



11839 Sorrento Valley Rd.
San Diego, CA 92121
www.aculon.com



Fast Facts

Founders:	Eric L. Bruner
Date Founded:	2003
Employees:	15
Headquarters:	San Diego, CA
Revenue:	N/A
University:	Princeton University
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$800,000

Aculon, Inc. commercializes unique surface and interfacial coatings leveraging nanotechnology discoveries made at Princeton University. The Company's technology enables coatings to outperform all known alternatives in characteristics such as adhesion, stain resistance, scratch resistance and water and oil repellency.

The company's technology is exceptionally versatile and enables several platforms of high-value commercial opportunities. Currently Aculon is focused on two platforms: (1) easy-clean, anti-smudge coatings for eyeglasses and other optical surfaces such as flat panel displays, and stainless steel; and (2) coatings that boost adhesion strength to difficult-to-adhere-to surfaces such as glass, certain metals and plastics.

The Story Behind the Company

The story of Aculon begins with the quest of Dr. Jeffrey Schwartz, Princeton chemistry professor, who sought to understand why orthopedic implants often failed after only 10-15 years of use. He wanted to see if new approaches to modification of the surfaces of implant materials could be achieved to improve their lifetimes. The discoveries of his research team, including Aculon founder Eric Bruner, have led to a new world-wide approach for surface modification of oxide-coated metals and metal oxides.

Together, Dr. Schwartz and Bruner invented new surface chemistry to control interfacial properties of indium tin oxide (ITO). This scheme was novel in its ability to attach molecules with tunable properties thereby controlling the properties of the electrode itself. Funding from the National Science Foundation supported the research behind the discoveries and technologies that led to Aculon.



5885 Hollis St.
Emeryville, CA 94608,
<http://amyris.com>



Fast Facts

Founders:	Jay Keasling, Jack D. Newman, Kinkead Reiling, Neil Renninger
Date Founded:	2003
Employees:	397
Headquarters:	Emeryville, CA
Revenue:	\$73.7M in FY2012
University:	University of California, Berkeley
Federal Funding Agency:	Department of Defense (Office of Naval Research) National Science Foundation
Initial Research Funding:	\$360,000

Amyris is a renewable products company providing sustainable alternatives to a broad range of petroleum-sourced products. Amyris applies its industrial synthetic biology platform to convert plant sugars into a variety of molecules -- flexible building blocks that can be used in a wide range of products.

Biofene is Amyris's brand of a long-chain, branched hydrocarbon molecule called farnesene (trans- β -farnesene). This building block molecule forms the basis for a wide range of products from specialty products such as cosmetics, perfumes, detergents and industrial lubricants, to transportation fuels such as diesel and jet fuel.

The company's first product was artemisinic acid, which is used to make malaria drugs. A variety of new molecules with different applications are under development.

The Story Behind the Company

Professor Jay D. Keasling of the University of California, Berkeley and his research group, including postdoctoral fellows Jack Newman, Kinkead Reiling and Neil Renninger, developed the company's foundational method. This platform technology uses synthetic biology to turn microbes such as bacteria and yeast into factories that overproduce compounds based on isoprenes/terpene chemical building blocks. Their research was funded by the National Science Foundation and Department of Defense through the Office of Naval Research.

UC Berkeley filed patents on the basic method, and through a series of contracts, sub-contracts, and funding from the Bill and Melinda Gates Foundation, ensured that the final artemisinin-based malaria treatments would be available at a low cost to those in 88 economically disadvantaged countries. The "humanitarian use" clauses in the contracts, along with the associated IP management strategies and business models, were recognized through a "Patents for Humanity" award from the U.S. Patent and Trademark Office to UC Berkeley in 2013.



130 Robin Hill Road #300
Goleta, CA 93117
www.aurion.com



Fast Facts

Founders:	John Bowers Alexander Fang
Date Founded:	2007
Employees:	20
Headquarters:	Santa Barbara, CA
Revenue:	N/A
University:	University of California, Santa Barbara
Federal Funding Agency:	Department of Defense (Army Research Office)
Initial Research Funding:	\$5.1M

Aurion is a privately held company located in Santa Barbara, CA. The hybrid silicon photon integration platform the company is commercializing will enable a new generation of integrated photonic devices.

