

# **IMEC** **ASIC SERVICES**

# A PROVEN ROUTE TO REALIZE YOUR ASICS – WITH ACCESS TO ADVANCED TECHNOLOGIES

As a producer of high-quality applications, you prefer to have your ASICs made in a leading foundry, using advanced technology and stable processes. But if you are a start-up company, if you design ASICs for a niche market, or if you don't need high-volume production, it's near impossible to get direct access to these foundries. That's where imec comes in. We offer flexible access to prototype and production capacity at leading foundries. We complement this with high-quality support, design services, and packaging & test services.

## AGREEMENTS WITH LEADING FOUNDRIES

Imec has foundry agreements with leading suppliers. We offer a broad range of technologies, ranging from the most advanced to the very specific. Our foundry partners acknowledge imec's service as an optimal solution to provide wafer capacity for niche customers and products.

## TAILORED SERVICES MATCHING YOUR NEEDS

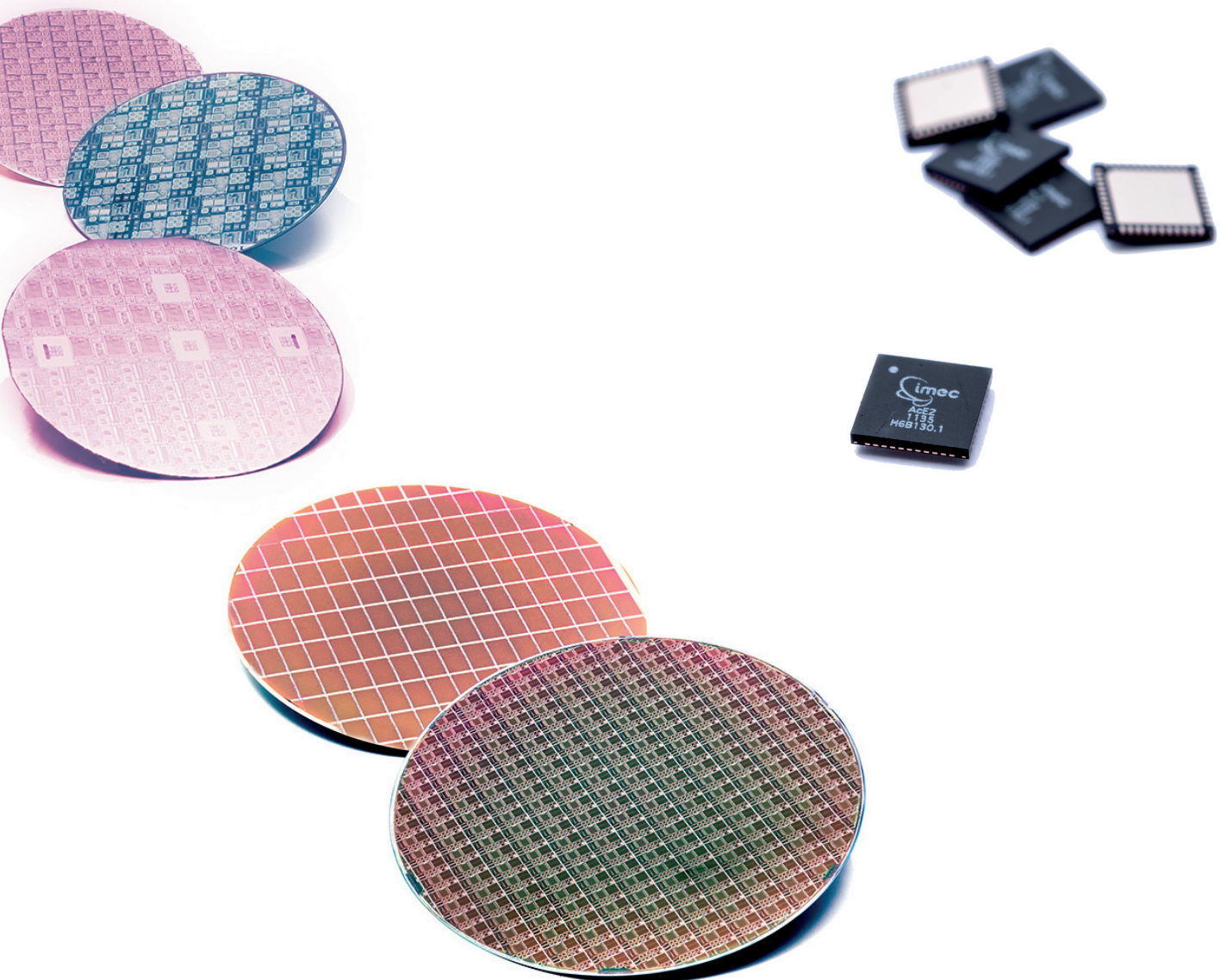
Next to high-quality wafer capacity, we offer extensive services and support. We can assist you with the IC layout, bridging the gap between your front-end design and the silicon IC. We can also characterize prototypes, qualify and test ASICs, and provide packaging through our best-in-class partners.

