

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.



12

TechCenters worldwide
dedicated to electronics
and semiconductor

From routine analyses to pilot production

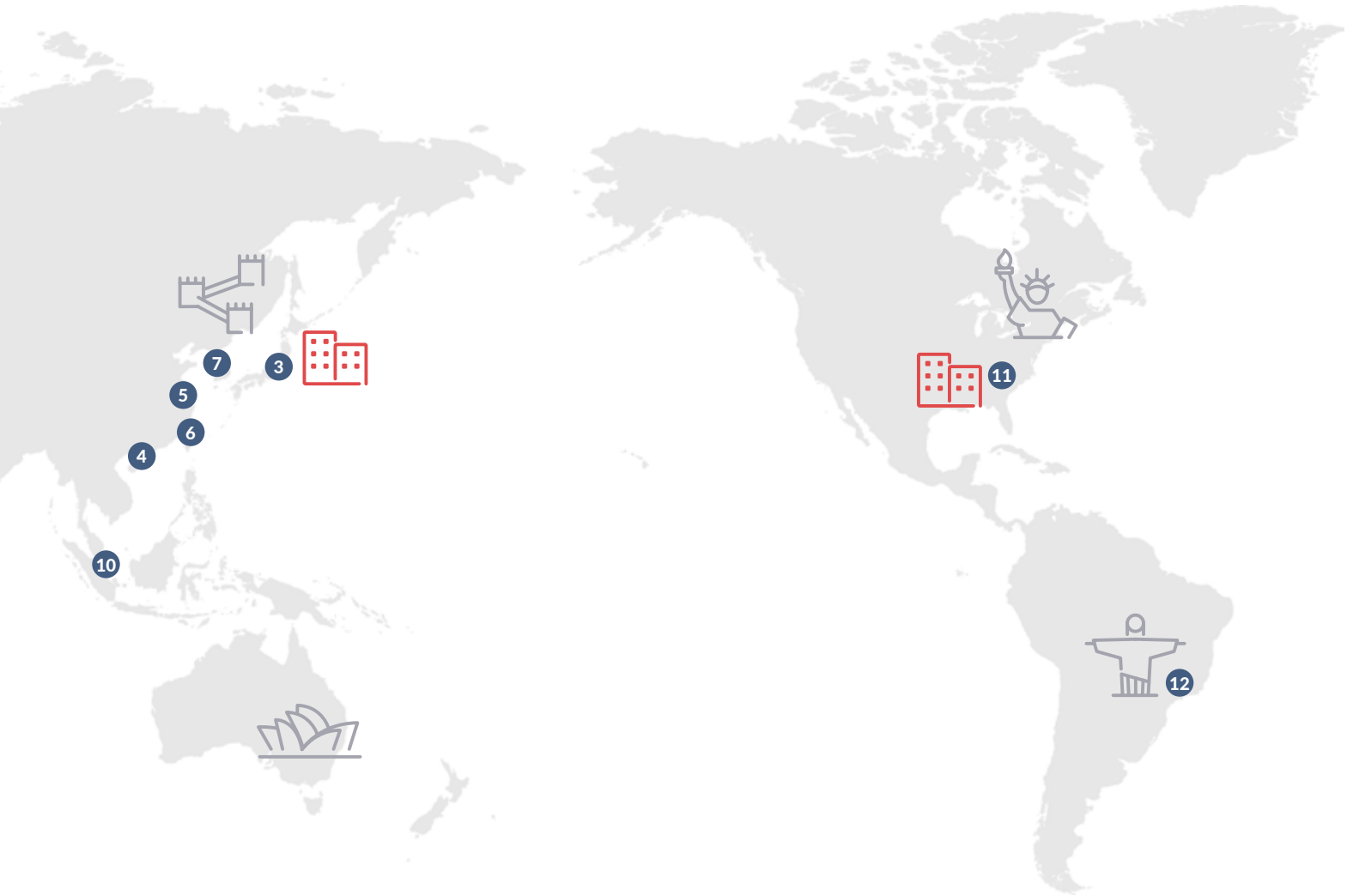
From routine analyses to customized examinations of samples – our TechCenters offer a host of unique services to our customers. Our technical specialists collaborate closely with customers and industry partners to undertake sampling, prototyping as well as pilot productions under production-scale conditions. 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 | ④ Guangzhou, CN | ⑦ Jangan, KR | ⑩ Singapore, SG |
| ② Feucht, DE | ⑤ Shanghai, CN | ⑧ Bangalore, IN | ⑪ Rock Hill, US |
| ③ Yokohama, JP | ⑥ Guanyin, TW | ⑨ New Delhi, IN | ⑫ São Paulo, BR |