Aurion is partnering with system integrators to create new systems on chips that can provide a massive (>10x) reduction in size and weight over discretely implemented designs while providing improved power, cost, and reliability by eliminating unnecessary packaging and optical connections. In November 2011, Aurion was awarded a \$13.9M R&D contract from the U.S. Department of Defense.

The Story Behind the Company

The fundamental technology for Aurion's silicon photon integration platform was originally developed at the University of California, Santa Barbara, where company founder John Bowers is a professor of electrical and computer engineering and of materials and co-founder Alexander Fang received his M.S. and Ph.D. in electrical engineering. While at UCSB, Dr. Fang developed the hybrid silicon laser platform, demonstrating the first electrically pumped lasers on silicon. The work at UCSB that led to the development of Aurion's technology was supported by approximately \$5 million in grants from the Army Research Office.



11119 North Torrey Pines Road, Suite 200

La Jolla, CA 92037

www.ligand.com

www.captisol.com



Fast Facts

Founders:	Peter Higuchi, Roger Rajewski, Valentino Stella, Diane Thompson
Date Founded:	1993
Date Acquired:	2011
Acquiring Company:	Ligand Pharmaceuticals, Inc.
Employees:	N/A
Headquarters:	La Jolla, CA
Revenue:	\$31.4 million in FY2012
University:	University of Kansas
Federal Funding Agency:	National Institutes of Health
Initial Research Funding:	\$40,000

CyDex is a specialty pharmaceutical company that owns the powerful Captisol® drug formulation technology platform. Cydex has been a wholly owned subsidiary of Ligand Pharmaceuticals since 2011. Captisol is a patented, chemically modified cyclodextrin. This unique technology has enabled six FDA-approved products, including Onyx Pharmaceuticals' Kyprolis®, Baxter International's Nexterone®, BMS's injectable Abilify, Pfizer's Vfend® IV and IM Geodon, as well as a veterinary product, injectable Cerenia, also sold by Pfizer. These products are treatments for multiple myeloma, ventricular fibrillation, schizophrenia and fungal infections.

In addition, the company is supporting drug development efforts with more than 40 other companies worldwide. CyDex maintains patents in the United States and worldwide for its Captisol technology, Captisol manufacturing and Captisol-enabled products, as well as a comprehensive Captisol Drug Master Files (DMF) that is used by partners when filing for regulatory approval with regulatory agencies.

The Story Behind the Company

Valentino Stella, a Distinguished Professor of pharmaceutical chemistry at the University of Kansas, developed the chemical agent Captisol in his lab, assisted by KU graduate student Roger Rajewski. Captisol significantly enhances the solubility, stability, and dosing of injected medical compounds. The research that enabled this discovery was funded initially in part by the National Institutes of Health. During his tenure as director of KU's Center for Drug Delivery Research (1989-99), Dr. Stella received numerous patents and co-founded three spin-off companies, including CyDex Pharmaceuticals.



1606 Willow Lane
Davis, CA 95616
<http://dysonics.com/>



Fast Facts

Founders:	V. Ralph Algazi, Robert Dalton Jr., Richard O. Duda
Date Founded:	2011
Employees:	9
Headquarters:	San Francisco, CA
Revenue:	N/A
University:	University of California, Davis
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$1.3M

Dysonics is an innovator in audio technology. The company redefines the way people listen to sound on headphones by capturing, recording and reproducing spatial sounds otherwise not available to provide a feeling of "being there." Dysonics technology, specifically developed for headphone listening, is based on several years of university research on spatial sound that led to several patents licensed to or owned by the company.

The company's first product is a mobile application, Rondo™, designed to bring audio to life and provide smartphone listeners a new way to experience sound.

The Story Behind the Company

The company originated out of the University of California, Davis technology incubator known as the Engineering Translational Technology Center (ETTC). UC Davis Professor Vidal Ralph Algazi and researchers Richard Duda and Dennis Thompson developed a simple and radically new method to improve the realism of sound with all its spatial characteristics. This invention has a broad range of applications for either live or recorded sound. The technology accounts for dynamic effects caused by the motion of a listener. Until now, this sense of complete immersion in the environment was not possible. The technology overcomes major limitations of existing spatial sound technologies for headphones and open new opportunities for applications.

