



TECHNIC

Advanced Engineered Solutions

Specialty Chemicals

Surface Finishing Equipment

Engineered Powders

Analytical Controls



Corporate Vision & Mission Statement

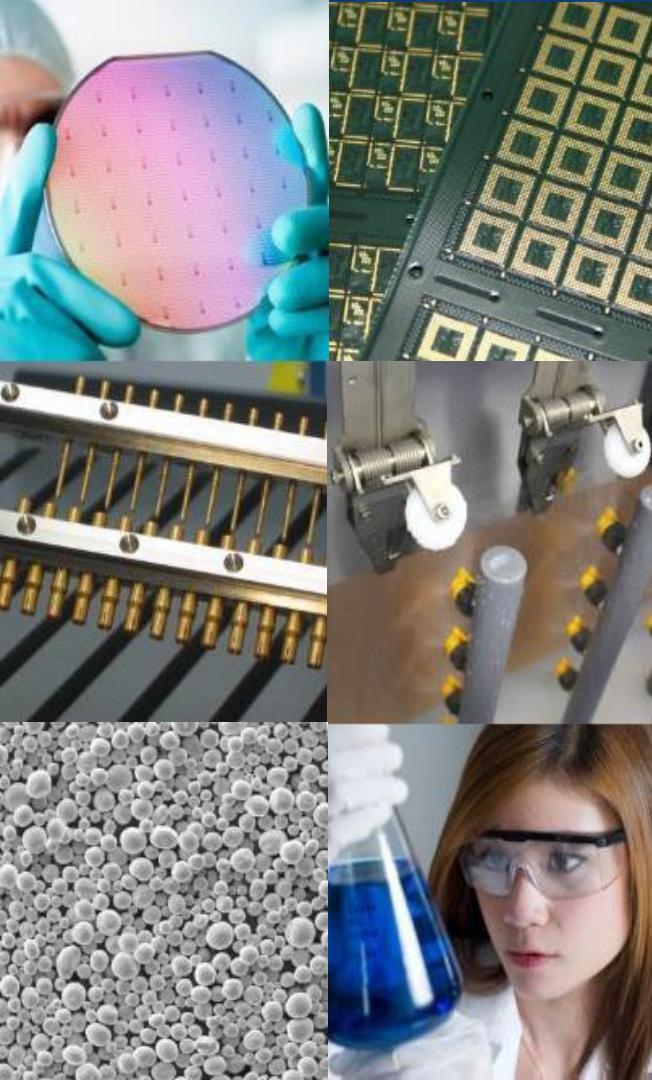
- Technic will lead our industry in value creation for our customers and stakeholders.
- Our Mission is to constantly strive to make our customers successful by delivering differentiated technical and commercial value and best in class overall customer support.
- We consistently strive to push the limits of what can be accomplished.



A photograph of a female scientist with long brown hair, wearing a white lab coat, working on a computer in a laboratory. She is standing at a desk with a computer monitor, keyboard, and mouse. The background shows laboratory equipment and shelves.

About Technic

- Technic is a privately held, global company with a belief in innovation and employee empowerment.
- Approximately 950 employees worldwide
- Strong financial resources and stability
- Various ISO 9000 approved facilities
- A strong commitment to new product research & development
- Annual Sales volume in excess of \$400,000,000



Technic – *Company History*

Technic is a Rhode Island, USA based private company.

- Family owned since inception
- Incorporated in 1944
- Expansion into the electronics industry in the 1950s
- Continuous expansion by acquisition and organic growth

Technic has grown to be a leading global supplier of:

- Specialty Chemicals
- Surface Finishing Equipment
- Engineered Powders
- Analytical Control Systems





Technic – Business Units

- Corporate Headquarters: Cranston RI, USA - Specialty Chemicals, Precious Metals, R&D.
- Equipment Group: Pawtucket, RI; Clearwater, FL; and Singapore
- Engineered Powders: Woonsocket, RI, USA
- Plating Services: Suzhou and Zhangjiang, China
- Ultra-Pure Chemicals: Paris and Chalon Sur Saone, France
- Metal Concentrates (SCS): Royersford, PA, USA
- In addition, regional sales & service offices provide representation in all major markets.



