

DRIVING DISCOVERY

2017 APS/CNM USERS MEETING

EXHIBITORS/SPONSORS

**Full sponsor of the
2017 APS/CNM Users Meeting**



Exhibitors

Advanced Design Consulting USA, Inc.
 Aerotech, Inc.
 Agilent Technologies-Vacuum
 Alan Burrill Technical Sales
 Andor Technology
 Applied Diamond, Inc.
 Applied Vacuum Technology/Anderson Dahlen
 attocube systems Inc.
 CAEN Technologies
 Carl Zeiss Microscopy, LLC
 Carl Zeiss SMT GmbH
 CINEL STRUMENTI SCIENTIFICI SRL
 COSMOTEC, Inc.
 Ebara Technologies, Inc.
 FMB Oxford
 Goodfellow Corporation
 Hirox-USA, Inc.
 Hiwin Corp.
 Huber Diffraction USA
 incoatec GmbH
 InfraTec infrared LLC
 Instrument Design Technology Ltd.
 InSync, Inc.
 JJ X-Ray
 Johnsen Ultravac A Division of Johnsen Machine Company Limited
 KOHZU Precision | Daniel F Crews, LLC
 Kurt J. Lesker Company
 McCrone Group
 MEWASA AG
 Midwest Vacuum, Inc.
 Mirion Technologies (Canberra)
 MKS Instruments, Inc.
 MW Industries, Inc. Bellowstech
 neaspec GmbH
 Newport Corporation
 Pfeiffer Vacuum
 PI (Physik Instrumente) L.P.
 Princeton Instruments
 Quantum Design, Inc.
 Quantum Detectors Ltd.
 Queensgate
 Rayonix, L.L.C.
 RaySpec Ltd.
 Rigaku Innovative Technologies, Inc.
 RSA, Inc.
 SAES Group
 Scienta Omicron Inc
 SPECS Surface Nano Analysis, Inc.
 Spellman High Voltage Corp.
 Starrett, Tru-Stone Technologies
 Sydor Instruments, a Sydor Technologies Company
 TDK-Lambda Americas High Power Division
 Tek-Matic Inc.
 Teledyne LeCroy
 THE FREDERICKS COMPANY / TELEVAC
 Toyama Co., Ltd.
 USI Corporation
 VACOM Vakuum Komponenten & Messtechnik GmbH
 Vacuum One
 XIA LLC
 Zygo Corporation

Advanced Design Consulting USA, Inc. 126 Ridge Road Lansing, NY 14882 Tel: (607) 533-3531 http://www.adc9001.com	ADC USA (ITAR & ISO9001:2008 certified), located near Cornell University in Ithaca, New York, is a leading developer and supplier of complex scientific components and instruments for large government laboratories and corporations around the world. Founded as a privately held company in 1995, ADC has grown into one of world's leading technology companies and has enjoyed 18 straight years of business growth and profitability with more than 500 customers located in over 26 countries. ADC's vision is to be a global leader in the development and manufacturing of innovative products for scientific and research markets. Our engineering design, and build staff are well acquainted with the special requirements of the synchrotron and FEL scientific community such as shielding, stability, precise motion, and UHV. ADC's engineering staff approaches each new application by thoroughly understanding the risks, challenges, and requirements. Our intimate knowledge of synchrotron operations gives us a solid basis for "filling in the blanks" in our customer's specifications. For more information on "ADC" please go to: http://www.adc9001.com .
Aerotech, Inc. 101 Zeta Drive Pittsburgh, PA 15238 Tel: (412) 963-7470 https://www.aerotech.com	Since 1970, Aerotech has designed and manufactured the highest performance motion control and positioning systems for our customers in industry, government, science, and research institutions around the world. Aerotech's precision motion control products provide the critical performance for today's demanding applications in markets such as research and development, laser processing and micromachining, aerospace and defense, medical device and life sciences, semiconductor and flat panel, photonics, automotive, data storage, electronic manufacturing and test, assembly, and others requiring high-precision, high-throughput motion solutions. Aerotech manufactures motion control and positioning systems and components including automated direct-drive and piezo nanopositioners; hexapods; planar and rotary air-bearing stages; high-speed gantries; mechanical-bearing linear, rotary, and lift stages; brushless linear and rotary servomotors and drives; stand-alone and software-based motion controllers; goniometers; galvanometers; and gimbals/optical mounts. Our expertise and ability to provide custom motion components and systems is unmatched. Our custom manufacturing capability is further augmented by our long history of providing vacuum-prepped and cleanroom-ready positioning systems and components. Aerotech operates full sales and service facilities in the U.S., U.K., Germany, Japan, Taiwan, and China, as well as representatives across the globe.