The initial research and development that led to the creation of Dysonics was supported by four grants from the National Science Foundation over a period of nine years.

Dysonics investors include Rawah Partners LLC and other private Angel investors.



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6755 Hollister Avenue, Suite 200

Goleta, CA 93117

www.eucalyptus.com



Fast Facts

Founders:	Richard Wolski
Date Founded:	2009
Employees:	60
Headquarters:	Goleta, CA
Revenue:	N/A
University:	University of California, Santa Barbara
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$769,555

Eucalyptus has developed flexible private and public cloud computing systems and software. In just a few years, Eucalyptus has grown to more than 60 employees. It has raised \$55.5M in funding from primarily California venture sources. There are over 25,000 Eucalyptus deployments across the globe and there have been more than 100,000 downloads of their open source software.

The Story Behind the Company

Eucalyptus Systems, Inc. began as a research project at the University of California, Santa Barbara led by Dr. Rich Wolski and funded by an exploratory grant of \$769,555 from the National Science Foundation. The NSF grant was given to Dr. Wolski to allow him to explore novel programming and techniques for large-scale computational grid applications. By fall of 2007, his work had already produced new systems for the Linked Environment for Atmospheric Discovery (LEAD) weather forecasting system and promised to revolutionize the world of "cloud computing." Eucalyptus Systems, Inc. was formed in 2009 based on Wolski's groundbreaking research.



10520 Wateridge Circle
San Diego, CA 92121
www.genomatica.com



Fast Facts

Founders:	Bernhard Palsson Christophe Schilling
Date Founded:	2000
Employees:	70
Headquarters:	San Diego, CA
Revenue:	N/A
University:	University of California, San Diego
Federal Funding Agency:	National Science Foundation National Institutes of Health (Institute of General Medical Sciences)
Initial Research Funding:	\$2.2M

Genomatica is working to transform the chemical industry by delivering new manufacturing processes that enable its partners to produce the world's most widely-used chemicals from renewable feedstocks, with better economics and greater sustainability than petroleum-based processes.

Using its proprietary biotechnology platform, the company creates fermentation-based manufacturing processes designed to convert a range of renewable feedstocks into target chemicals that meet industry specifications for large, established markets. Among its first target chemicals are butanediol, or BDO, and butadiene.

The Story Behind the Company

As a graduate student, Genomatica CEO Christophe Schilling studied under Bernhard Palsson, the Galetti professor of bioengineering in the Department of Bioengineering at the University of California, San Diego Jacobs School of Engineering. After receiving his Ph.D. in 2000, Schilling founded Genomatica with licensed technology developed in Palsson's lab.

The initial research and development behind this technology was undertaken at the UCSD with five grants totaling \$2.2 million from the National Science Foundation and National Institute of General Medical Sciences, part of the National Institutes of Health.

Since founding, Genomatica has raised \$125 million in venture financing.

HIPERWALL

see the big picture

2807 McGaw Ave
Irvine, CA 92614-5835
www.hiperwall.com



Fast Facts

Founders:	Steve Jenks, Sung-Jin Kim
Date Founded:	2008
Employees:	5
Headquarters:	Irvine, CA
Revenue:	N/A
University:	University of California, Irvine
Federal Funding Agency:	National Science Foundation
Initial Research Funding:	\$393,533

Hiperwall makes it simple to build high performance, scalable video wall from ordinary computers, ordinary monitors and an ordinary LAN. Hiperwall's software solution can display a wide variety of content with unmatched speed, flexibility and functionality in extremely high-resolution. It uses proprietary technology and an easy-to-use interface to transfer data from any laptop or desktop PC directly to a wall of monitors, which can be installed in any size and configuration. The Hiperwall system is installed in hundreds of locations around the world for a variety of different applications, including command-and-control rooms, airports, trading floors, aerial imaging, education environments, and medical and scientific imaging, among others.

The Story Behind the Company

Hiperwall, Inc. is a University of California, Irvine (UCI) spinoff established to commercialize video wall display technology based on research at UCI's California Institute for Telecommunications and Information Technology (Calit2).

In 2004, researchers at Calit2 secured a \$393,533 National Science Foundation grant to build a tiled display wall for visualizing massive data sets. The team was led by former assistant professor Falko Kuester and included electrical engineering and computer science professor Steve Jenks and postdoctoral researcher Sung-Jin Kim. They developed the middleware and software for the distributed computing and rendering display system and would end up founding Hiperwall.