Technic – Acquisitions (Partial List)



1984 – 1991 - Kentucky Automatic, Advanced Automation, TNT (Equipment)

1992 – Handy & Harman (Metal Powders & Flakes)

1992 – Am. Chemical & Refining (Silver Salts, Precious Metals)

1996 – Baker Bros., Micro-Plate (Reel-to-Reel, Hoists, Web & Wide Strip)

1997 – Lektrachem Ltd. (Coventry, England, Process Chemistry)

1997 – Sotrachem (St. Denis, France, Process Chemistry & Equipment)

1998 – Italgalvano s.r.l. (Milan, Italy, Process Chemistry & Equipment)

1999 – Engelhard Corp. American Plating Chemicals Group (Process Chemistry)

2008 – Air Liquide Hydrogen Peroxide Division (Semiconductor Chemistry)

2008 – Kushner Electroplating School (Technical Training)

2009 – Metfab (Equipment)

2013 – Kemesys (Semiconductor Chemicals)

2021 – Premier Lacquers (Process Chemistry)

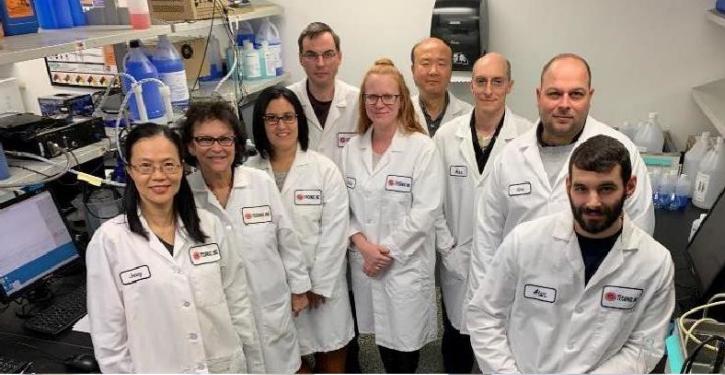


Technic—Corporate Offices

Cranston, Rhode Island

- Executive Offices
- Product Managers
- Accounting
- Inside Sales
- Accounts Payable
- Marketing and Communications
- Human Resources
- IT
- Operations
- Client Meeting Rooms
- Video Conferencing
- Training Facilities





Technic – Research & Manufacturing

Cranston, RI, USA 120,000 sq. ft. (ISO 9001-2000)

- R&D Laboratories
- Applications Engineering Laboratory
- Analytical Lab
- Quality Control
- Chemical Manufacturing

Technic supplies proprietary chemicals and precious metals to over 500 customers globally.



Company Confidential - Do Not Distribute

Technic Worldwide Operations

Corporate Offices

Cranston, RI, USA



Technic Worldwide Operations

Chemical Manufacturing, R&D, Sales & Service Offices

USA: Rhode Island (3), Illinois, California (2), New York

Canada

Europe: France(4), Germany, Italy, England

Hong Kong

China (3)

