

# TechCenters

From product development  
to best local service



Electronics

Best local service

atotech.com



# What are TechCenters?

To offer best local service and conduct extensive research and development (R&D), we have established a network of TechCenters in all key locations worldwide. Combining unique capabilities, sophisticated equipment and highly proficient teams of experts – TechCenters support our R&D efforts and exemplify our commitment to innovation while providing leading customer service.



# 10

**TechCenters worldwide**  
dedicated to electronics  
and semiconductor

## **From routine analyses to pilot production**

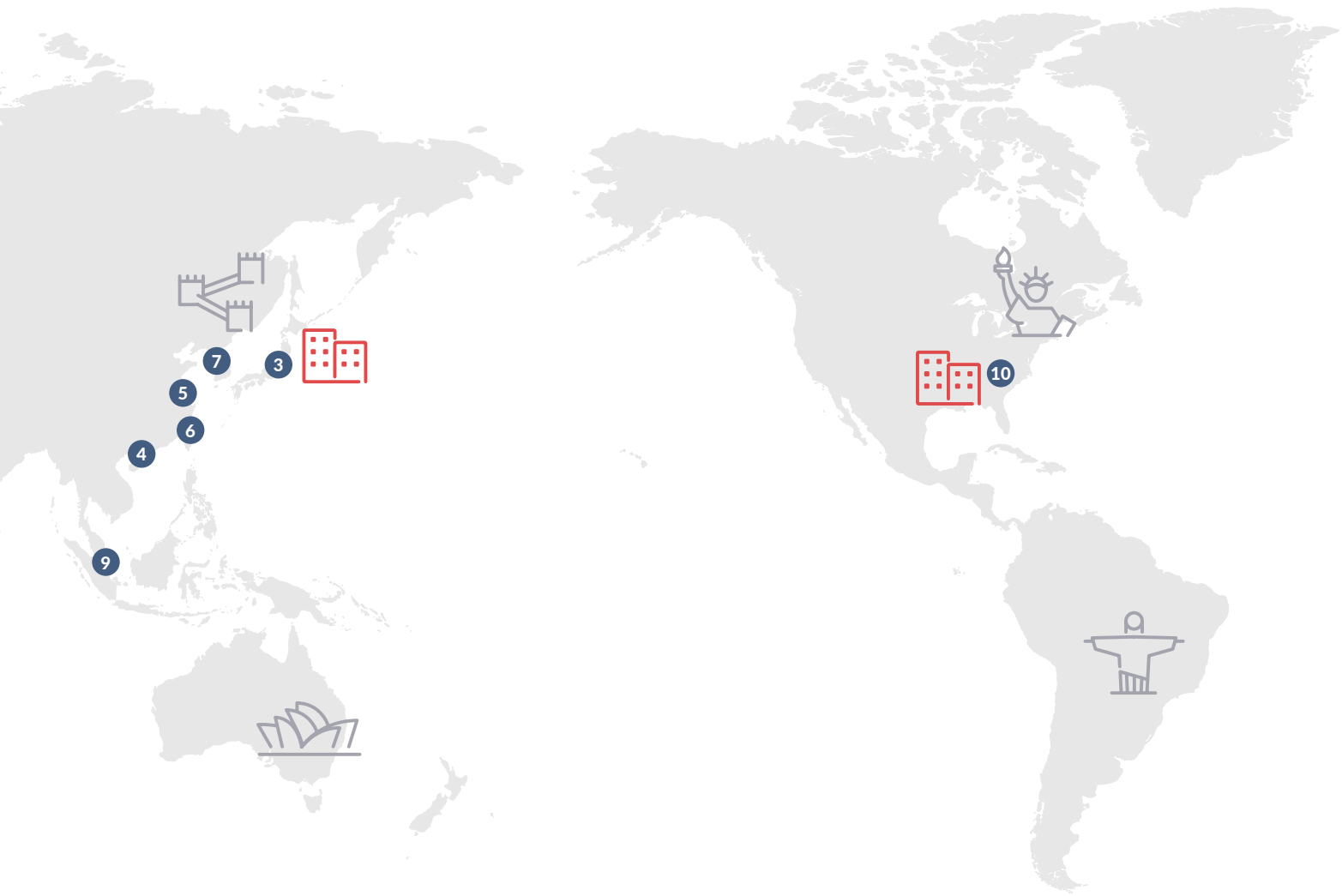
From routine analyses to customized examinations of samples – our TechCenters offer a host of unique services to our customers. Our technical specialists collaborate closely with customers and industry partners to undertake sampling, prototyping as well as pilot productions under production-scale conditions. All our analytical and materials science laboratories are fully equipped with cutting-edge equipment and tools.

