



**RIBER**

**General Presentation**

**February 2020**

**1.** PROFILE

**2.** VALUE PROPOSITIONS

**3.** STRATEGY AND OUTLOOK

**4.** WHY INVEST IN RIBER?

**5.** APPENDIX: 2019 HALF-YEAR EARNINGS



# RIBER, a global market leader for semiconductor industry equipment

- **Specialist in MBE machines and evaporators for manufacturing semiconductors**
- **Recognized technological leader**
  - Numerous key innovations in MBE
  - Partnerships with universities and industrial firms: development of new applications
- **Global presence**
  - Europe, Americas (USA, Canada, Mexico), Southeast Asia (Japan, China, South Korea, etc.)
  - Largest total installed base of MBE machines in operation
- **Efficient industrial facilities**
  - 3,500 sq.m plant in Bezons (France), with a 1,000 sq.m clean room
  - Design and assembly of machines & components
  - Parts outsourcing and procurement

**RIBER**

- **40 years of experience**
- **More than 730 machines installed in operation**
- **More than 50% MBE market share**
- **More than 90% of revenues generated abroad**
- **120 employees at end of June 2019**



## What is MBE?

### **epitaxy**

Ultrahigh vacuum process to grow a material or crystal in successive layers of atoms

+

### **molecular beam**

Production of a beam of molecules from a source material to create ultra-thin films, up to 1 atom thick

=

**A technology  
that offers the best quality for  
semiconductor alloys**



## Main industrial field of application

### High-frequency electronics

- Terrestrial telecommunications (5G, 4G, wifi)
- Satellites (transmitting-receiving antennae)
- Smartphones, tablets, etc.

### Sensors

- Night vision
- Magnetism
- Infrared, UV (thermography, medical, vegetation mapping)

### Optoelectronics

- Terrestrial (FTTH, LAN) and submarine (long-haul) fiber optic networks
- Laser cutting
- Laser passivation
- LIDAR

### Thin film

- CIGS alloy photovoltaic cells: electrical energy production
- OLED TV, tablet and smartphone screens
- OLED lighting and signals

# Global base of leading clients

## Research

Universities or research centers covering semiconductors and/or electronics (MBE)

**320 customers**  
in 38 countries



**Around 620**  
**MBE**  
**machines in**  
**operation**

## Production

Electronic component manufacturers (MBE)

**42 customers**  
in 10 countries



**Around 110**  
**MBE**  
**machines in**  
**operation**

Thin film deposition manufacturers (evaporators)  
**9 customers in 4 countries**