The project took shape over a year and was unveiled in the summer of 2005: a 23x9-foot, 50-screen display that allowed researchers to view their data as a single, full-screen visual or as a series of smaller images displayed simultaneously for comparison purposes. At the time, the Highly Interactive Parallelized Display Wall – HIPerWall, as it was known – was the world's highest-resolution grid-based system, providing a total resolution of 200 million pixels.

HIPerWall quickly became a boon for researchers and a popular destination for visitors to the building. Jenks and Kim recognized the presence of a commercial market and started Hiperwall Inc. in 2008 with CEO Jeff Greenberg at the helm.

HOLOMIC LLC

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10955 Le Conte Ave., Suite 17

Los Angeles, CA 90024

www.holomic.com



Fast Facts

Founders:	Gilbert Hakim Neven Karlovac Aydogan Ozcan
Date Founded:	2011
Employees:	8
Headquarters:	Los Angeles, CA
Revenue:	N/A
University:	University of California, Los Angeles
Federal Funding Agency:	Department of Defense National Institutes of Health NASA
Initial Research Funding:	N/A

Holomic LLC was formed to turn simple cell phones into powerful microscopes using advanced BioPhotonics technologies developed at the University of California, Los Angeles (UCLA). Two of the company's technologies are the Holomic Rapid Diagnostic Reader (HRDR), an economical handheld reader enabling more reliable lateral flow immunoassay tests, instant access to electronic health records, and real-time, wide-area diagnostic data collection, and the LUCAS (Lens-free Ultra wide-field Cell Monitoring Array Platform based on shadow imaging), which can be used to mathematically reconstruct the microscopic image of an object without any lenses. The result is an inexpensive, small, and robust portable microscope that can be used anywhere.

Holomic's technologies will find widespread applications in telemedicine, mobile health, scientific research, point-of-care diagnostics, diagnostics for global health and pathology. The company's mission is to commercialize LUCAS and other advanced photonics to benefit societies in the United States and other developed countries as well as resource-limited countries globally.

The Story Behind the Company

The technologies at the core of Holomic were developed in the world-renowned research laboratory of Aydogan Ozcan, a professor at UCLA's Henry Samueli School of Engineering and Applied Science and Holomic founder and director. His research at UCLA has been supported by the National Institutes of Health, NASA, and the U.S. Department of Defense.



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www.amgen.com

Fast Facts

Founders:	Leon Chen Daria Mochly-Rosen
Date Founded:	2002
Date Acquired:	2012
Acquiring Company:	Amgen
Employees:	N/A
Headquarters:	Thousand Oaks, CA
Revenue:	N/A
University:	Stanford University
Federal Funding Agency:	National Institutes of Health
Initial Research Funding:	\$35M

KAI Pharmaceuticals, a wholly owned subsidiary of Amgen since 2012, is a drug discovery and development company with multiple, novel clinical-stage programs in the areas of cardiovascular disease, kidney disease and pain. At the time of its acquisition by Amgen, the company was developing an experimental treatment for secondary hyperparathyroidism in patients with chronic kidney disease who are on dialysis.

The Story Behind the Company

The original platform technology that spawned KAI Pharmaceuticals in 2002 was based on peptide research from the lab of Dr. Daria Mochly-Rosen at Stanford University. Basic research over 10 years in Dr. Mochly-Rosen's lab had resulted in the discovery of a series of molecules that work by selectively targeting a family of proteins called Protein Kinase C (PKC). Originally, Dr. Mochly-Rosen hoped to license the technology to an existing company for drug development. However, these companies had tried and failed to make PKC-targeting drugs in the past. They could not be convinced that the novel set of drug candidates from Stanford were able to zero-in on individual PKC family members and avoid the unwanted side effects that caused problems with previous drug candidates. So with assistance from Stanford's Office of Technology Licensing, Dr. Mochly-Rosen and co-founder Leon Chen became entrepreneurs. Chen had just completed his Ph.D. in molecular pharmacology from Stanford University.

The foundational research behind KAI was supported by grant funding from the National Institutes of Health.