## **Benefit from our expertise**

The TechCenters support our vision to constantly innovate and build new expertise. This enables us to provide top-notch technical support as well as to develop next generation processes. We share our knowledge with our customers and industry partners through hands-on training in our TechCenters worldwide.

## **Leading the movement for sustainable technologies**

The future of our industry depends on sustainability. Our long-term commitment combined with a clearly defined roadmap and intensive R&D, allows for constant progress towards our sustainability goals. TechCenters help us in developing and promoting new, more environmentally-friendly production solutions that reduce water, energy and chemical consumption while minimizing waste and the use of toxic substances – this reduces costs and protects the environment.



Regional head office  
 Berlin, DE  
 Yokohama, JP  
 Rock Hill, US

- ① Berlin, DE
- ② Feucht, DE
- ③ Yokohama, JP
- ④ Guangzhou, CN
- ⑤ Shanghai, CN
- ⑥ Guanyin, TW
- ⑦ Jangan, KR
- ⑧ New Delhi, IN
- ⑨ Singapore, SG
- ⑩ Rock Hill, US

### Helping customers remain one step ahead

Working closely with our customers and industry partners helps us anticipate the industry's future requirements. With the support of our TechCenters we are able to introduce new and relevant technologies to the market faster – offering our customers a strong competitive edge.



# Europe – Making core processes accessible to the world



**Production-size pilot lines**  
offer customers real production conditions

Europe is the heart of our electronics and semiconductor R&D activities. Two competence centers with different core focuses are located in Germany.

Our worldwide head office, including administration, R&D, and a TechCenter, is located in Berlin (Germany). Here, we combine intensive research and development for wet chemical processes with application work for customers and OEMs. In Feucht (Germany), we develop manufacturing systems and auxiliaries to continuously overcome technical equipment challenges.

The TechCenter in Berlin is equipped with production-sized pilot lines for various applications. These vary from printed circuit board to semiconductor technologies to support prototyping, sample plating and product development, as well as production runs for customers and OEMs – all under real production conditions.

We have invested heavily in technology and people in order to provide the industries' best service to our customers and drive innovations together with OEMs, institutes and universities.

# Sample plating equipment

## Berlin, Germany

### Printed circuit board and package substrate

Vertical desmear line, vertical electroless copper line, semi-automated vertical desmear and electroless copper lines, semi-automated vertical desmear and electroless copper prototype lines, G-Plate® prototype electroless copper module, horizontal ViaKing® line, Capstone and Geode® A laser drilling, horizontal copper plating line (Uniplate® Cu IP3), vertical hoist type plating line with soluble anodes in DC and pulse mode, 2 vertical conveyORIZED copper plating tools, NiAu vertical for 250x250 mm<sup>2</sup> (bond/hard gold and sulphamate nickel), vertical immersion tin line, vertical ENEPIG line, vertical automated ENEPIG line, horizontal tin plating module

### Semiconductor

**Electrochemical plating tools:** double side wafer plating line (MultiPlate®) for Cu plating on 150, 200 and 300 mm wafers, 5 fountain plater cells Semitool Raptor chamber for Cu 300 mm and Rena for Ni, Sn and Cu on 200 mm

**Electroless plating:** automatic batch wafer tool with spray pretreatment for Ni, and Pd on 150, 200 and 300 mm (Semsysco Galaxy), manual batch wafer tool for Ni, Pd and Au for 100-300 mm (Ramgraber)

