell (3 zones)
- Efficient and safe dedicated pumping configuration
- Excellent uniformity profiles
- High reliability allowing complex structure growths
- Rugged and proven P recovery procedure

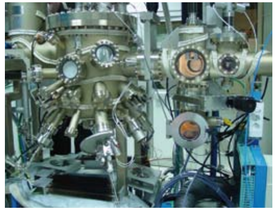
Applications: HBT, Photodiode, Laser Diodes …

Compact 21 GaN

Full range of Riber Nitride dedicated components

- Process and technical support from GaN -PTC
- N_2 RF plasma source and/ or Ammonia source
- High temperature substrate heater up to 1100°C
- High temperature outgassing station
- Dedicated Aluminium and Gallium MBE effusion source
- Reflectivity viewports
- Efficient and rapid ammonia regeneration procedure

Applications: HEMT, FET, LED, Laser …



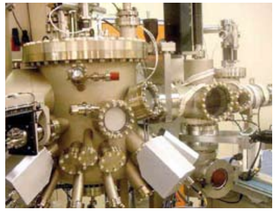
COMPACT 21 SERIES

Compact 21 MCT

20 years of successful MCT experience

- Mercury dedicated growth chamber design
- Excellent Mercury flux stability with MCL or VHG sources
- Mercury dedicated pumping configuration
- Mercury handling system & proven recovery procedure
- High temperature outgassing station
- Process support
- Excellent low substrate temperature stability and uniformity

Applications: IR detectors …



Compact 21 EB

Next generation of research activity

- High capacity multipocket Ebeam evaporator units combined with up to 10 effusion ports
- Dedicated high temperature effusion cells
- High stability / reproducibility through selective beam detection determined by RGA or/and quartz monitoring
- Process temperature up to 1100°C
- High temperature outgassing station

Applications: SIO, ZnO, Pyrovskite, Spintronics …

Compact 21 HeM - Ultra high Mobility

Dedicated to material science

- Optimized design to provide ultra pure growth condition
- Large cooled cryopanel surfaces
- Specific high purity heaters for cells, substrate manipulator and all accessories
- Reduced degassing process of the heated parts
- Reduced heat dissipation
- Contamination free instrumentation

Applications: Study on low dimension electronic properties