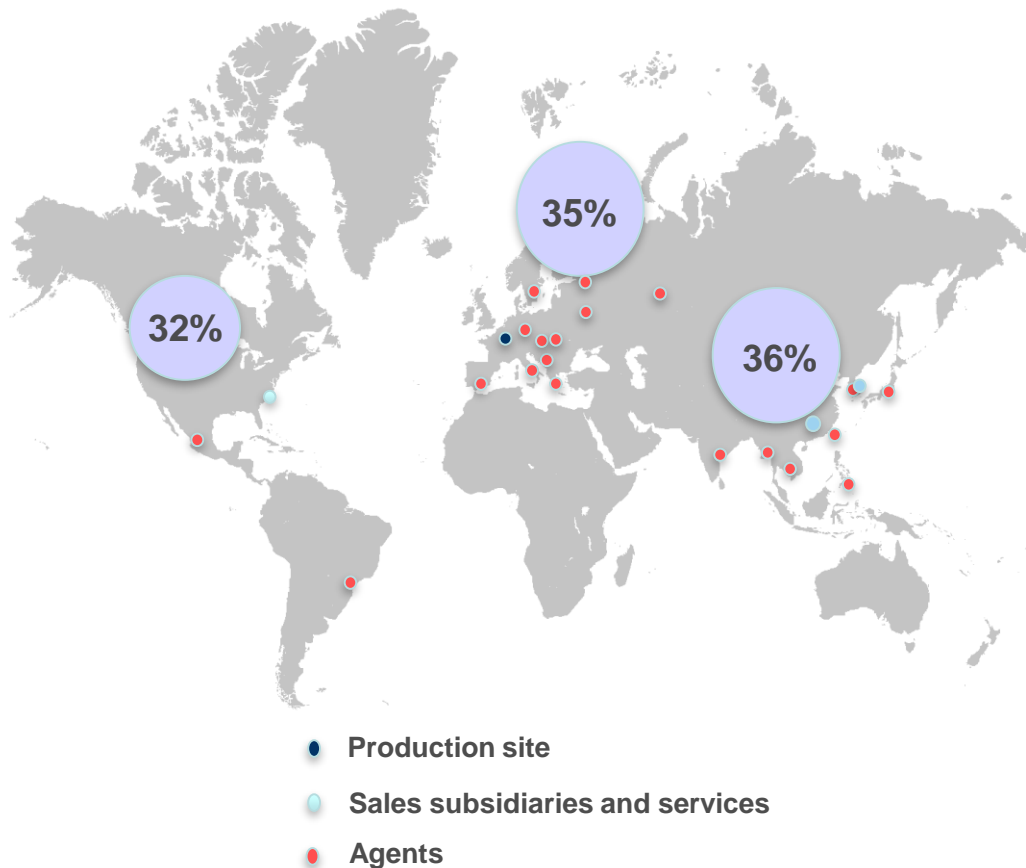


**Over 1,000**  
**evaporators in**  
**operation**

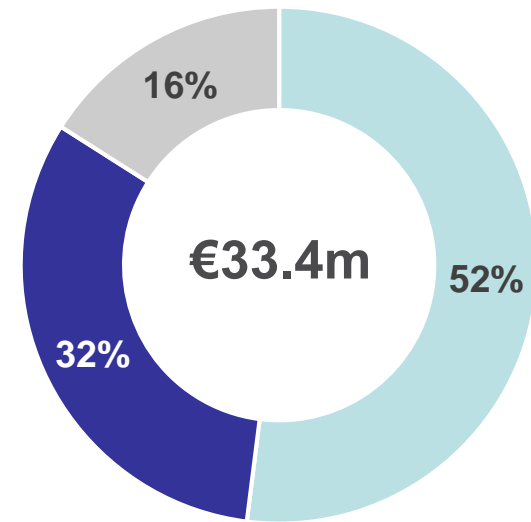


# A balanced geographic location

## ■ Breakdown of Riber's installed MBE machines



## ■ Breakdown of 2019 sales by region



- Asia
- Europe
- North America

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## Client needs

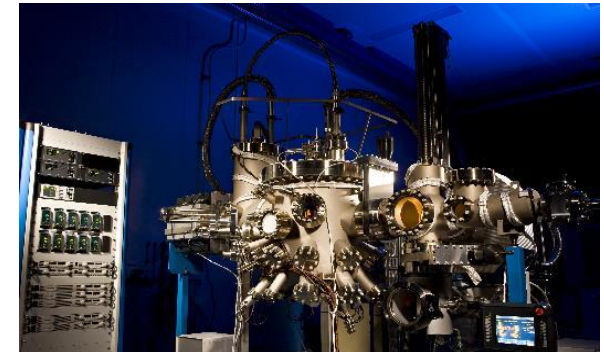
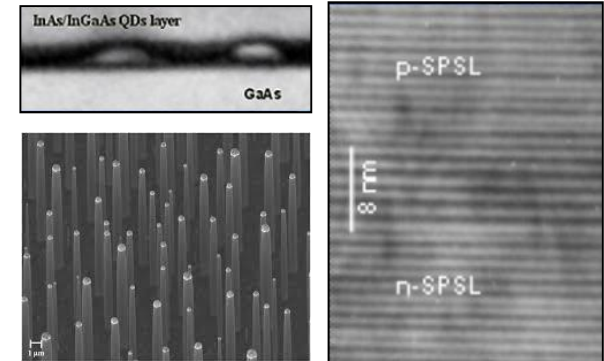
- Growth of semiconductor alloy crystals with MBE: AsGa, InP, GaN, InSb, ZnSe, CMT, oxides, metals
- Acquisition of an MBE machine: technical specifications and process (types of alloys)

