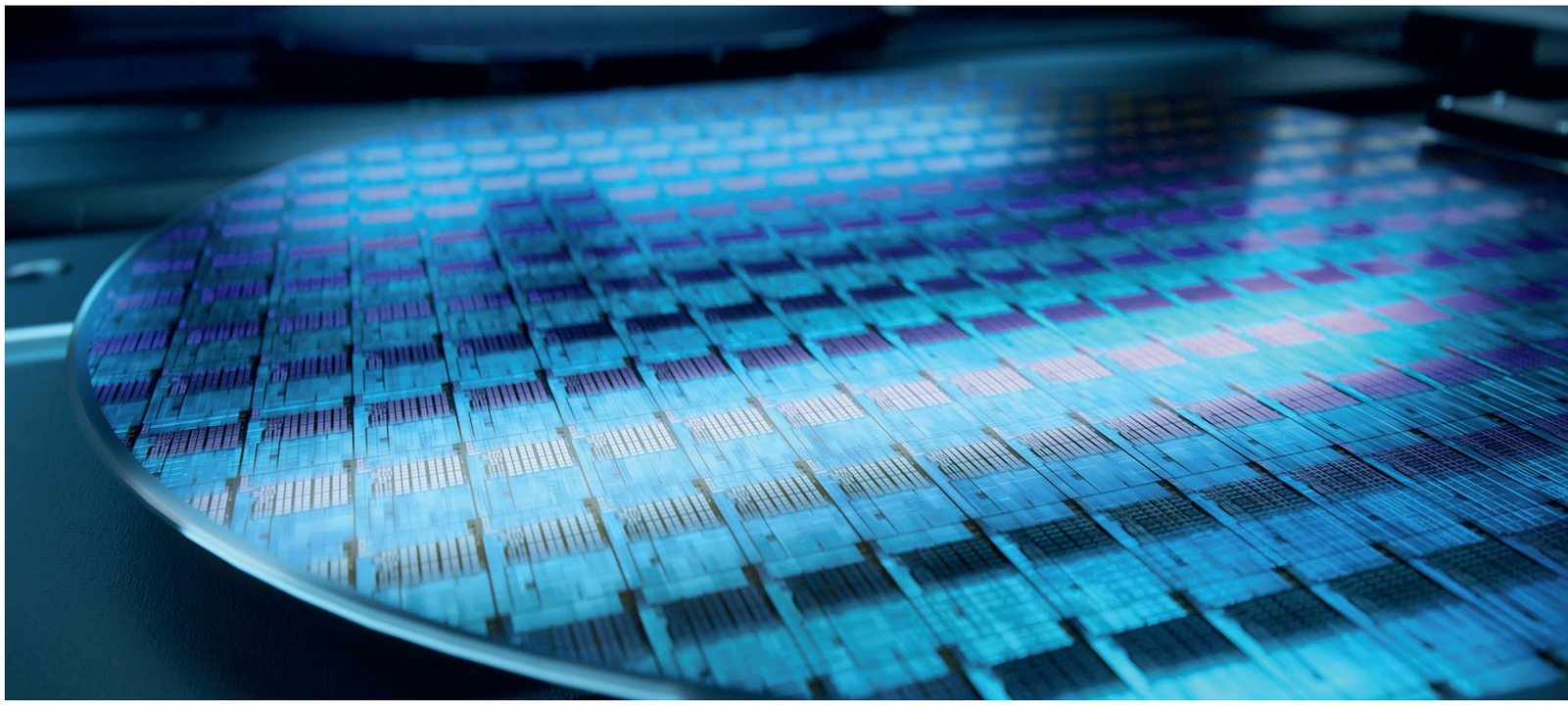
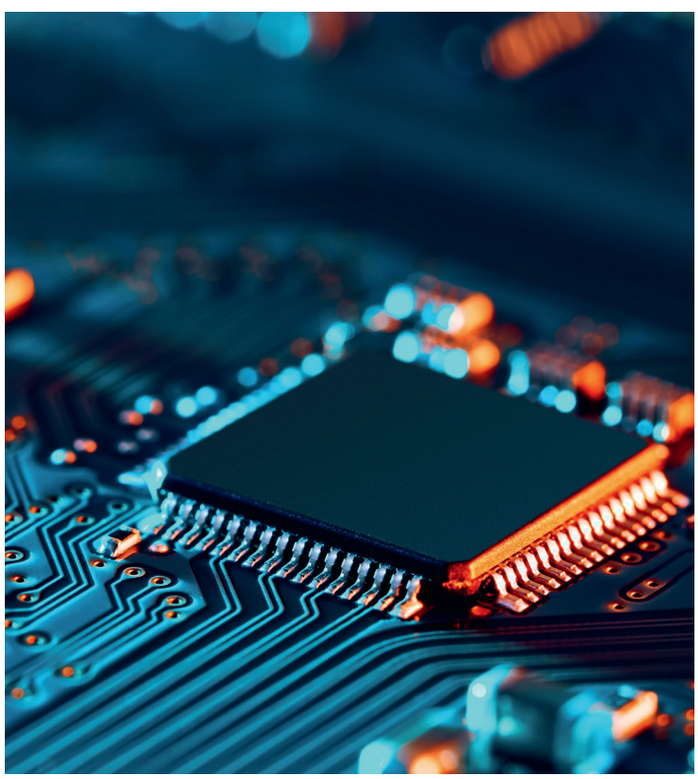
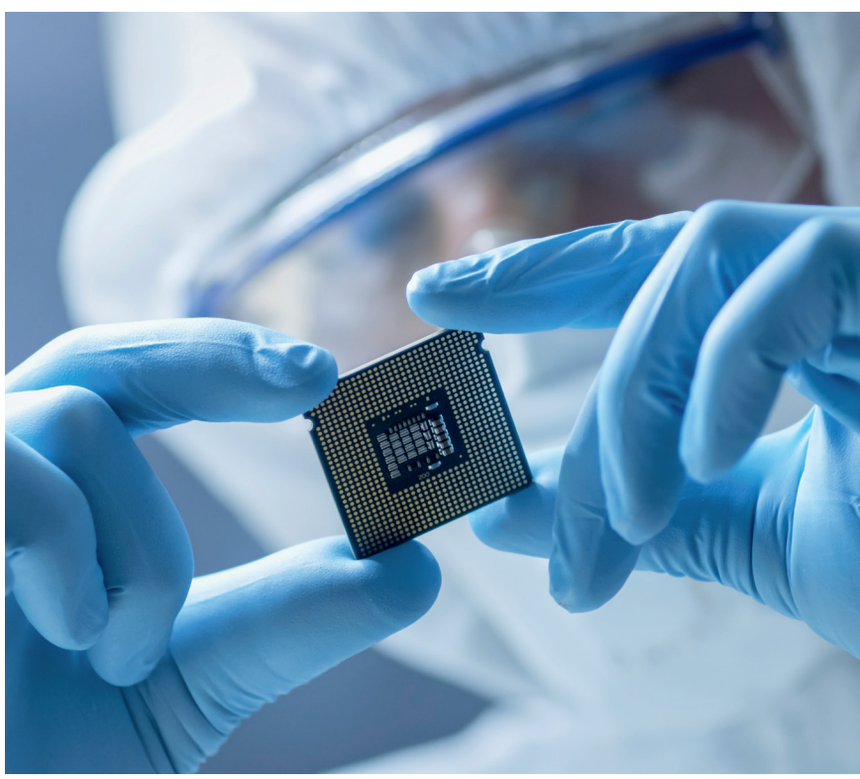
Heraeus