Agilent Technologies-Vacuum 121 Hartwell Avenue Lexington, MA 02421 Tel: (781) 860-5426 http://www.agilent.com	Agilent Technologies (formerly Varian, Inc.) offers a complete vacuum solution for any application. Product lines include: Ion pumps, turbo-molecular pumps, dry roughing pumps, gauging, hardware, leak detectors, and custom pumping systems. Agilent also offers a variety of training courses to suit the need and expertise level of all vacuum users.
Alan Burrill Technical Sales 8129 W. Lincoln Avenue West Allis, WI 53219 Tel: (414) 327-9055 http://www.aburrilltechsales.com	Alan Burrill Technical Sales is a manufacturer's representative firm that specializes in the area of vacuum and thin film process instrumentation, pumps, components and equipment. We have teamed up with leading manufacturers of these products to offer cutting edge products to universities, government laboratories and private industry. Featuring products from MPF Products, Osaka Vacuum Products, Atlas Technologies, as well as other vacuum component vendors.
Andor Technology 300 Baker Avenue Concord, MA 01742 Tel: (860) 290-9211 http://www.andor.com	Andor Technology is an industry-leading manufacturer of high-energy imaging cameras and research grade spectrographs. Aside from our fast, sensitive, and super-cooled cameras used in labs throughout the world, we also offer a highly customized, customer-controlled design and implementation process.
Applied Diamond, Inc. 3825 Lancaster Pike Wilmington, DE 19805 Tel: (302) 999-1132 http://usapplieddiamond.com	Applied Diamond fabricates parts from single-crystal and polycrystalline diamond for synchrotron applications including windows, brazed windows, heat spreaders, detectors, beam detectors, and filters. We have expertise in diamond polishing for ultra-smooth surfaces, metallization for bonding and mounting of windows to flanges. The detectors can be provided with electrical leads and contacts. Diamond grades include electronic, optical, thermal and mechanical with thermal conductivity as high as 2000 w/mK and purity of < 1 ppb.

<p>Applied Vacuum Technology/ Anderson Dahlen 88 E 8th St. Waconia, MN 55387 Tel: (952) 442-7005 http://www.appliedvacuum.com</p>	<p>Applied Vacuum Technology, LLC (AVT) manufactures custom chambers, welded assemblies, flanges and precision components for high and ultra-high vacuum (UHV) systems. Since 1989, AVT has been fabricating custom products for vacuum applications including surface analysis, mass spectroscopy, epitaxial and thin film deposition, UHV feedthroughs, and accelerator beam lines. AVT's quality system is certified to ISO 9001:2008 and Nuclear Quality Assurance (NQA-1). Our engineers use SolidWorks® 3D design software which enables rapid visualization of your requirements, and quick translation to manufacturing drawings. Also, COSMOSXpress® stress analysis utility helps identify unacceptable chamber wall deformations and weld stresses. AVT has the technical experience and knowledge necessary to fabricate even the most complex vacuum chambers and assemblies in stainless steel, aluminum, titanium, and other alloys. Find further information here: www.appliedvacuum.com AVT is a division of Anderson Dahlen Inc., a full-service contract manufacturer for custom fabricated stainless steel products, equipment and process systems. For over 70 years, ADI has provided world-class metal fabrication and equipment integration services to leading multinational companies in a variety of industries. Our capabilities for metal forming, large scale machining, and critical welding are ideal for manufacturing vacuum chambers. Learn more here: www.andersondahlen.com.</p>
<p>attocube systems Inc. 2020 Stuart Street Berkeley, CA 94703 Tel: (510) 649-9245 http://www.attocube.com</p>	<p>attocube offers piezo positioning stages as well as complete piezo motion solutions with highest precision and extremely rugged yet cost efficient design. The IDS3010 is the latest addition to attocube's patented fiber-based interferometer technology which enables displacement and vibrometry measurements in various applications and in extreme environmental conditions.</p>