## Riber's solutions

- Market's widest range of solutions for processes (types of alloys) and numbers of sources
- Compact12, Compact21T, Compact21DZ, Compact21EB, MBE412, MPVD300

## Stable market

- Estimated at 10-15 purchases / year
- Competitors: Veeco (USA), Omicron (DE), MBE Komponenten (DE), DCA (FN), Eiko (JP)
- Riber's market share in H1 2019: 50%



### Riber's distribution

- Global : 38 countries
- Subsidiaries (USA, KR, CN), distributors (JP) or agents (other)

## Client needs

- Manufacturing of semiconductor alloy epitaxy wafers with MBE: AsGa, InP, ZnSe, CMT, etc.
- Acquisition of MBE machines for mass production of components based on specifications: wafer, production output, yield, cost of ownership, services and maintenance

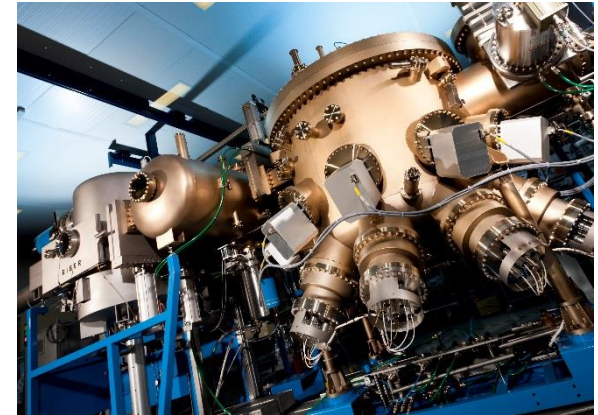
## Riber's solutions

- Market's largest range for treatment capacity and processes

Microwaves and Optoelectronics	Optoelectronics and sensors	Laser passivation
MBE6000 (4x6") MBE8000 (8x6")	MBE49 (4x4")	MBE412 P

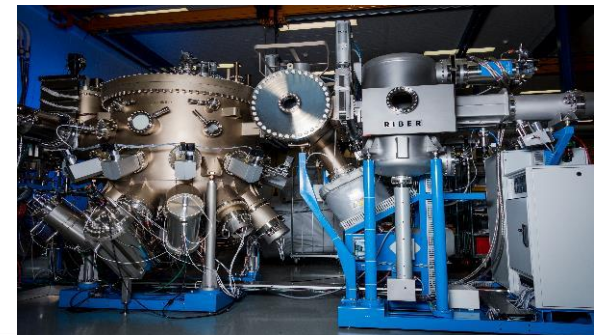
## Cyclical market

- Estimated at 3 -6 purchases / year, depending on investment cycles
- Competitors: Veeco (USA)
- Riber's market share in H1 2019: 75%



### Riber's distribution

- Global :10 countries
- Subsidiaries (USA, KR, CN), distributors (JP) or agents (other)



## Client needs

- Manufacturing of machines for depositing thin films of chemical elements
- Acquisition of industrial evaporators for large areas (x sq.m) adapted for their machine : deposit specifications, production output, yield, cost of ownership, services and maintenance

## Riber's solutions

- Point evaporators - defined by the evaporation time: SH100, SH500
- Linear evaporators - defined by the width of substrate plates: JETSE, JETX

## Growing market

- Estimated at several thousand point evaporators / year, depending on investment cycles in OLED, and penetration of new applications
- Competitors: 2 Asian companies
- Riber's market share in H1 2019: n.a.