Precious Metals







Engineering Materials for Next-Generation Probing

Probe Performance Starts With Reliable Materials.
It Starts With Heraeus.

Rising Demands in Semiconductor Probing

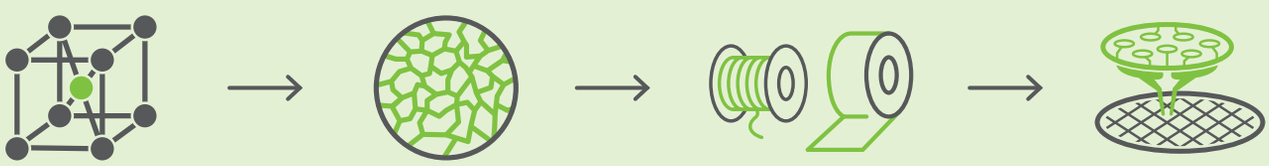
- Smaller pad pitch and higher pin counts
- Increasing current densities
- Demand for stable electrical and mechanical probe performance
- Higher thermal reliability requirements for advanced nodes

Addressing these challenges requires advanced materials, controlled microstructures and precision manufacturing.

Your Probing Technology Platform

Heraeus provides a technology platform combining alloy development, microstructure engineering and precision manufacturing. Materials and semi-finished solutions optimized for advanced semiconductor probing are developed in close collaboration with customers.

Engineering Materials from Alloy Design to Probe Performance



Tailored Precious Metal Alloy Systems → Performance Through Engineered Microstructures → Precision Wire Drawing and Ultra-Thin Foil Rolling → Engineered for Advanced Semiconductor Testing

Heraeus Core Competencies

A Platform for Engineered Probing Solutions

Material Engineering

- Tailored precious metal alloy systems
- Microstructure-driven performance
- Application-specific material design