Illuminating X-Ray Science

370 Portage Avenue
Palo Alto, CA 94306 USA
www.lynceantech.com



Fast Facts

Founders:	Roderick Loewen, Jeffrey Rifkin, Ronald Ruth
Date Founded:	2002
Employees:	20
Headquarters:	Palo Alto, CA
Revenue:	N/A
University:	Stanford University
Federal Funding Agency:	National Institutes of Health, Department of Energy (Office of High Energy Physics)
Initial Research Funding:	N/A

Lyncean Technologies, Inc. has developed a miniature synchrotron x-ray source, the Compact Light Source, to better see and understand the sub-microscopic details of our physical and biological world.

The Compact Light Source (CLS) is a breakthrough technology that addresses the increasing demand for access to high-quality X-rays by offering a synchrotron x-ray source for local laboratory applications. The CLS provides scientists with access to local, on-demand synchrotron light, allowing for an unprecedented new level of productivity. The CLS opens a broad range of X-ray science, from structural biology and biomedical imaging, to pharmaceutical and chemical sciences, to semiconductor metrology and nanotechnology.

The Story Behind the Company

In 1996, while working on basic accelerator technology at SLAC National Accelerator Laboratory, professor Ronald Ruth and then-Stanford-student Zhirong Huang invented a way to shrink synchrotrons – particle accelerators that produce intense X-ray beams – from the size of a stadium to the size of a small car. The initial research was undertaken at SLAC as part of basic research funded by the U.S Department of Energy Office of High Energy Physics. Later, then-Stanford-student Roderick Loewen explored the idea in detail and did experiments concerning the laser technology necessary for this type of miniature synchrotron. The Compact Light Source developed by Lyncean is a spinoff of this basic research which was licensed from Stanford.

Lyncean Technologies, Inc. was founded specifically to develop the Compact Light Source. The three co-founders were SLAC professor Ronald Ruth, former SLAC engineer Jeff Rifkin and Dr. Rod Loewen. In 2002 the company opened an R&D manufacturing plant employing up to 20 people. In late 2012, the company sold its first Compact Light Source to the Center for Advanced Laser Applications in Germany. SLAC is operated by Stanford University for the U.S. Department of Energy.

PICARRO

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3105 Patrick Henry Dr.
Santa Clara, CA 94054
www.picarro.com



Fast Facts

Founders:	Barbara Paldus, Richard Zare
Date Founded:	1998
Employees:	94
Headquarters:	Santa Clara, CA
Revenue:	N/A
University:	Stanford University
Federal Funding Agency:	Department of Energy
Initial Research Funding:	

Picarro's singular mission is to produce the world's highest performance and easiest to use gas analyzers. The company's ultra-precise, easy-to-use and portable gas concentration and stable isotope analysis instruments are fully integrated with a powerful, cloud-based geo-informatics platform, P-Cubed[®] - the Picarro Processing Platform.

The company's high-precision gas analyzers and optical stable isotope measurement instruments are used in a wide variety of scientific and industrial applications, including: atmospheric science, air quality, greenhouse gas measurements, natural gas leak detection, food safety, hydrology, ecology and more. Deployed in places as diverse as the Greenland Ice Cap, a volcano in Nicaragua, research ships, and U.S. Coast Guard airplanes, Picarro's analyzers are unparalleled in their precision, ease of use, portability and reliability.

The Story Behind the Company

Picarro was founded based on work conducted in Richard Zare's laboratory at Stanford University's Department of Chemistry on travelling wave cavity ring-down spectroscopy, a highly sensitive technique that enables measurement down to the parts per trillion levels. The research led by Zare at Stanford was supported by the Department of Energy. Zare serves as a scientific advisor to Picarro.

Dr. Barbara Paldus, an inventor who earned her M.S. and Ph.D. in electrical engineering at Stanford, became the Chief Technology Officer of the start-up, originally called Informed Diagnostics, Inc. The company spent several years developing the technology and looking for an application that could generate a significant market opportunity, eventually becoming Picarro, Inc.

Today, Picarro is pioneering a unique intersection of hardware, software and cloud-based computing unlike anything being done today and are transforming how world-class scientific and regulatory compliance measurements are made, and more importantly, who makes them. The company's instruments were at the 2012 Olympics in London, measuring the air pollution in the city. They are now the leading provider of stable isotope and gas concentration measurement instruments and geo-informatics to the science community. They received the World Economic Forum 2012 Technology Pioneer award.