### Riber's distribution

- Europe, Asia
- Subsidiaries (KR, CN), distributors (JP) or agents (other)



## Client needs

- Technical and scientific support
- Improvement of performance levels (components) and ergonomics (automation and software)
- Fitting of new components or replacement of obsolete components
- Preventative or remedial maintenance operations

## Riber's solutions

- Catalogue of spare parts, accessories and sources
- Retrofit sales and on-site upgrades
- In-factory component repairs
- Preventative or remedial operations at client sites

## Captive and recurrent market

- Around €10-12M / year



### Riber's distribution

- Europe, Asia
- Subsidiaries (KR, CN), distributors (JP) or agents (other)



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## RESEARCH LABORATORIES

- Maintain the market share > 60%
- Further strengthen competitive advantages
- Continue innovations and partnerships with laboratories for new processes

## INDUSTRIAL FIRMS

- Prepare the new MBE markets through demonstrators' supply
- Develop a next-generation linear evaporator for future applications
- Expand the client portfolio and the applications

## SERVICES AND ACCESSORIES

- Increase revenues by 35% within 3 years
- Identify new attractive products through innovation
- Increase the commercial coverage of our clients

**Development supported by the customer satisfaction and the operational excellence**

# Significant R&D efforts: Main projects carried out in 2019

## MBE SYSTEMS

- MBE8000: reactor design for future commercialization
- C21DZ: testing of a new machine for deposition of functional or topological oxide materials
- 3 new effusion cells and 1 plasma cell for MBE49 and MBE6000 production machines

## EVAPORATORS

- Linear medium temperature evaporator to expand the field of applications to other industrial sectors