Taiwan

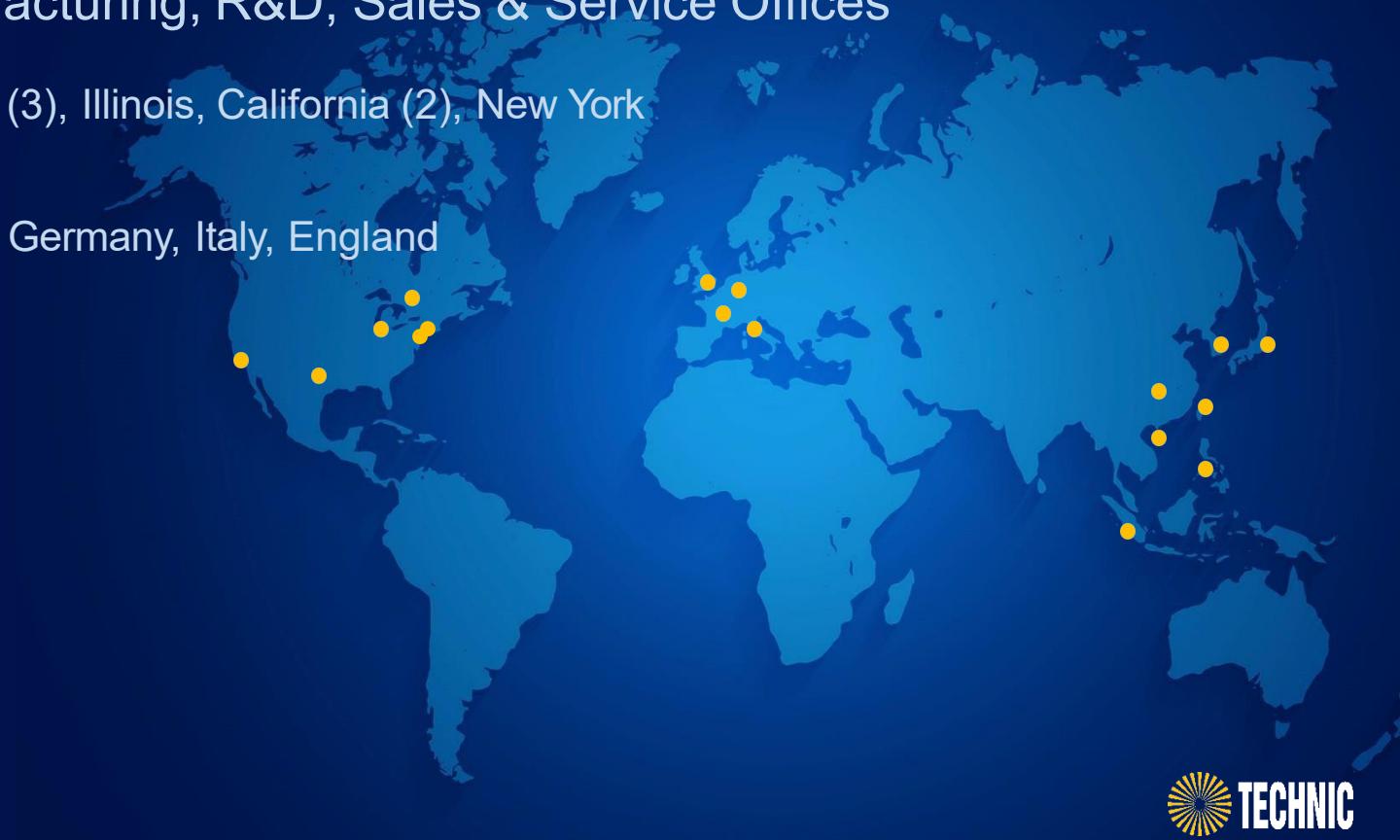
Singapore

Korea

Japan

Malaysia

Philippines



Technic Worldwide Operations Equipment Manufacturing

Pawtucket RI, USA
Clearwater, FL, USA
Singapore



Technic Worldwide Operations

Engineered Powders

Manufacturing

Woonsocket, RI, USA

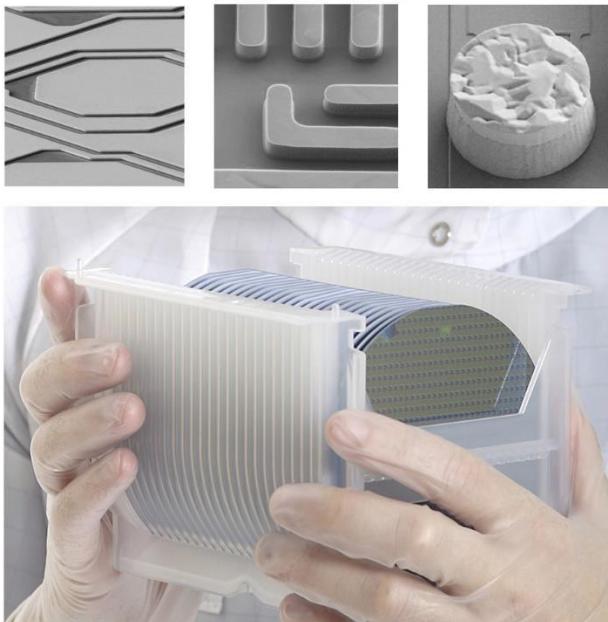


Technic Worldwide Operations

Electroplating Services Division

Suzhou and Zhangjiang, China





Semiconductor Materials

ECD Products for Advanced Packaging

Cranston, RI, Paris, FR, Grenoble, FR, Anaheim, CA

Technic offers a wide range of ECD (electroplating) products for semiconductor applications, including:
Cu, Ni, Sn, Sn/Ag, Au, Au/Sn

Commercialized under the **Elevate®** product family

Applications lab for plating demonstrations (Cranston, RI)

Prototype wafer tools (Anaheim, CA, Taiwan, Singapore, China)

The image shows the front cover of the 'TechniEtch TBR19 - High Performance Etchant' brochure. The cover features a blue and white design with the product name in large, bold letters. Below the name is the subtext 'High-Performance Etchant'. To the right of the text is the 'TECHNIC' logo with the website 'www.technic.com'. The brochure is open to a page showing a hand holding a white, rectangular etched component. Below this image is a scanning electron micrograph (SEM) showing a cross-section of the etched material, with labels 'Cu' and 'Ti' indicating the different metal layers. The page also contains text and a table comparing etch rates for different materials. The overall layout is clean and professional, designed to showcase the product's capabilities.

The image shows a physical brochure for 'TechniStrip® NF52 Photostrip Stripper' on the left and a screenshot of its website on the right. The brochure features a large blue header with the product name, a yellow sunburst logo, and the word 'TECHNIC'. Below the header, it says 'Photostrip Stripper' and 'High Dissolution, High Metal Compatibility, NMP-free