<p>CAEN Technologies 1140 Bay Street Suite 2C Staten Island, NY 10305 Tel: (718) 981-0401</p>	<p>CAEN Technologies is the North American branch of CAEN group and distributes both CAEN Nuclear and CAEN ELS products in USA and Canada. Based in New York City, CAEN Technologies makes the 35 years' experience of CAEN in the Physics community available to North American users, with both catalog products and customized solutions. CAEN Nuclear solutions focus mainly on physics experiments and applied physics applications, from low- and high-voltage power supplies for radiation and particle detectors to analog and digital DAQ. CAEN ELS instead provides advanced and highly specialized products for the particle accelerator community, from magnet power supplies to diagnostic electronic instrumentation, from precision current sensors to complex beamline electronic systems.</p>
<p>Carl Zeiss Microscopy, LLC 1 Zeiss Drive Thornwood, NY 10594 Tel: 800-233-2343 https://www.zeiss.com/microscopy/us/home.html</p>	<p>Throughout the world, ZEISS stands for the highest quality and reliability. Carl Zeiss Microscopy is part of the Carl Zeiss group, a leading organization of companies operating worldwide in the optical and optoelectrical industry. As the world's only manufacturer of light, x-ray, and electron/ion microscopes, Carl Zeiss Microscopy offers tailor-made systems for industry, materials research and academia. A dedicated and well-trained sales force, an extensive support infrastructure and a responsive service team enable customers to use their ZEISS microscope systems to their full potential.</p>
<p>Carl Zeiss SMT GmbH Rudolf-Eber-Str. 2 Oberkochen 73447 Tel: +497364205971 https://www.zeiss.com/semiconductor-manufacturing-technology/home.html</p>	<p>Carl Zeiss SMT is a reliable partner for the manufacturing of synchrotron and other x-ray mirrors. We implement powerful metrology and manufacturing techniques for the upcoming generation of highest-quality optical components for synchrotron radiation and other x-ray applications. With new, state-of-the-art metrology, even aspheric mirror types can be manufactured in the <100 nrad slope error range.</p>
<p>CINEL STRUMENTI SCIENTIFICI SRL Via Dell'Artigianato 14-14A Vigonza, Italy 35010 Tel: +39(049)725022 http://www.cinel.com</p>	<p>Strumenti Scientifici CINEL (http://www.cinel.com/) is an established supplier of components and integrated systems for synchrotron, XFEL light sources, and particle accelerators. We provide innovative and tailored solutions into integrated UHV systems, complete beamlines, beamline components (mirror systems, monochromators, etc.). Our combination of in-house expertise in precision design and engineering, metrology, assembly and integration, vacuum and, last but not least, our precision manufacturing capabilities allowing us to produce every single part of our instruments, make Strumenti Scientifici CINEL the partner of choice to realize challenging and state-of-the-art instruments for your beamlines.</p>

<p>COSMOTEC, Inc. 229 Polaris Ave. Suite 3 Mountain View, CA 94043 Tel: (408) 428-9741 http://www.cosmotec.us/index.php</p>	<p>THE HIGHEST QUALITY CERAMIC-TO-METAL 25 years of excellence. Now in Silicon Valley. Because cutting corners isn't an option. We, at COSMOTEC, design the highest quality feedthroughs available on the market today. Perfection you can count on our CUSTOM PRODUCTS. Large inventory in Silicon Valley, US and Japan make SAME DAY SHIPPING. We work very closely with our clients, scientists, corporations, researchers, government labs, universities and individuals. Cosmotec respect the accomplishments or achievements with the people involved. We will amaze you with our custom manufacturing capabilities. Whether it is "one quantity" order, Cosmotec will work at its best to not let our clients down. We will "WORK TOGETHER" with our clients and find the best solution. Whether they are isolators, ceramic feedthroughs, coaxial and multi-pin connectors, coaxial connectors, multi-pin connectors, double-ended connectors, floating coaxial connectors, multi-pin connectors, ceramic chambers, beam positioning monitors(BPM), isolator flanges, ceramic isolator flanges, sapphire windows, single-crystal sapphire material, ceramic-to-metal bonding technology, we will provide solutions.</p>
<p>Ebara Technologies, Inc. 51 Main Ave. Sacramento, CA 95838 Tel: (916) 996-1608 http://www.ebaratech.com</p>	<p>EBARA is a global innovator/local provider of vacuum pumps and advanced exhaust management solutions for semiconductor, photovoltaic, thin films, and R&D. EBARA's products are backed by a superior global service network. EBARA continues to expand its role by bringing to the market: Dry Vacuum Pumps, Turbomolecular Pumps, and Point-of-Use Abatement.</p>