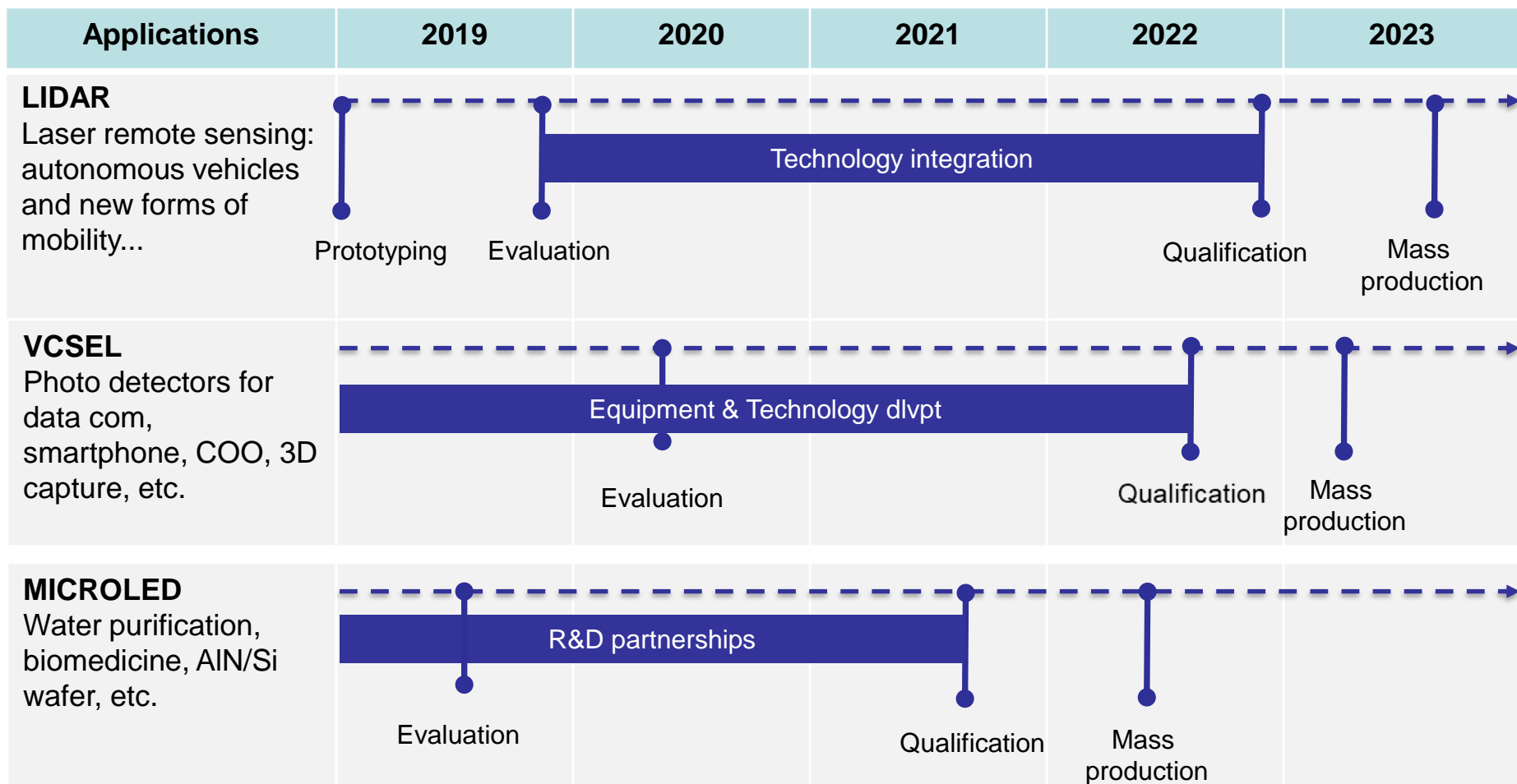
## COLLABORATIVE PROJECTS

- IMEC: antimonide alloys for the production of LIDAR (MBE 49)
- Intelli EPI: VCSEL component for datas com (MBE8000)
- CRHEA: nitride alloys for MicroLEDs (MBE 49 GaN)



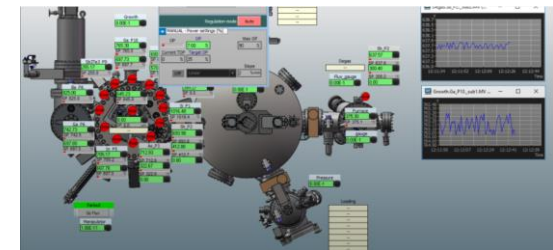
# New markets R&D program for long-term growth

## Examples of new industrial markets

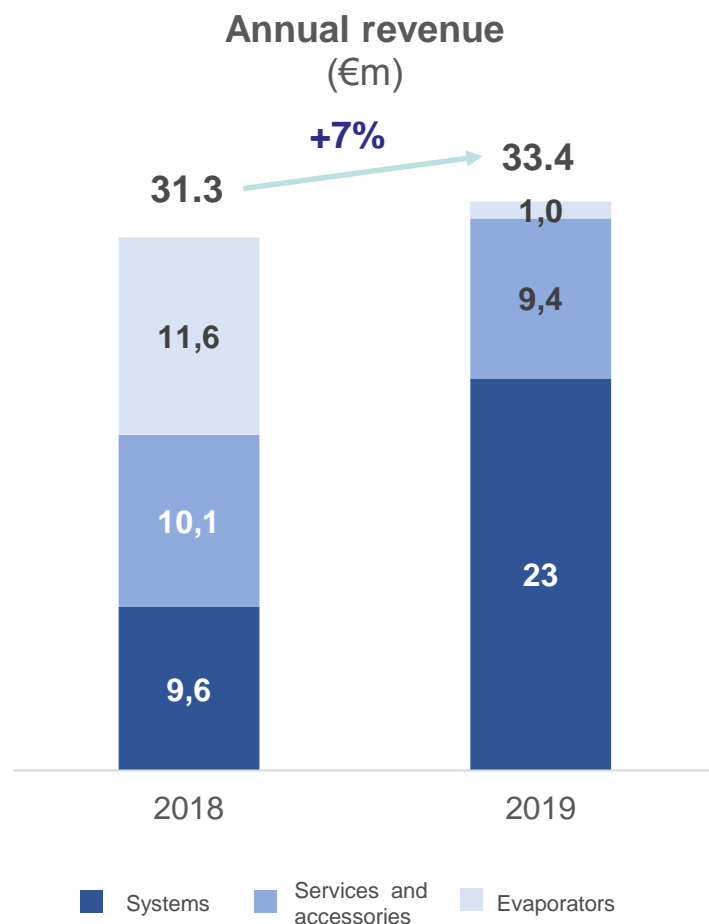


# Dream MBE development: EZ Curve, a new technological component

- **Signing in June 2019 of an operational licensing agreement for a technology developed by the LAAS-CNRS**
- **EZCurve, an innovative in-situ control device for vacuum thin-film deposition**
  - Measurements of curvature and defects on surfaces in real time and over significant production times
  - Multiple benefits: non-invasive, cost-effective, portable, lightweight, easy to install and use.
  - Significant added value for enhancing MBE's processes and performances, both in research and in production.
- **Wide possibilities on the MBE market**
  - Implementation of automated advanced control processes
  - Over the longer term, development of smart MBE systems