4767 Nexus Centre Drive
San Diego, California 92121
www.senomyx.com



Fast Facts

Founders:	Roger Tsien Charles Zuker
Date Founded:	1998
Employees:	112
Headquarters:	San Diego, CA
Revenue:	\$31.3 M (2012)
University:	University of California, San Diego
Federal Funding Agency:	National Institutes of Health (National Institute on Deafness and Other Communication Disorders)
Initial Research Funding:	\$2.03M

Senomyx is discovering and developing innovative flavor ingredients for the food, beverage, and ingredient supply industries. The company's key flavor programs focus on the discovery and development of savory, sweet and salt flavor ingredients that are intended to allow for the reduction of MSG, sugar and salt in food and beverage products. In addition, Senomyx has a bitter blocker program to reduce or block bitter tastes and thereby improve the taste characteristics of foods, beverages and pharmaceutical products. Senomyx also has a cool flavor program for the discovery of novel flavor ingredients intended to provide a cooling taste effect for confectioneries, foods and beverages, as well as oral care and OTC healthcare products.

Senomyx has collaborative agreements with global food, beverage, and ingredient supply companies, some of which are currently marketing products that contain Senomyx's flavor ingredients.

Eleven Senomyx flavor ingredients have received regulatory approvals in the U.S.; many of these have also been granted approval in additional countries.

The Story Behind the Company

The proprietary taste science technologies at the root of Senomyx were discovered through research led by Charles Zuker, a professor of biochemistry and neuroscience at the University of California, San Diego. Zuker's research discovered taste receptors for four of the five tastes (sweet, sour, bitter and savory) as well as the fact that each taste cell is hardwired for one taste. Scientists used to think that every taste bud could pick up on all five tastes, and that a different signal would be sent to the brain for each one. His work was supported by grants from the National Institute on Deafness and other Communication Disorders, part of the National Institutes of Health.



What life should sound like

560 S. Winchester Blvd., Suite 500
San Jose, CA 95128 USA
www.soundcure.com



Fast Facts

Founders:	Fan-Gang Zeng
Date Founded:	2009
Employees:	30
Headquarters:	San Jose, CA
Revenue:	N/A
University:	University of California, Irvine
Federal Funding Agency:	National Institutes of Health
Initial Research Funding:	\$2M

SoundCure, Inc. is a privately held medical device company whose mission is to revolutionize the treatment of tinnitus and provide relief to the millions of people suffering its effects.

SoundCure is actively developing technology that was first pioneered at the University of California, Irvine (UCI) as a treatment to quiet the ringing in their patient's ears. S-Tones® are the foundation of the SoundCure Serenade® technology. Research has shown that these temporally patterned sounds can produce synchronized, robust neural activity in the auditory cortex. The technology does not require sounds louder than the tinnitus being treated and uses customized sound frequencies and pulsed tones to counter the effects of tinnitus. The technology has been shown to provide long-term suppression of tinnitus through as little as one treatment.

The Story Behind the Company

The treatment system grew out of a research project headed by SoundCure founder Dr. Fan-Gang Zeng, a bioengineer and director of the Hearing and Speech Lab at UC Irvine. In 2006, Zeng and colleagues at UCI began working with a patient with a cochlear implant who was suffering from tinnitus. Traditional stimulation approaches were attempted, but failed to provide relief. A low frequency electric stimulus was presented via the cochlear implant. This discovery led to the creation of S-Tones, the foundation of the SoundCure Serenade technology. The National Institutes of Health provided core support for research leading to the technology that was eventually transferred to SoundCure.

Allied Minds, a seed investment corporation specializing in early stage university business ventures, partnered with UCI to establish SoundCure, Inc. to commercialize Feng's novel acoustic therapy for the treatment and suppression of tinnitus.