Photostrip Stripper'. It includes a detailed description of the product's features, such as 'Advanced Padding' for uniform dissolution and 'High Dissolution, High Metal Compatibility'. It also highlights 'NMP-free' and 'No rinsing required' as key benefits. The website screenshot shows a similar layout with the product name, a large image of a white, textured strip, and a table of 'Dissolve Rate (in 10 sec)' for various metals. The table includes entries for Al, Cu, Ag, Sn, Pb, Zn, Cd, Ti, and Au, with values ranging from <1 to >10. The website also features a 'Why Photostrip' section with a bulleted list of benefits.

The image shows a brochure for TechniStrip NI555 Photore sist Stripper. The brochure features the product name at the top, followed by a yellow sunburst logo and the word 'TECHNIC'. Below this, it says 'Photoresist Stripper' and 'Unique Acidic Solvent Blend for Full Dissolution of Chemically Amplified Resins'. The text is followed by a detailed description of the product's features and benefits, including its compatibility with various photoresist materials and its effectiveness in removing photoresist without attacking the underlying substrate. The brochure also includes a table of 'High Success Compatibility' and two photographs showing the results of using the stripper: 'Before Stripping' and 'After Stripping'. The 'Before Stripping' image shows a complex, multi-layered microchip structure, while the 'After Stripping' image shows the same structure with the photoresist removed, revealing the underlying substrate.

Semiconductor Materials

Specialty Chemicals-FEOL, BEOL & FBEOL

Woonsocket, RI, Paris, FR, Grenoble, FR, Anaheim, CA

Specialty chemicals for critical aspects of the semiconductor manufacturing process

- **TechniClean**: PER removers, PCMPC, ink remover, debonding, etc.
- **TechniStrip®**: Liquid resist and laminated film strippers
- **TechniEtch**: Selective barrier, seed layer, stack etchants