Application Understanding

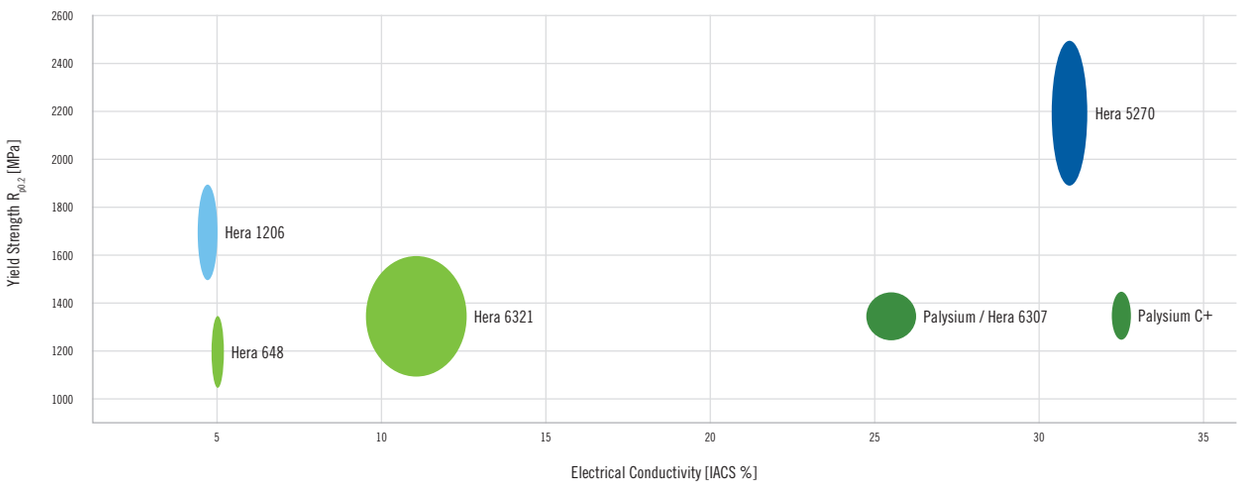
- CCC testing
- CRes measurement
- Fatigue testing
- Reliability evaluation

Ultra-Fine Manufacturing

- Precision wire drawing
- Ultra-thin foil rolling
- Tight semi-finished tolerances, consistent and homogenous product quality

Modular Alloy Families Enabling Tailored Probing Solutions

Technology Landscape - Strength vs. Conductivity

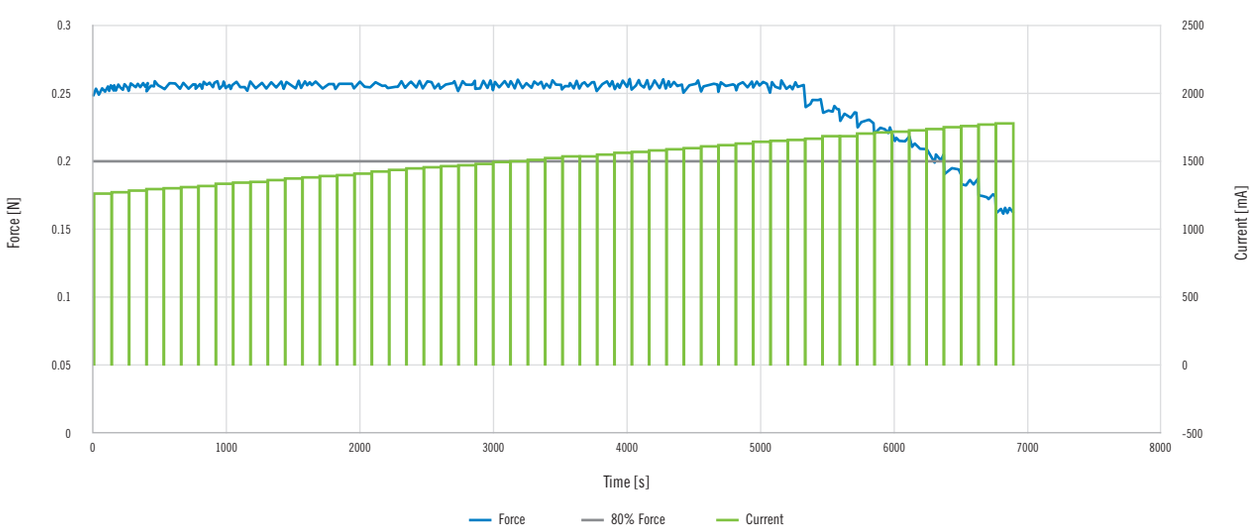


All information provided serves to compare the products and can be adapted to the respective customer requirements on request.

High Current Capability With Stable Mechanical Behavior

Technology Showcase Palysium C+

CCC Measurement*



*according to ISMI reference with: 76 µm diameter, 8 mm length, flat tip and end, OT 100 µm, offset 250 µm, 120 s current cycle time, current increment 0,01A, 10 s off-time between cycles, room temperature

Palysium C+ is a Pd-based alloy engineered for high current carrying capability combined with excellent spring properties.

Its optimized microstructure enables reliable probing at high current densities and smaller probe geometries.

Palysium C+ showcases the combination of innovative material science and precision manufacturing used to engineer advanced probing solutions.

Easy Access:
Heraeus Material Database

Suitable precious metals and alloys are listed in the Heraeus Material Database which offers highest efficiency in material choice:

- **Quick and Easy Access**
  No registration required, browse materials right away
- **Transparency**
  Find the right material by setting filters, e. g. applications
- **Comparability**
  Compare up to 4 materials and find out how they perform, e. g. electrical resistivity, Young's Modulus, thermal conductivity

Simply scan the QR code and get to know our products.

Need Personal Advice?
Contact Our Experts at Heraeus

Simply scan the QR code and get in touch with our sales team.

www.heraeus.pm/probing
precious.metals@heraeus.com