# 2019 revenue: MBE business dynamism



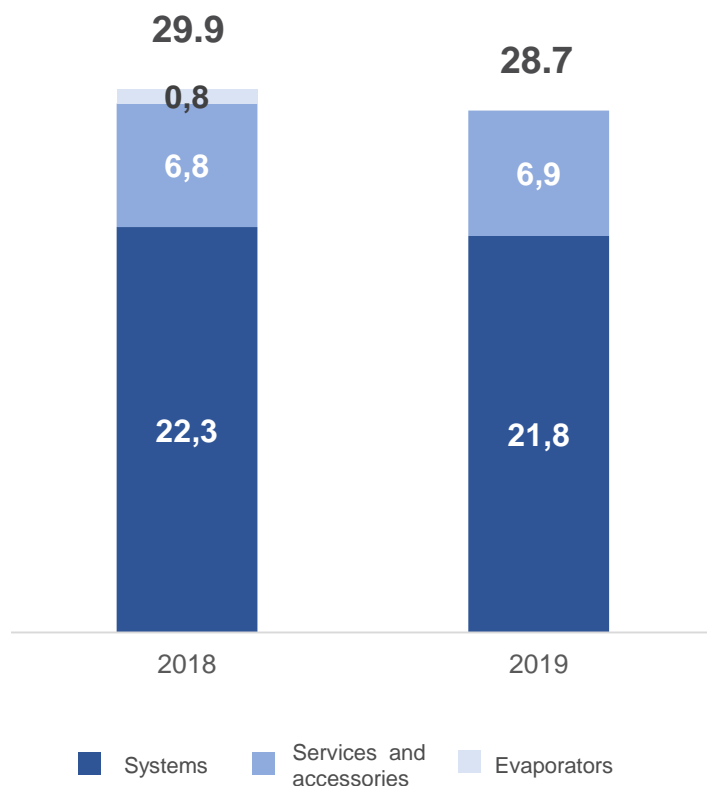
## ■ The MBE business growth offsets the temporary lack of investment in the OLED display industry

- Strong growth in sales for MBE systems: +140%
  - Delivery of 6 systems delivered in 2019, including 7 production units (compared to 6 systems in 2018, including 3 production units)
- Sluggish evaporator sales following the completion of the previous investment cycle in OLED screen production equipment
- Satisfactory level of services and accessories sales, down due to a billing delay over 2020

## ■ Expectations of 2019 income growth compared to 2018

# Favorable outlook for 2020

Order book at December 31  
(€m)



- **Good level of visibility for RIBER's business in 2020 with a solid order book at December 31, 2019**
- **Positive outlook for new orders in a general environment that is favorable for the semiconductor market**
- **RIBER plans to consolidate its revenue in 2020**

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# Why invest in RIBER?

## **R Recognized leadership**

- R** High level of technological requirements: barrier to entry
- R** The information technology end-markets

## **R Positive growth momentum**

- R** Strong opportunities in the short and medium term
- R** Increased value creation potential with new industrial applications
- R** Agile and very responsive organization
- R** Strongly international dimension

