Big Solutions to Your Smallest Problems

In the life sciences marketplace, your biggest problem might be really small — like 2 microns. At Resonetics, we’re experts in providing solutions to your smallest problems.

We know how critical size and precision are when you’re filtering individual blood cells, administering drugs through the microscopic holes of a balloon, or inserting an intricate stent into an artery. You can depend on our expertise in laser micromachining polymers, metal and glass to help fabricate diagnostics and devices with the smallest possible features.

Laser Micromachining Leadership

Resonetics is the leader in laser micro manufacturing polymers for the life sciences industry. Our expertise is unmatched, and we offer the world’s largest capacity of ultrafast laser workstations serving the industry.

With more than 28 years of experience building systems and a dedicated development lab staffed with PhDs, optical scientists and automation experts, we take a holistic approach to address critical design requirements with a cost-effective and repeatable approach.
## Capabilities

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Laser cutting</td>
<td>Cutting, sizing, skiving, singulation, edge refinement and de-gating of components and devices</td>
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<tr>
<td>Laser drilling</td>
<td>The only viable way to produce tight-tolerance holes, down to 1 micron in diameter</td>
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<tr>
<td>Laser ablating</td>
<td>Removal of material layer-by-layer, where each layer can be as small as 0.1 micron</td>
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<td>Laser welding</td>
<td>Low heat input, high precision, and fully automated metal joining</td>
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<td>Surface texturing</td>
<td>Alteration of 2-D surfaces, such as flat films, or 3-D surfaces such as implants, catheters, or balloons</td>
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<td>Bioresorbable scaffolds</td>
<td>Precision cutting of scaffolds/stents in a Class 8 cleanroom</td>
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<td>High volume production</td>
<td>Tight-tolerance, micromachined components produced in high volumes</td>
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<tr>
<td>System design/fabrication</td>
<td>Purpose-built production lines that meet specific client needs for precision and cost-effectiveness</td>
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## Expertise in Many Life Science Markets

- **Interventional therapies**, encompassing cardiovascular, peripheral artery disease, neurovascular and renal denervation. Examples of our work in these areas include laser cutting bioresorbable scaffolds, drilling holes in drug-eluting balloons, and skiving catheters.
- **Diabetes care**, where laser cutting, stripping and drilling can all assist in the fabrication of glucose sensors and insulin infusion sets.
- **In vitro diagnostics**, a market in which highly precise laser technology, especially laser drilling, is an attractive manufacturing method to meet the feature sizes and tolerances at the cellular level. The devices include consumable cartridges and molecular bioreactors.
- **Electronic implants** such as pacemakers, spinal cord stimulators and cochlear implants, all of which benefit from laser micromachining for precise fabrication and tiny features.
- **Ophthalmology**, where implants are used to treat various conditions. Laser micromachining is essential for miniaturizing implant components with absolute precision.
- **Orthopaedics** includes implants for which laser micromachining is ideally suited for surface modification with dimensions from tens to hundreds of micrometers.
- **Drug delivery** devices have become smaller and more sophisticated, making laser micromachining, particularly laser drilling, essential for fabricating features like micron-size, repeatable holes with programmable taper and hole profile in polymer films.

## Large, Modern Facilities

Resonetics now has four world-class manufacturing facilities in Boston, Dayton, San Diego and Costa Rica. The facilities have robust ISO-13485:2003 certified quality systems and lean six-sigma practices – all reasons why you can rely on Resonetics as your manufacturing partner for the entire product lifecycle.

## Quality and Innovation

Quality is a critical component of life science manufacturing. We emphasize total customer satisfaction, continuous improvement and defect prevention through a robust, data driven, QSR and cGMP (current good manufacturing practices) compliant quality system. We are ISO 13485:2003 certified.

Our commitment to innovation includes investing five to six percent of our revenues each year in R&D. With seven patents issued, others pending and a large number of idea disclosures under review, our team has a demonstrated ability to develop novel solutions to solve manufacturing challenges.

Contact Resonetics to learn how we can provide big solutions to your smallest problems.

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We Bring Your Designs to Light

The 8,000-sq. ft. Lightspeed ADL offers resources focused on process development, prototyping and pilot production needs. Housing five different laser technologies and fourteen laser workstations, and staffed by a dedicated team of application development engineers and technicians, the LightSpeed ADL is a world-class resource for laser micro manufacturing.

In 2016, Resonetics will increase its Lightspeed ADL capacity with the addition of 8,000 sq. ft. in the Dayton facility.