<p>FMB Oxford Unit 1 Ferry Mills Osney Mead Oxford United Kingdom OX2 0ES Tel: +44 (0)1865 320300 http://www.fmb-oxford.com</p>	<p>FMB Oxford is recognised as a leading supplier of instrumentation to the synchrotron community. With over 20 years of experience in the global synchrotron industry we have built a product range from small in-vacuum beam monitors to complete turnkey beamlines and endstations. The latest generation of facilities offer smaller source sizes, higher power densities and increasing beam stability. Our customers are in turn demanding improved figure errors, higher levels of resolution and repeatability, better mechanical stability and thermal management. Deliveries of systems into Petra III at DESY, MAX IV and now the European X-FEL have spurred on these developments and many of the results are now available in technical publications. Visit our stand to discuss performance levels of the latest devices.</p>
<p>Goodfellow Corporation 125 Hookstown Grade Road Coraopolis, PA 15108 Tel: 1-800-821-2870 http://www.goodfellowusa.com</p>	<p>Goodfellow supplies small quantities of metals, alloys, ceramics and polymers to meet the research, development and specialist product requirements of science industry worldwide. The company offers two distinct services: The first meets the needs of those customers who require small quantities of our standard catalog products for immediate shipment. The second is for those who require larger quantities or further processing of the company's standard products, or who need products, which fall within our general supply capabilities. Our web catalog lists a comprehensive range of materials in many forms including rods, wires, tubes and foils. There is no minimum order quantity and items are in stock ready for immediate shipment worldwide with no extra shipping charge. Custom-made items are available to special order.</p>
<p>Hirox-USA, Inc. 100 Commerce Way Hackensack, NJ 07601 Tel: (201) 342-2600 http://www.hirox-usa.com</p>	<p>Hirox-USA is the pioneer of 3D Digital Microscopes. Our digital microscope system is a combined tool that is able to do observation, measurement, recording, and see things "as they are." Since we started our business almost 30 years ago as a pioneer of digital microscope, our primary purpose hasn't changed. "Make it possible to observe anything that our users are looking for." Hirox's high-quality optical, mechanical, and lighting designs have the capability of achieving an expansive magnification range from 0x-7000x. Hirox's systems incorporate a variety of features including live, full focus, real-time 2D/3D tiling with an auto XY stage.</p>
<p>Hiwin Corp. 12455 Jim Dhamer Drive Huntley, IL 60142 Tel: (847) 827-2270 http://www.hiwin.com/index.html</p>	<p>HIWIN Corp. manufactures an extensive line of linear motion components, positioning systems and complete automation solutions. Supplying superior quality at the most competitive prices, HIWIN offers a variety of precision ground and rolled ballscrews, linear guideways, electric actuators, ballscrew-driven stages, rotary and linear motors and articulating robots with fully integrated value-added features.</p>
<p>Huber Diffraction USA 8344 West Ave. C4 Lancaster, CA 93536 Tel: (949) 391-7755 http://www.huberusa.com</p>	<p>HUBER Difraktionstechnik GmbH designs and manufactures high-precision positioning systems primarily used for x-ray diffraction in laboratories and at synchrotron beam sources. Other application fields are diffraction experiments with neutrons, laser technology, astronomy and precise measurement technology. Your Decision for Precision.</p>

<p>incoatec GmbH Max-Planck-Str. 2 Geesthacht, Germany 21502 Tel: +49 4152 889 381 https://www.incoatec.de</p>	<p>Incoatec develops and manufactures sophisticated multilayer and total-reflection x-ray optics and microfocus x-ray sources for in-house crystallography and synchrotron applications. For synchrotron beamlines we offer total reflection optics, double crystal multilayer monochromators, multi-stripe multilayers and 2-dim beam shaping Montel Optics (nested Kirkpatrick-Baez mirrors). For the suppression of parasitic scattering Incoatec offers scatterless pinholes SCATEX, which enable compact beam paths and small beam stops in small angle set-ups. Other applications may also benefit from SCATEX. For the use of the elaborate beamline instrumentation during downtime or for tests and classification of samples for upcoming measurements, we