**Pretreatment tools:** plasma etch for max 300 mm wafers

## Feucht, Germany

### Printed circuit board, package substrate and semiconductor

Developing (including complex simulation analysis), testing and manufacturing (including additive manufacturing of 3D printed parts) of plating equipment for printed circuit board, package substrate, semiconductor, wafer level packaging and panel level packaging including Uniplate®, MultiPlate®, G-Plate®; test equipment for different transport test modules (ultra thin material and glass handling), fluid delivery, ESD (Electro-Statical-Discharge), dryer unit, and long term testing, 2,000 m<sup>2</sup> ISO8/ISO7\* clean room

\*ISO7 optional



### Workforce

Plating specialists work in tight cooperation with scientists to develop outstanding products



### Services

From R&D, routine analyses to sampling, prototyping and pilot productions



# Asia – The gold standard in quality and service



**We are quality-driven**  
from product to service

With an eye firmly on the future, we invest heavily in one of the world's fastest-growing economies. We are committed to providing high-quality products and the best local service in the industry to our partners across Asia. In 2000, we inaugurated the first Asian TechCenter at our regional head office in Yokohama (Japan).

Our facilities are equipped with various vertical and horizontal pilot lines for oxide/oxide alternatives, desmear and electroless copper/direct plating, as well as acid copper and final finishing for printed circuit board and package substrate manufacturing.

In addition, we provide semiconductor equipment for advanced wafer metallization, from the chip interconnects to wafer level packaging technologies.

Our network consists of seven TechCenters across Asia, located in Yokohama (Japan), Guangzhou and Shanghai (China), Guanyin (Taiwan), Jangan (South Korea), Singapore and New Delhi (India).

# Sample plating equipment

## Yokohama, Japan

Printed circuit board and package substrate	Vertical desmear, e'less Cu line, advanced hor. through hole filling (Uniplate® Cu IP2 Advanced), vertical hoist type plating line (soluble anodes in DC and pulse mode), TH filling and double side plating, adhesion promotion on glass substrate, spray module for improved adhesion of e'less Cu to smooth substrates, G-Plate®, Geode™ A
Semiconductor	Vertical electrochemical copper for wafer bumping of 200 mm wafers

## Jangan, South Korea

Printed circuit board and package substrate	Vertical desmear line, vertical e'less Cu line, hor. SAP/mSAP line (Uniplate® P UTS-xs/LB UTS-s), vertical conveyorized plating (VCP) simulation line, vertical VCP simulation plater with 3 segment anode, vertical reverse pulse Cu plater, Cu plating minicell (paddle & eductor type, coupon scale)
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## Guangzhou, China

Printed circuit board and package substrate	Vertical desmear, vertical e'less SAP Cu line, direct plating line (conductive polymer), vertical hoist type plating line (soluble anodes in DC and pulse mode), VCP line, hor. photoresist stripping line, bonding enhancement line, solder mask pretreatment line, pumice pretreatment line, development line, vertical NovaBond® IT line, regeneration unit, vertical immersion tin plating line, vertical NiAu and NiPdAu plating line, hor. immersion tin plating line (Horizon® Stannatech), hor. final cleaning and drying, hor. desmear, e'less Cu line (P-/LB-Line®), horizontal OSP line, deburr line, Geode™ S/VS (Laser)
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## Shanghai, China

Printed circuit board and package substrate	Vertical desmear, direct plating line, vertical e'less copper line, bonding enhancement line, soldermask pretreatment line, vertical NiAu and NiPdAu plating line, VCP tank, VCP line (vPlate), ViaKing carbon line, Capstone™
Semiconductor	Pretreatment, electroless NiPdAu pretreatment-free wet bench

## Guanyin, Taiwan

Printed circuit board and package substrate	Vertical desmear, vertical e'less SAP Cu line, hor. Cu plating line (Uniplate® Cu IP2), vertical hoist type plating simulation full panel tool (soluble anodes in DC and pulse mode), VCP tank, vertical Cu plating on glass line, hor. and vert. bonding enhancement line, hor. solder mask/dry film pretreatment line, hor. super etching line, direct metal deposition on molding resin, vertical NiAu and NiPdAu plating line, hor. final cleaning and drying, MultiPlate® for Cu pillar plating and through hole filling (THF), Geode™ A
Semiconductor	Electroless NiPdAu pretreatment line with aluminum