Semiconductor Materials – Ultra Pure Chemicals-FEOL, BEOL

Paris, Chalon Sur Saone, Rousset, France

Facility and Operation

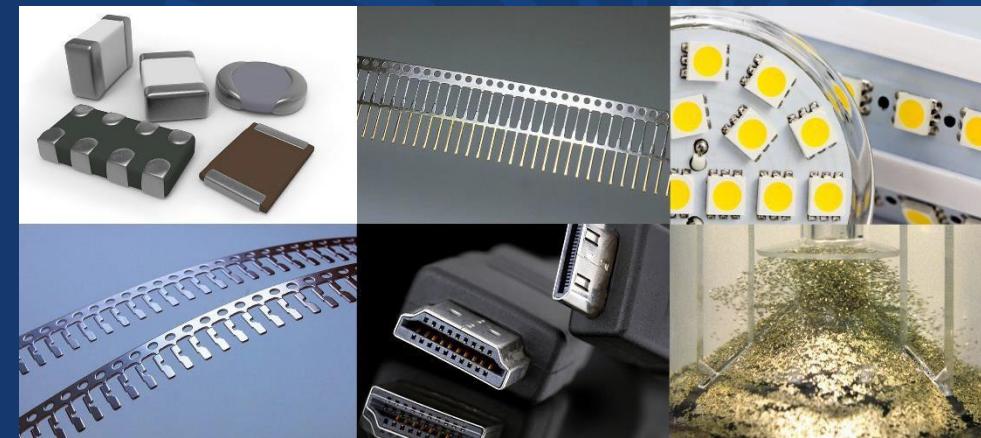
- Supplier to the semiconductor industry since 1978
- Acquisition of Air Liquide divisions in 2008
- Acquisition of Kemesys in 2013
- Clean room manufacturing from 1 to 1000 liters

Products

- Chemicals for FEOL and BEOL semiconductor manufacturing : Acids and blends, H_2O_2 , Solvents

Technic Advanced Technology Division

Plainview, New York 8,000 sq. ft.



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Technic Equipment Group

Pawtucket RI, Clearwater FL, Singapore

Technic operates three equipment manufacturing facilities worldwide:

- Technic Equipment Division (TED)
- Surface Finishing Technologies (SFT)
- Technic Future Automation (TFA)

Processes supported include;

- Electroplating
- Anodizing
- Cleaning
- Electropolishing

Each location offers engineering, fabrication, assembly, and service departments. Individual sites offer distinct core competences for equipment platforms.



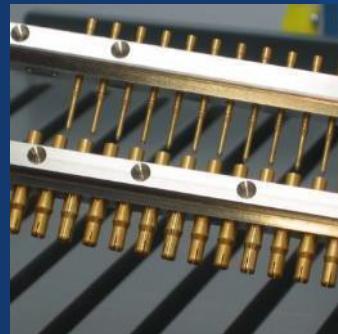
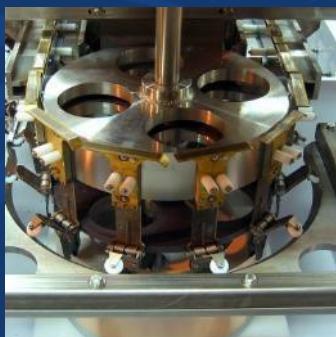
Technic Equipment Group

Pawtucket, Rhode Island 55,000 sq. ft.



- Automated Hoist Systems (rack and barrel – for all applications)
- Reel-to-Reel Plating Systems
- SBE® Systems (patented) for chip capacitors/resistors, small parts > 110 lines sold
- Medical Device Manufacturing tools – highly automated processing
- Benchtop Plating Systems for Lab or Pilot Production
- Automatic, Semi-Automatic, & Manual Lines

Surface Finishing Technologies (SFT) – Clearwater, FL 40,000 sq. ft.



- MP200 Roll-to-Roll Plating Systems for flexible circuits
- CDP2000 Selective Plating Systems
- MP100 Vertical Continuous Plating Systems for PCB's
- SEMCON Plating Equipment for wafer processing
- MP300 Continuous Plating Systems for loose parts plating
- Advanced Material Handling Systems for Ultra-thin Substrates

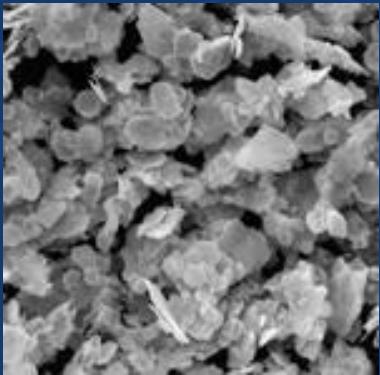
Technic Future Automation (TFA) – Singapore, 42,000 sq. ft.