offer the high brilliance microfocus source μS. The μS is an air-cooled x-ray source for diffractometry applications that is available with Cr, Co, Cu, Mo, and Ag anodes. The source is equipped with a two-dimensional beam shaping Montel multilayer optics. Therefore, we can form either a highly collimated beam with a low divergence (below 0.5 mrad) or a focusing beam with higher divergence (up to 10 mrad) and very small focal spots (diameter below 100 μm). In one application at the ALS, the μS is even installed as an additional x-ray beam to the synchrotron. A team of engineers, physicists and chemists with a broad background in all kinds of scientific applications finds the optimal solution also for your specific application with quality Made in Germany.</p>
<p>InfraTec infrared LLC 5048 Tennyson Pkwy. Suite 250 Plano, TX 75024 Tel: (469) 438-9404 http://www.inftratec-infrared.com</p>	<p>The InfraTec infrared sensor and measuring technology company was found in 1991 and has its headquarters in Dresden, Germany. The privately held company employs more than 200 employees and has its own design, manufacturing and distribution capabilities. With its Infrared Measurement business unit, InfraTec is one of the leading suppliers of commercial thermal imaging technology. In addition to the high-end camera series ImageIR[®], InfraTec offers turnkey thermographic automation solutions.</p>
<p>Instrument Design Technology Ltd. Unit 2 Turnstone Business Park Widnes, WA8 0WN UK Tel: 01516014111 http://www.idtnet.co.uk</p>	<p>Instrument Design Technology (IDT) provides the world's synchrotron community with a design and-build resource in state-of-the-art mechanical high-precision instrumentation. IDT is fully compliant with the latest quality management system, ISO-9001. IDT has core competencies in design and build of complex, state-of-the-art, instruments with motion in multiple degrees of freedom, often working in an ultra-high-vacuum (UHV) environment. Complex optical engineering of x-ray and other beamlines is provided, very often with novel concepts being incorporated. We have a growing reputation for novel monochromators with exceptional proven performance in the field.</p>
<p>InSync, Inc. 2511C Broadbent Parkway Albuquerque, NM 87107 Tel: (505) 345-2660 http://www.insyncoptics.com</p>	<p>InSync, Inc. is a custom, high-tech, optical manufacturing company. Our specialty is the unusual, "state of the art" polished optic up to 1500mm in size. Capabilities include computer design, finite element analysis, slicing, grinding, feature machining, etching, bonding, lapping, polishing, coating, and metrology. Polished shapes include cylindrical, spherical, and flat. Substrate Designs include internally cooled, externally cooled, uncooled, rectangular, round, and bendable for other polished shapes. Substrate materials include silicon, glass, and metals.</p>
<p>JJ X-Ray Dr. Neergaards Vej 5D Hoersholm, Denmark 2970 Tel: +45 477-63000 http://www.jjxray.dk</p>	<p>JJ X-RAY is a Danish company that develops, designs, and produces highly specialized components and assemblies for scientific x-ray, synchrotron radiation, and neutron instrumentation. We are widely known for our high-precision and durable JJ X-Ray slits and collimators. Our standard component portfolio is constantly expanding. At present, it also includes: compound refractive lens (CRL) systems, spectrometers, customized positioning, complete beamline solutions, and compact UHV slits. We look forward to continuously providing scientists and engineers around the world with high-performance instrumentation and comprehensive counseling.</p>
<p>Johnsen Ultravac A Division of Johnsen Machine Company Limited 3470 Mainway Burlington, ON, Canada L7M 1A8 Tel: (905) 335-7022 http://www.ultrahivac.com</p>	<p>Since the company's inception as Johnsen Machine Company in 1961, this privately owned firm has enjoyed an enviable reputation for excellence. Now, as Johnsen Ultravac the company continues to uphold and maintain these lofty standards. Transforming customer needs into technically superior machined and manufactured instruments for science, business, and industry, Johnsen Ultravac delivers expert solutions for a variety of applications. From beamline components to linear motion devices, XYZ manipulators, and vacuum systems, Johnsen Ultravac offers a wealth of experience and precision manufacturing capabilities. Whether we provide customized solutions or standard modular components, understanding our clients' critical requirements and responding to their challenges is our mandate.</p>