## New Delhi, India

Printed circuit board and package substrate	Vertical Stannatech® & OSP tool line, Vertical NiPdAu plating line, Vertical Hoist and conveyorized Pattern/panel (VCP) plating line with DC & RPP capabilities; Vertical Desmear & Electroless Copper Line
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## Singapore, Singapore

Functional electronic coatings	Automatic pilot plating line for adhesion promoter for leadframes, manual plating lines (Cu, Ni, Sn, Ag, Au, Pd, Pd/Ni), rack line for pretreatment and posttreatment, adhesion promoter for leadframes, overflow high-speed plating (Sn, Ag), jet-plater for high speed spot plating (Ag, Pd, Au), portable plating cells (Cu, Ni, Sn, Ag, Au, Pd, Pd/Ni)
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# The Americas – Proven experience paired with prime resources



**Tailored on-site support**  
for world-leading companies

The Americas are home to some of the largest automotive, communication electronics and semiconductor companies in the world. Our TechCenter in North America caters to these industries.

The TechCenter in Rock Hill (USA) is equipped with pilot lines for various applications, as well as analytical and materials science service labs that provide tailored on-site customer support, especially to the North American markets. Customers can benefit from our special expertise to conduct high-aspect ratio sample plating work for electroless copper processes and acid copper pulse plating. Apart from excellent technical support capabilities, our site in RockHill is also our regional head office for administration and R&D.



# Sample plating equipment

## Rock Hill, USA

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Printed circuit board and  
package substrate

Vertical electrolytic nickel / copper / tin line in clean room



### Remote service

A remote service team supports  
customers 24/7



### IIoT

Our IIoT and data driven digital solutions  
enable new levels of performance and  
support to our customers for their  
production equipment



### Workforce

Local plating specialists and  
scientists focus on the needs  
for the American market



### Certification

All of our TechCenters have ISO 9001,  
14001, and 45001 certification;  
many also have ISO 17025 certificates



## Indispensable supporting services

278,175

**tests conducted**

by materials science experts  
in our TechCenters worldwide  
(EL & GMF, 2023)

Our analytical and materials science laboratories support customers with cutting-edge scientific tools and highly skilled professionals. We run everything from routine analyses to sophisticated, customized examinations of samples. Our laboratories handle a broad range of product quality and reliability testing, including performance tests for e.g. soldering, bonding, corrosion resistance and torque tension measurements – all carried out in accordance with international standards and OEM specifications.

Our analytical and materials science laboratories play a crucial role in our R&D efforts. Latest equipment supports us in developing customer-oriented innovations and solutions.

# Unrivaled expertise

## Analytical services

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Process control with regular analysis of the bath

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Analyze samples, electrolytes and wastewater using state-of-the-art measurement equipment

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Determine elements with spectroscopic methods (F-AAS, ICP-MS) and ion chromatography

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Determine organic additives with chromatography (HPLC, LC-MS, GPC, GC) and electrochemical methods (CVS, POL)

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Training in analytical methods according to the technical data sheets (TDS)

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Troubleshooting support with analytical investigations and process specific practical tests

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## Materials science services

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Inspecting solid samples with highly sophisticated microscopes such as AFM, SEM and FIB

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Determine layer thickness and crystal structures

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Analyze elemental composition with spectroscopic methods such as XRF and EDX

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Determine surface roughness by various optical and tactile methods

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Investigate mechanical properties like hardness, peel strength, ductility and CoF

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Perform corrosion testing according to a variety of standards (e.g. NSS, AASS, CASS)

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# 1,109,682

### tests conducted

by analytical service experts  
in our TechCenters worldwide  
(EL & GMF, 2023)



# All over the world and right around the corner

With our global TechCenter network, customer support is always close at hand. Our expert teams provide first-class support and consultation for every technical requirement.

We run 10 TechCenters in the electronics (EL) business unit to support printed circuit board, package substrate, and semiconductor manufacturers. These are located in Germany, Japan, China, Taiwan, South Korea, India, Singapore, and the USA.

