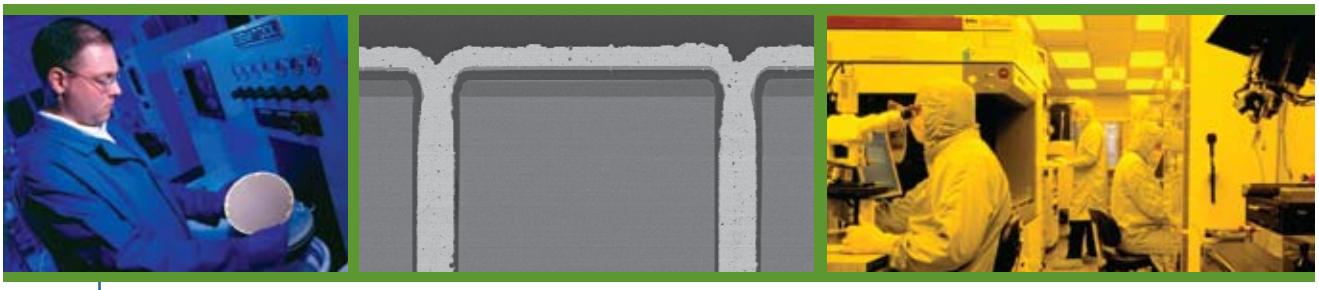
Custom Microfabrication and Post-CMOS Wafer Processing



RTI International is a leader in the research, development, and prototyping of innovative materials, microstructures, and devices. Our labs are equipped with a wide variety of fabrication tools and processing capabilities.

RTI clean rooms and laboratories are professionally staffed with experienced scientists, engineers, technicians, and managers from a wide range of technical disciplines and industry backgrounds.

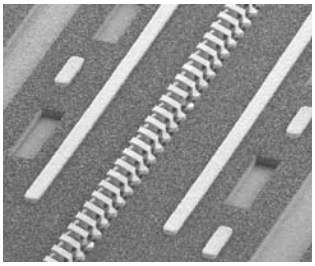
Technology Programs

Currently, we are focused on the development of numerous materials and electronics technologies, including

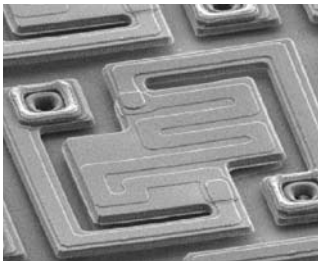
- 3D integration
- Flip chip
- Wafer-level packaging (WLP)
- Post-CMOS wafer processing
- Silicon interposers / silicon circuit boards
- Micro-electromechanical systems (MEMS)
- Flexible displays and electronics.

Microfabrication Capabilities

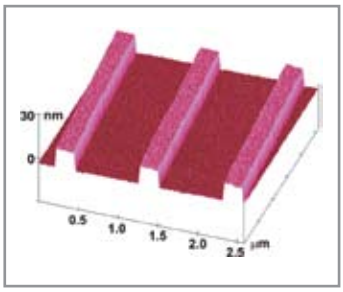
- Photolithography (thin and thick resists)
- Wet and dry etching
- Silicon and oxide deep reactive ion etch (DRIE)
- Evaporated and sputtered thin films
- PECVD oxides and nitrides
- MOCVD conformal copper films
- Spin-on polymers (e.g., polyimides, BCB)
- Parylene organic dielectric films
- Plated metals / TSV fill plating

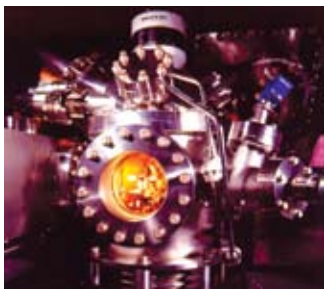


Micro helix-based 650-GHz BWO development with Teraphysics, Inc.



Resistive IR emitter array pixel, fabricated for Santa Barbara Infrared, Inc.





Analytical Lab Capabilities

The analytical laboratory at RTI includes a diverse range of techniques for the characterization of defects, topography, surface analysis, thin film composition, microstructure, semiconductor characterization, failure analysis, and other materials properties.

- Scanning electron microscopy (SEM)
- Energy dispersive spectroscopy (EDS)
- Auger electron spectroscopy (AES)
- X-ray photoelectron spectroscopy (XPS)
- Atomic force microscopy (AFM)
- Fourier-transform infrared spectroscopy (FTIR)
- X-ray fluorescence (XRF)
- X-ray radiographic imaging
- Sample cross-sectioning

Clients and Technology Partners

RTI develops advanced technologies for a wide variety of commercial, government, and academic clients. We support R&D for companies of all sizes, ranging from venture-funded start-ups to Fortune 100 companies. Recognizing the sensitivity of our private-sector clients' intellectual property, RTI typically works under strict nondisclosure agreements. RTI's Center for Materials and Electronic Technologies has over 25 years of experience in the development of advanced technology (prior to 2005, as part of MCNC Research and Development Institute).

More Information

Dean Malta
Center for Materials and Electronic Technologies
Phone: +1.919.248.8405
E-mail: dmalta@rti.org

RTI International
3040 Cornwallis Road, PO Box 12194
Research Triangle Park, NC 27709-2194 USA

RTI 6260 0509