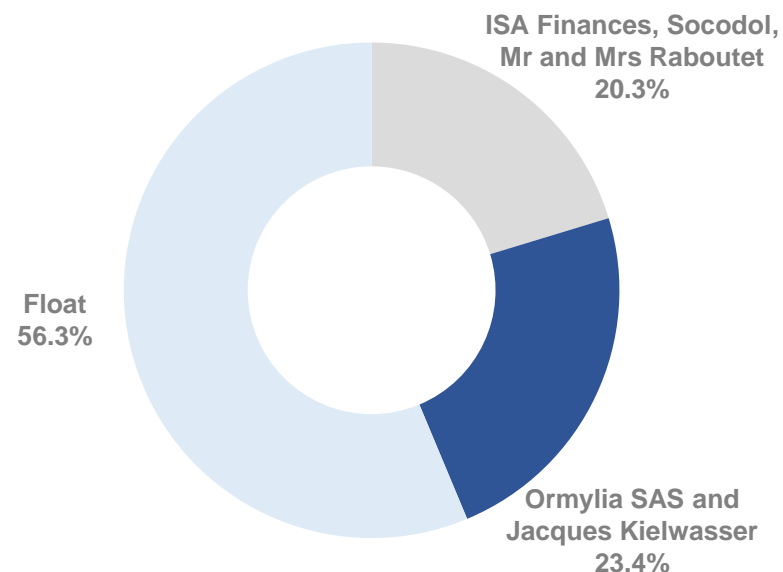
## **R Ambition: enhance the strategic fields for Riber's solutions for the semiconductor industry**



- Listing market:**  
Euronext Paris since 2000
- Indexes:**  
CAC Small, CAC Technology,  
CAC T. HARD. & EQ.
- ISIN:** FR0000075954
- Ticker:** RIB
- Bpifrance approval  
being renewed:**  
FCPI French innovation  
mutual fund status
- Share price:**  
€2.67 (at December 31st, 2019)
- Market capitalization:**  
€57m (at December 31st, 2019)



## Shareholders structure at December 31, 2019





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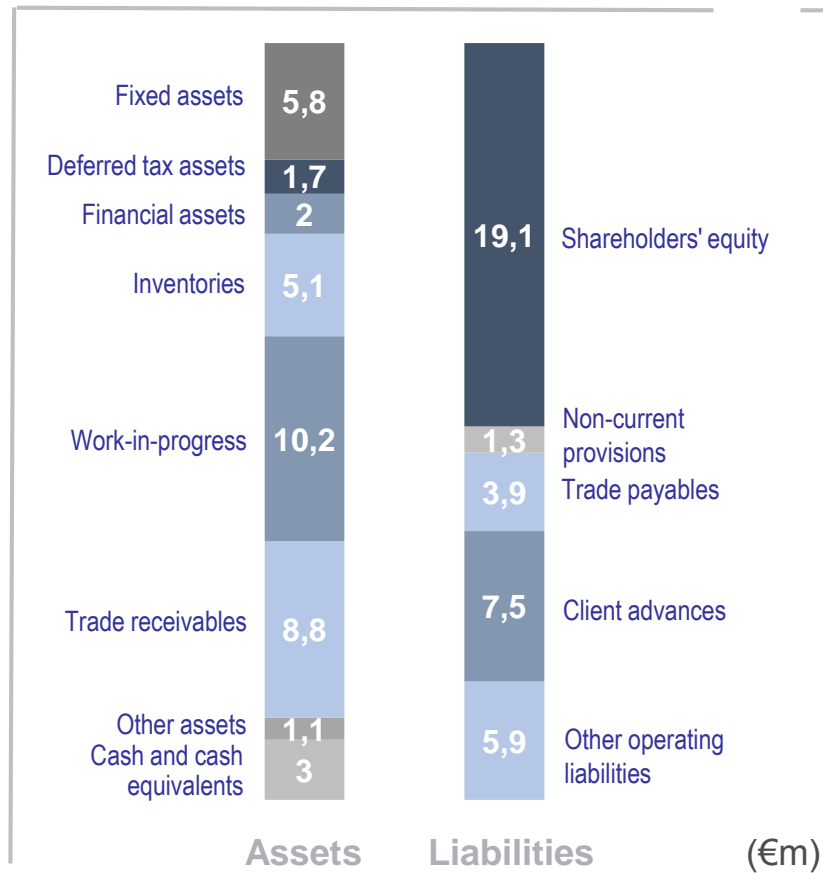
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# Half-year earnings impacted by the changes in product mix