All these services are optional. You can choose any combination that complements your own expertise and strengths.

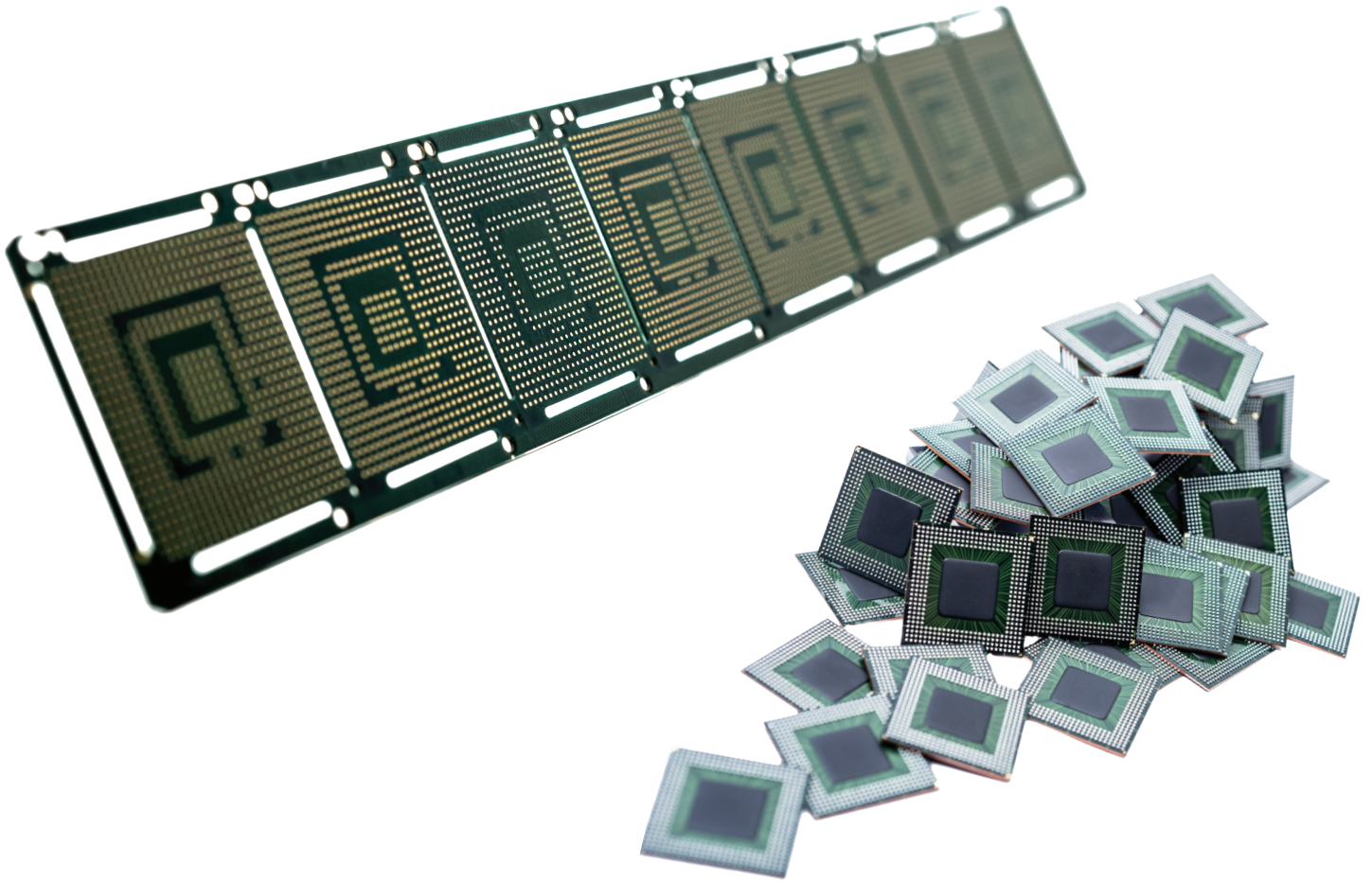
## YOUR PARTNER FOR EASE-OF-MIND ASIC PRODUCTION

Imec has experience in all stages of ASIC design and fabrication, profound expertise, and contacts with the leading wafer foundries and subcontractors. This makes us an ideal partner to implement your applications and products.

With our offering and services, you can concentrate on your core business: making innovative products and getting them to the market.







## HIGH-QUALITY, RELIABLE ASIC SERVICES

Next to wafer production in a wide selection of technologies, imec offers a complete range of additional services. You can choose any combination of these services, depending on your requirements, capacity and expertise.