- Leading Asian producer of cut strip surface finishing equipment for the semiconductor packaging market
- Plating (Sn, Ni/Pd/Au) / Mold adhesion enhancement / Deflashing application
- > 300 lines sold globally
- Cleaning system for Semiconductor & Solar Industry
- Current focus is surface finishing tools for the advanced packaging market in Asia
- Recent expansion in capabilities for high speed (> 10 ASD) Vertical Cu Electrodeposition System

Technic Engineered Powders Division

Woonsocket, Rhode Island, 103,000 sq. ft. (ISO 9001-2000)



Technic Engineered Powders manufactures metal powders and flakes for the photovoltaic, electronics, electrical, jewelry, aerospace, and medical industries. The Division's products are sold throughout the U.S., Asia, and Europe.

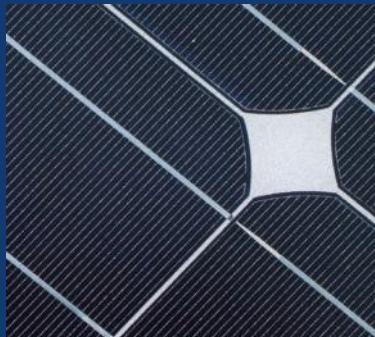
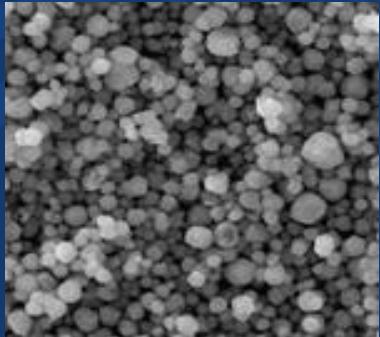
Range of applications:

- PV pastes
- Conductive adhesives
- Shielding inks
- Electrical contacts



Technic Engineered Powders Division

Woonsocket, Rhode Island, 103,000 sq. ft. (ISO 9001-2000)



Applications

- Solar Cells
- LED Lighting
- Touch Screen Display
- Hybrid Electronics
- Electrical Contacts
- Conductive Elastomers
- Antiseptic Products
- EMI/RFI Shielding / Gasket Materials
- Diamond Grinding Wheels
- Conductive Inks, Pastes and Adhesives
- Conductive / Reflective Coatings



Analytical Control Systems (EBA and RTA)



Technic offers a full line of ECD process analyzers, from a fully automated, in-tank systems (RTA – Real Time Analyzer) to bench-top (EBA - Electroplating Bath Analyzer) units. Technic monitoring systems combine the power of AC and DC voltammetry with the state of the art chemometric approach.

- Technic RTA
Fully Automatic On-line Chemical Analysis
More than 200 units in operation globally
- Technic EBA
Manual Bench-top Analytical Equipment



Technic's Industry Leadership

- Currently, Technic is the #1 supplier of precious metal plating processes in North America. (Silver, Gold, Palladium, Platinum, Rhodium, Ruthenium, and alloys)
 - > 400 gold process customers
 - > 300 silver process customers
- Technic EPD is a leading supplier of Ag powder for PV applications
- Leading edge surface finishing equipment design:
 - First high-speed cut strip “magazine-to-magazine” plater (>300 units)
 - MP-100/200 reel-to-reel flex circuit board plater (>100 units)
 - Spouted Bed Electrode (SBE) plater for MLCC (>100 units)
 - SEMCON wafer metallization benches (>50 units)
- Automated Bath Analysis - Real Time Analyzer equipment (> 200 units) for semiconductor wafer Cu plating, EBA for PWB and electronic component markets
- Technistrip, TechniEtch, TechniClean, and Elevate series of semiconductor processes
- Leading edge chemistry for “green” manufacturing, including non-cyanide precious metal processes, non-boric acid Ni, Ni barrier layer replacement, etc.