<p>KOHZU Precision Daniel F Crews, LLC P.O. Box 2804 Evergreen, CO 80437 Tel: (303) 944-1082 https://www.dfcrews.com/kohzu</p>	<p>Kohzu Precision Co., Ltd, supplies industry-leading instrumentation for x-ray experiments, double-crystal monochromators, vacuum components, vacuum and atmospheric STAGES (X, Y, Z, Tip, Tilt & R) and vacuum slits. Daniel F Crews, LLC is the Exclusive North America Distributor for KOHZU Precision, Co., Ltd.</p>

<p>Kurt J. Lesker Company 1925 Route 51 Jefferson Hills, PA 15025 Tel: (412) 387-9007 http://www.lesker.com</p>	<p>Manufacturer/distributor of: standard and custom high vacuum and UHV chambers and subassemblies; standard and custom vacuum hardware; feedthroughs; valves, vacuum pumps of all types. Manufacturer of thin film deposition systems for sputtering, electron beam, thermal evaporation, and Atomic Layer Deposition. Exclusive North American representative for UHV Design Ltd. motion devices.</p>
<p>McCrone Group 850 Pasquelli Drive Westmont, IL 60559 Tel: (630) 887-7100 https://www.mccrone.com</p>	<p>The McCrone Group is internationally recognized as a world leader microscopy and microanalysis and includes McCrone Associates, McCrone Microscopes & Accessories and Hooke College of Applied Sciences. McCrone Associates, Inc. is focused on solving the most difficult materials and particle identification problems along with the day-to-day analysis needs of clinical laboratories, scientific researchers, business organizations, and government agencies worldwide. McCrone Associates' scientists consult direct with clients, and use the most advanced microscopy techniques and instrumentation to solve their problems. McCrone Microscopes & Accessories, LLC is the authorized dealer for Nikon microscopes and measuring equipment, Linkam high temperature and x-ray stages, the JEOL NeoScope benchtop SEM with EDS, HIROX Digital Microscope Systems, digital imaging systems, and a variety of laboratory supplies. The technical sales representatives at McCrone Microscopes are trusted advisors to scientists worldwide. Hooke College of Applied Sciences provides education and training to scientists worldwide, specializing in SEM instruction. Topics covered include light and electron microscopy, spectroscopy, sample preparation, chemistry and laboratory safety, and image analysis.</p>
<p>MEWASA AG Straubstrasse 11 Wangs, Switzerland 7323 Tel: +41 7946 76 51 http://www.mewasa.ch</p>	<p>Mewasa is a Swiss Manufacturer (ISO9001-2008) for precision edge-welded bellows, components, and sub-assemblies. Mewasa's niche is focused toward the rapid delivery from prototype as well as production quantities for our customer. We remain committed and focused on highest quality process manufacturing excellence of precision edge-welded metal bellows.</p>
<p>Midwest Vacuum, Inc. 3244 Highland Ave. Downers Grove, IL 60515 Tel: (630) 323-5399 http://www.midwestvacuum.com/Home.9.0.html</p>	<p>Midwest Vacuum, Inc. is a manufacturer representative company, handling some of the preeminent UHV suppliers. We will exhibit the products of Leybold Vacuum, VAT, Nor-Cal Products, Inc., Laco Technologies, Ametek and others. Midwest Vacuum, Inc. has served the UHV community since 1983.</p>
<p>Mirion Technologies (Canberra) 800 Research Parkway Meriden, CT 06450 Tel: (203) 639-2148 http://www.canberra.com</p>	<p>Canberra, now part of Mirion Technologies, is a leading provider of innovative and cost-effective nuclear measurement solutions and services used to maintain safety of personnel, assess the health of nuclear facilities, and safeguard the public and the environment. Canberra solutions are used in radiochemistry laboratories, health physics applications, nuclear power operations, nuclear safeguards, nuclear waste management, environmental radiochemistry, and other applications.</p>
<p>MKS Instruments, Inc. 2 Tech Drive Andover, MA 01810 Tel: (978) 645-5500 https://www.mksinst.com</p>	<p>MKS Instruments, Inc. is the worldwide leader in technology solutions for thin film, process and industrial manufacturing, environmental monitoring, defense and security, and life sciences and research. We make the instruments, subsystems and process control solutions that enable our customers to measure, control, power, monitor and analyze critical parameters of advanced processes. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas composition analysis, control and information technology, power and reactive gas generation, vacuum technology, photonics, lasers, optics, and motion control.</p>