6950 Hollister Avenue, Suite 104
Goleta, CA 93117
www.spectrafluidics.com

Fast Facts

Founders:	Carl Meinhart Seung Joon Lee Brian Piorek
Date Founded:	2007
Employees:	N/A
Headquarters:	Goleta, CA
Revenue:	N/A
University:	University of California, Santa Barbara
Federal Funding Agency:	Department of Defense (Air Force Office of Scientific Research, Army Research Office), National Science Foundation
Initial Research Funding:	\$430,000

SpectraFluidics is developing products that rapidly and accurately detect chemicals (such as explosives, illicit drugs, or melamine) at extremely low levels (parts-per-trillion). These products can be used in the field under adverse conditions. In 2010, they attracted an investment in In-Q-Tel, the venture arm of the Central Intelligence Agency. More recently, SpectraFluidics won a \$1.3M contract from the U.S. Department of Homeland Security's Transportation Security Agency (TSA).

The Story Behind the Company

Spectrafluidics is based on research that was developed in Dr. Carl Meinhart's laboratory at University of California, Santa Barbara. The company was founded when world class scientists from UCSB teamed up with investment partners from Cycad Group and an experienced leadership team based in Santa Barbara.

The foundational technologies for SpectraFluidics automated detection and screening products were developed at UCSB with support from the Department of Defense and the National Science Foundation.



Redefining Energy Efficiency

115 Castilian Drive
Goleta, CA 93117

www.transphormusa.com



Fast Facts

Founders:	Umesh Mishra Primit Parikh
Date Founded:	2007
Employees:	75+
Headquarters:	Goleta, CA
Revenue:	N/A
University:	University of California, Santa Barbara
Federal Funding Agency:	Department of Defense (Office of Naval Research, Air Force Office of Scientific Research)
Initial Research Funding:	\$9.4M

Transphorm is redefining electric power conversion by leveraging breakthroughs in modern materials. Transphorm's ultra-efficient power modules eliminate up to 90 percent of all electric conversion losses. From HVACs to hybrids; servers to solar panels, Transphorm enables significant energy savings across the grid.

The Story Behind the Company

Transphorm's efficiency breakthrough comes in the form of a revolutionary material known as Gallium Nitride, or "GaN", which switches at far higher frequencies than traditional components. This superior material, coupled with innovative circuit design, enables the world's most efficient, most compact, and most cost-effective power conversion technology. Transphorm CEO and co-founder Dr. Umesh Mishra, a professor in the Electrical and Computer Engineering Department at the University of California, Santa Barbara, was recognized in 2007 for his development of gallium nitride electronics. Transphorm was originally based on research that came out of Dr. Mishra's laboratory. Company President and co-founder Dr. Primit Parikh received his Ph.D. in electrical and computer engineering at UCSB and is an expert in the area of GaN materials, devices and circuits. Dr. Parikh was a student of Dr. Mishra while earning his doctorate at UCSB in 1998.

The foundational work that led to the inventions being commercialized by Transphorm was done at UCSB with support from the Department of Defense through the Office of Naval Research and the Air Force Office of Scientific Research.



4040 Del Rey Avenue, Suite 1
Marina Del Rey, CA 90292
www.tribogenics.com



Fast Facts

Founders:	Carlos Camara Dale Fox Robert Volkel
Date Founded:	2011
Employees:	15
Headquarters:	Marina del Rey, CA
Revenue:	N/A
University:	University of California, Los Angeles
Federal Funding Agency:	Department of Defense (DARPA)
Initial Research Funding:	\$500,000

Tribogenics is a transformative X-ray technology company developing affordable and highly portable solutions for materials analysis and imaging. The Tribogenics range of X-ray sources includes the X-Change™ cartridge, the world's smallest turnkey X-ray source designed for use in revolutionary new XRF systems. Tribogenics technology is based on a DARPA-funded initiative that originated at UCLA and the company is venture-backed by prominent investors, including Peter Thiel's Founders Fund.

The Story Behind the Company

The technologies behind Tribogenics are based on research led by UCLA professor of physics Seth Putterman who is an advisor to the company. Tribogenics disruptive technology uses static electricity rather than the high-voltage transformers used in traditional X-ray sources. Dr. Putterman's research on X-ray emission from triboelectrification was funded by the Department of Defense through the Defense Advanced Research Projects Agency. Carlos Camara, a high density physicist, was a core member of the research team and serves as Chief Scientist at Tribogenics.

In September 2012, Tribogenics announced a \$6.2 million investment by Founders Fund, and the company had previously received \$2.5M in funding from Flywheel Ventures and other angel investors.