Technic Global Field Service and Support



- Substantial global assets in support of complex manufacturing initiatives
- Troubleshooting of chemical, electrical, mechanical or control problems
- No-charge analytical and metallurgical analysis*
- Available service personnel 24 hrs./day, 7 days/week – through our worldwide service network
- Proactive customer service program
 - Process / line audits before installation
 - Startup review with engineering & mfg. departments
 - Technical personnel training in chemistry / equipment
 - Ongoing preventive maintenance programs
- Regular system performance audits and adjustments
- Ongoing commitment to on site customer support

**To qualified customers*

Service and Technical Support Infrastructure



North America

Customer Service Labs in five locations

Cranston, RI; Plainview, NY; Chicago, IL; Anaheim, CA;
Toronto, Canada

>20 technical field support personnel

Europe

Customer Service Labs in five locations

Coventry, UK; Paris, France; Grenoble, France; Milan, Italy;
Balve, Germany

>15 technical field support personnel

Asia

Customer Service Labs in seven locations

Yokohama, Japan; Seoul, Korea; Hong Kong, China; Suzhou,
China; Donguan, China; Jiangmen, China; Hsinchu, Taiwan; Singapore

>50 technical field support personnel



Technic Technology Overview

- Development of innovative technology is and always has been the heart of Technic
- Technic holds a significant IP position (US and overseas patents and proprietary formulations/designs) in electrodeposition and specialty chemistry, equipment design, and related fields
- Technic performs applied R&D and materials process development in eight (8) global locations:

Cranston, RI, USA

Plainview NY USA

France / 2 Sites (Semiconductor)

Hong Kong

Taiwan

Italy (Industrial / Decorative)

Woonsocket, RI USA (Engineered Powders)

- Product availability and support from UK, Italy, France, and joint development partners
- Technic has prepared for the future by investing heavily in R&D infrastructure, technology development, and support capability while competitors are consolidating



Technic Technology Overview

- Technic employs a staff of over 100 high level scientists and engineers working in research, product characterization, and materials/equipment engineering.
- A large variety of lab scale and prototype processing equipment for many applications.
- New Applications Engineering Labs in Hong Kong, France, Jiangmen, PRC and Singapore.

Equipment and Testing Capabilities

AFM	Solderability testers
SEMs w/ EDX	Reflow ovens
ICP/MS, ICP/AES	Wetting balances
Ion Chromatography	Wear/contact resistance testing
UHPLC, HPLC, GC, GC/MS	Ductility/elongation testing
AA, ICP, UV/VIS, FTIR, RTA	Viscometers
EBA, CVS, XRD	Conductivity testers
TGA, TMA, DSC,	Cross sectioning equipment
Synthesis/reaction vessels	Surface profile meters
Surface tension analyzers	and more...

Technic's Continued Commitment to Innovation



- Internal formulation of advanced metallization, ECD, semiconductor materials (PR strip, metal etch, and PERR clean), imaging materials, engineered powders, and ancillary processes/products.
- Consortia, Licensing or Joint Development Programs
 - UCLA CHIPS – *Semiconductor Packaging Integration*
 - LETI IRT – *Semiconductor FEOL and BEOL materials*
 - ECSEL – *MatQ Project (Quantum Computing)*
 - Technic Italy (Italgalvano) – *Industrial finishing processes*
 - Stapleton Technologies – *Wafer-level packaging tools and chemistry*
- Product development and application-specific equipment development.
- Research university and institute collaboration (MIT, Arizona State, Hong Kong Polytechnic, Harvard, Fraunhofer, AENEAS, others)
- Tool Supplier Collaboration – AMAT, Lam, Class One, Nexx, Veeco, DNS, others
- Integration of plating processes, analytical controls, and equipment for complete solutions to our customers' processing requirements.





Technic Strengths

- Advanced Engineered Systems
- Strong Technology Innovation
- Superior Technical Support
- Global Infrastructure
- Flexibility
- Global Manufacturing Capabilities
- Leading Edge Process Performance