<p>MW Industries, Inc. Bellowstech 1289 North US Highway 1 Suite 1 Ormond Beach, FL 32174 Tel: (386) 615-7530 https://bellowstech.com/?v=7516fd43adaa</p>	<p>BellowsTech, LLC edge welded metal bellows provide a hermetic, all-metal pressure barrier and seal and provides the most flex in one or more directions within the smallest amount of space of any bellows technology on the market by reaching a 90% stroke length. This flexibility allows for increased expansion and contraction of the bellows. Edge-welded bellows are flexible in design to accommodate round, oval, and rectangular shapes. BellowsTech precision ultra-high vacuum edge welded bellows are able to withstand high vacuum applications with low leak rates to ensure a hermetic seal, and can be customized to the size and shape required of new design or retrofit applications. High vacuum bellows can be configured with a variety of end pieces including end plates for welding, CF flanges, KF flanges, ISO flanges as well as custom designs, from a wide variety of stock materials, including 300 series Stainless Steel, Titanium, Inconel, AM 350 and more. To learn more, visit www.bellowstech.com.</p>
<p>neasppec GmbH Bunsenstrasse 5 Martinsried Bavaria, Germany 82152 Tel: +49 89 45 24206 33 http://www.neasppec.com</p>	<p>See the nanoworld: neasppec introduces the new ultrafast nano-FTIR imaging and spectroscopy tool, with a wavelength-independent spatial optical resolution of 10 nm throughout the VIS and IR spectrum and a temporal resolution <200 fs. This cutting-edge technology allows you to gain new insights into your samples by e.g. time-resolved plasmon interference mapping, chemical nano identification, ultrafast carrier-relaxation dynamics, and many more amazing applications.</p>

<p>Newport Corporation 1791 Deere Ave. Irvine, CA 92606 Tel: (949) 863-3144 https://www.newport.com</p>	<p>Newport, now part of MKS Instruments, is the world's largest photonics company providing innovative solutions and industry leading product brands to multiple markets. Our combined product portfolio includes Corion®, ILX Lightwave™, New Focus™, Ophir, Oriol® Instruments, Richardson Gratings™, and Spectra-Physics® Lasers. We provide complete photonic solutions to make, manage, and measure light.</p>
<p>Pfeiffer Vacuum 24 Trafalgar Square Nashua, NH 03063 Tel: (603) 578-6500 https://www.pfeiffer-vacuum.com/en/</p>	<p>Pfeiffer Vacuum provides vacuum solutions from a single source. In addition to a full range of hybrid and magnetically levitated turbo pumps, our portfolio includes backing pumps, measurement and analysis devices, components as well as vacuum chambers and systems. For over 125 years, Pfeiffer Vacuum has stood for innovative solutions and high-tech products that are used in the analytics, industry, research & development, coating, and semiconductor markets.</p>
<p>PI (Physik Instrumente) L.P. 16 Albert Street Auburn, MA 01501 Tel: (508) 832-3456 http://www.pi-usa.us/index.php</p>	<p>ISO-9001-Certified, Global Leader in Precision Motion Solutions. Piezo Mechanisms, Air Bearings, Hexapods, Photonics Alignment, Nanopositioning, Micropositioning, Piezo Positioning Systems, Linear Motors & Rotary Stages for OEM & Research. Products: Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Tip/Tilt Mirrors; Piezo Transducers, Piezo Actuators; Piezo Motors, Piezo Drivers & Digital Motion Controllers; Voice Coil Actuators, MicroMotion Robots.</p>
<p>Princeton Instruments 3660 Quakerbridge Road Trenton, NJ 08619 Tel: (609) 587-9797 http://www.princetoninstruments.com</p>	<p>Princeton Instruments provides state-of-the-art CCD, sCMOS, ICCD, EMCCD, emICCD, x-ray and InGaAs cameras, spectrometers, spectrographs, imaging systems, optics, and coatings that are key to the success of your application. We take pride in partnering with our customers to solve their most challenging problems in unique, innovative ways. Learn more about the SOPHIA-XO high-sensitivity, high-speed, thermoelectrically-cooled camera that utilizes a back-illuminated CCD without antireflective coating for direct detection of the widest range of x-rays--between ~10 eV and 30 KeV. A rotatable ConFlat® flange with a high-vacuum seal design, as well as software-selectable gains and readout speeds, makes this camera well-suited for UHV applications.</p>