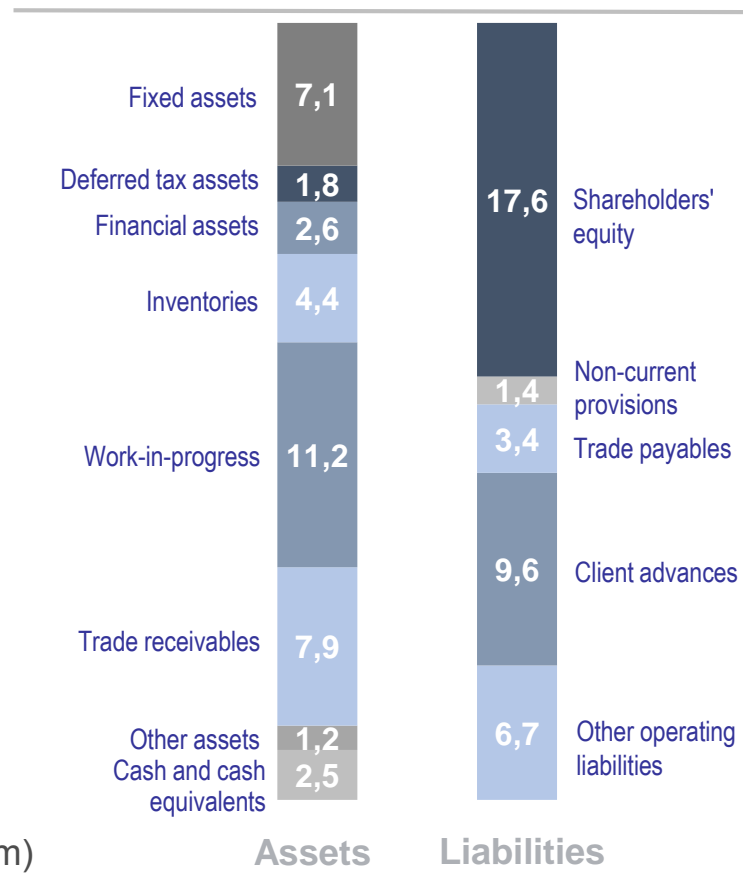
(€m - IFRS)	H1 2019 (6 months)	S1 2018 (6 months)	△	2018 (12 months)	
<b>Revenues</b>	<b>13.9</b>	<b>16.7</b>	<b>-17%</b>	<b>31.3</b>	
<b>Gross margin</b> % of revenues	<b>4.1</b> 29.1 %	<b>8.2</b> 48.8 %	<b>- €4.1 m</b>	<b>11.1</b> 35.6 %	<ul style="list-style-type: none"> <li>Impact of changes in product mix</li> <li>Low margin on 1 machine</li> <li>H1 productivity lower than the standard</li> </ul>
Sales	(2.0)	(2.1)		(3.8)	
Research and development Of which gross expenditure Of which other items (RTC. IFRS capitalization...)	<b>(1.0)</b> (1.3) 0.3	<b>(1.7)</b> (1.6) (0.1)		<b>(3.0)</b> (2.5) (0.5)	<ul style="list-style-type: none"> <li>Lower development costs</li> <li>Strongest activation of projects on balance sheet assets</li> </ul>
Administration	(1.6)	(1.6)		(4.2)	
<b>Income from ordinary operations</b> % of revenues	<b>(0.5)</b> (3.6 %)	<b>2.8</b> 16.8 %	<b>- €3.3 m</b>	<b>0.1</b> 0.4 %	
<b>Operating income</b> % of revenues	<b>(0.5)</b> (3.7 %)	<b>2.8</b> 17.0 %	<b>- €3.3 m</b>	<b>0.0</b> 0.0 %	
<b>Net income</b> % of revenues	<b>(0.4)</b> (2.9 %)	<b>2.4</b> 14.4 %	<b>- €2.8 m</b>	<b>0.3</b> 1.0 %	<ul style="list-style-type: none"> <li>Taking into account a tax income of €0.1 m</li> </ul>

# Main changes in the consolidated balance sheet

Balance sheet at December 31, 2018  
€37.7 m



Balance sheet at June 30, 2019  
€38.8 m



# Change in the cash position at June 30, 2019