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 PTH prototype line, horizontal PTH plating module, horizontal copper plating line (Uniplate® Cu IP2), 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, copper plating line (MultiPlate®) for panel level substrates up to 510 × 515 mm, NiAu vertical for 250x250 mm² (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: (Semsysco, high pressure chamber) for Cu on 200 and 300 mm, 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). Automatic spray batch pretreatment tool for Cu, Al and Al alloys (Semitool)

Pretreatment tools: plasma etch for max 300 mm wafers

Feucht, Germany

Printed circuit board, package substrate and semiconductor

Developing, testing and manufacturing of plating equipment for printed circuit board, package substrate, flat panel display, semiconductor, wafer level packaging and panel level packaging including Uniplate®, MultiPlate®, VisioPlate®; test equipment for different transport test modules (ultra thin material), fluid delivery, flow sensor, dryer unit, and long term testing, 2,000 m² 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, New Delhi and Bangalore (India).

Sample plating equipment

Yokohama, Japan

Printed circuit board and package substrate	Vertical desmear, direct plating, e'less Cu line, advanced hor. through hole filling line (Uniplate® Cu IP2 Advanced), hor. pattern plating line (Uniplate® Cu IP2 Pattern), vertical hoist type plating line (soluble anodes in DC and pulse mode), vertical VCP simulation tool (full panel), MultiPlate® for advanced PKG (ultra fine line RDL, L/S less than 3µm), TH filling and double side plating, non-etching adhesion line, adhesion promotion on glass substrate, spray module for improved adhesion of e'less Cu to smooth substrates, vertical NiAu and NiPdAu plating line, vertical immersion tin plating line
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-UTSxs / LB-UTSs), hor. flat panel display line (VisioPlate® FPD), vertical VCP line, tin plating line, hor. line for resist stripping / non-etching adhesion promotion / tin stripping / palladium stripping
---	--

Guangzhou, China

Printed circuit board and package substrate	Vertical desmear, e'less Cu line, vertical hoist type plating line (soluble anodes in DC and pulse mode), vertical VCP line, hor. photoresist stripping line, bonding enhancement line, soldermask pretreatment line, pumice pretreatment line, development line, vertical NovaBond® IT line, Secure HFz 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
---	---

Shanghai, China

Printed circuit board and package substrate	Vertical desmear, direct plating line, vertical e'less Cu line, vertical hoist type plating line (soluble anodes in DC and pulse mode), vertical panel and pattern plating in direct current and reverse pulse mode, vertical VCP line, bonding enhancement line, soldermask pretreatment line, vertical NiAu and NiPdAu plating line
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 pattern plating (Uniplate® Cu IP2), vertical hoist type plating simulation full panel tool (soluble anodes in DC and pulse mode), vertical VCP line, 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
Semiconductor	Aluminum pretreatment, MultiPlate® to Cu pillar plating, through hole filling (THF), redistribution layer plating (RDL) and double sided plating (DSP)

Bangalore, India

Printed circuit board and package substrate	Vertical desmear simulation tool, vertical direct plating simulation tool, vertical e'less Cu plating simulation tool, vertical hoist type plating simulation tool (DC and reverse pulse), vertical conveyORIZED plating (VCP) simulation tool, vertical NiAu and NiPdAu plating line
---	---

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)
--------------------------------	--



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 network of TechCenters in both North and South 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.

Another TechCenter in São Paulo (Brazil) is dedicated entirely to the South American printed circuit board industry.

Sample plating equipment

Rock Hill, USA

Printed circuit board and package substrate

Vertical electrolytic nickel / copper / tin line in clean room, vertical hoist type plating simulation tool (full panel) with soluble anodes

São Paulo, Brazil

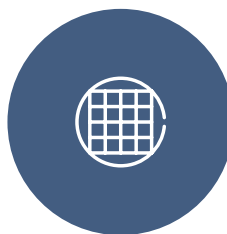
Printed circuit board and package substrate

Vertical desmear simulation tool, vertical direct plating simulation tool, vertical electroless copper plating simulation tool, vertical hoist type plating simulation tool



Workforce

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



Damascene competence center

State-of-the-art processing facility for complete wafer production process



Indispensable supporting services

238,674

measurements run
by materials science services
in German TechCenters (2019)

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

Process control with regular analysis of the bath

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

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

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

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

Troubleshooting support with analytical investigations and process specific practical tests

Materials science services

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

Determine layer thickness and crystal structures

Analyze elemental composition with spectroscopic methods such as XRF and EDX

Determine surface roughness by various optical and tactile methods

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

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

77,513

measurements run
by analytical services in
German TechCenters (2019)



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 12 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, the USA and Brazil.

Atotech Group
Erasmusstraße 20
10553 Berlin – Germany
+49 30 349850
info@atotech.com

Global head office



atotech.com