### DESIGN SERVICES

Imec offers IC layout services, bridging the gap between your front-end design and the silicon IC. Starting from your RTL design or netlist, we make a layout ready for tapeout. For small companies, doing this type of back-end design in-house is too specialized and costly because of the expensive tools and highly trained personnel that are needed. Imec has those advanced tools, and a dedicated team specialized in layout.

### PROTOTYPING

We facilitate prototype fabrication, packaging, and testing. Prototyping can be done on engineering wafers or on multi-project wafers (shuttles). In parallel with prototype fabrication and packaging, test hardware and software may be developed.

### QUALIFICATION

Imec offers full ASIC qualification services. As the qualification requirements will differ per product (consumer, industrial, medical, space...), we provide fully customized solutions.

### VOLUME PRODUCTION

Once an ASIC is qualified, it is ready for volume production. During the ramp-up phase, the production yield is improved. Once the ASIC runs in high volumes, the test solution can be transferred to low-cost test houses.

### TEST SERVICES

To test ASICs, test software and test hardware (probecard and loadboard) are developed through local partners. Prototypes will be debugged and characterized at various temperatures, frequencies and voltages. Datalogs of the measurements, histograms, and CPK reports are generated. After successful corner lots, volume risk production can start with yield monitoring and improvement.

### PACKAGING

Imec provides prototype and volume packaging through leading assembly houses. Cost-efficient plastic packaging is offered in various types such as PQFP, QFN, BGA ... For specific cases such as space applications, high quality ceramic packaging is offered.

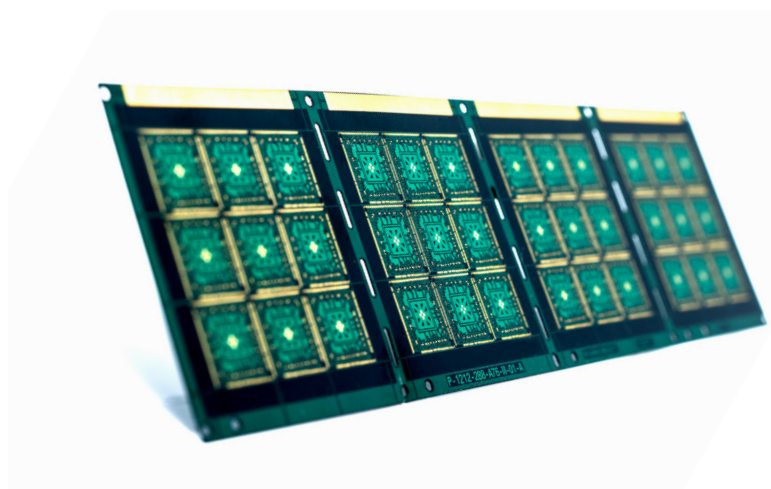
# FLEXIBLE BUSINESS MODELS FITTING YOUR NEEDS & REQUIREMENTS

Our flexible business models match your business requirements. By partnering only with leading suppliers, we ensure a reliable product supply, product quality, and a best-in-class yield. Imec takes responsibility for turning your product into a success story.

## FULFILLING YOUR REQUIREMENTS

Depending on the nature of your business, you will have very specific requirements for the supply chain of your ASICs. You may want to purchase wafers only and prefer to use internal operations to test, dice and package your ASICs at the lowest possible cost. On the other hand, you may prefer to fully outsource the ASIC supply chain and purchase fully qualified, tested and assembled ASICs, so that you can focus on your core activities. Between these two alternatives, any combination of services and requirements is possible.

We offer two basic business models. A flexible “easy” COT model (customer owned tooling), where imec facilitates the supply chain. And a robust full turnkey business model for those who completely want to outsource product manufacturing. During the product lifecycle, the business model can be adapted. This guarantees you to be the most reliable and competitive supplier in your market.



## WHY WORK WITH US?

### WHAT WE OFFER

Imec offers access to leading foundries and technologies, including all information needed to design, prototype and produce your ASICs in volumes. In addition, we offer flexible, world-class services. Services to support your ASIC design and production in the key areas where you may need assistance or extra capacity.

### POTENTIAL CUSTOMERS

You design and market advanced electronic solutions. You need production volumes of wafers, fabricated at one of the leading foundries. Imec can help you, even when you only need low volumes (e.g. a few wafer batches per year). Our customers are start-up companies, but also system houses that need ASICs for their products in applications such as communication, consumer, industrial, specialty wireless applications, high-end camera systems, sensors and actuators ...

### WHY CHOOSE IMEC?

Imec ASIC services give you ease of mind. We will take care of your project with the best team available.

- Highly experienced ASIC team
- Over 600 successful tape-outs per year, all types of applications and solutions
- Longstanding agreements with leading foundries
- Backed by imec, one of the world's leading R&D labs in electronics
- Flexible business models
- Tailored services adapted to your needs

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