<p>Quantum Design, Inc. 10307 Pacific Center Court San Diego, CA 92121 Tel: (858) 481-4400 http://www.qdusa.com</p>	<p>Quantum Design is the leading manufacturer of automated material characterization systems for the physics, chemistry, and material science research communities. These systems provide temperatures from 0.05 to 1000 K and magnetic fields up to 16 tesla. Our Physical Property Measurement Systems (PPMS®, DynaCool, and VersaLab) provide a wide range of measurements, including: magnetometry (VSM, Torque, DC & AC), electrical transport (DC, AC, Hall effect and critical current), heat capacity, and thermal transport (thermal conductivity, Seebeck coefficient, thermopower). The SQUID-based Magnetic Property Measurement System (MPMS®3) is the industry standard for ultra-sensitive magnetic measurements. All measurement systems are available in cryogen-free versions, eliminating the need for liquid helium. Other products offered include Quantum Design's advanced technology helium liquefiers (ATL80, ATL160), configurable helium recovery systems, and IR and tetra arc crystal furnaces. Quantum Design International also distributes: direct write and 3D thermal scanning probe lithography systems, NanoMOKE, FMR and Terahertz sources/spectrometers, THz-Raman measurement in a cryomagnetic platform, scanning probe and scanning ion conductance microscopes, single photon detectors (SNSPD), educational kits for quantum optics, and magnetic hyperthermia instrumentation.</p>
<p>Quantum Detectors Ltd. R104 RAL Harwell Oxford, OX11 0QX, UK Tel: +44 01235445795 http://quantumdetectors.com</p>	<p>Quantum Detectors principally develops and builds detectors for large scale scientific facilities world wide, but also universities and industry. The technology behind these devices is based on developments at government labs in the UK and internationally.</p>
<p>Queensgate Broers Building JJ Thomson Avenue Cambridge, Cambridgeshire CB3 0FA UK Tel: +44 (0)1223 371 000 http://www.nanopositioning.com</p>	<p>Queensgate specialise in nanopositioning and position sensing solutions for high-tech industries the world over. With the highest stability, performance and reliability to meet individual customer requirements, our solutions have been proven to meet the most challenging demands and environments. Founded in 1978 as a spin-off from Imperial College, London, Queensgate pioneered the use of capacitive metrology for nanopositioning. Headquartered in Cambridge, UK our engineers, scientists and manufacturing experts are at the cutting-edge of research. We can advise on the best use of our market-leading products and provide bespoke systems. We specialize in developing custom solutions for performance-critical OEM applications. By encouraging engineering partnerships, we can produce the best solution at the lowest cost, in the shortest timeframes. Our products include; one, two and three channel stages, controllers and software, two-plane cylindrical piezo stacks, capacitive plates with a variety of optional coatings, nano mechanisms—including tip/tilt, objective lens positioners, nano sensors—including single probe and others. If you have a positioning application where you require a nanopositioning solution find out more at nanopositioning.com.</p>

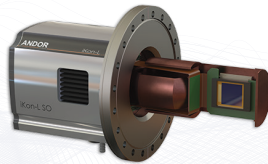
<p>Rayonix, L.L.C. 1880 Oak Ave. Suite 120 Evanston, IL 60201 Tel: (847) 869-1548 http://www.rayonix.com</p>	<p>Rayonix detectors are used worldwide for serial crystallography at synchrotron and XFEL sources. The high-speed, high-resolution x-ray detectors have no count rate limitation, no gaps in the imaging area and only 1msec dead time. Special detector geometries allow the direct beam to pass through, for simultaneous SAXS/WAXS data collection. Talk to us about custom versions of our detectors. Rayonix is also developing exciting new pixel array technology suitable for the new pulse patterns at updated synchrotron sources and seeks input from potential users.</p>
<p>RaySpec Ltd. Sirius House, Watery Lane Wooburn Green High Wycombe, United Kingdom HP10 0AP Tel: +441628533060 https://www.rayspec.co.uk</p>	<p>RaySpec Ltd (formerly SGX Sensortech) is a specialist x-ray detector manufacturer with a long history of excellence in custom designs for synchrotron applications. RaySpec has successfully designed and manufactured many different single- and multi-element SDD detectors which have achieved high performance specifications.</p>
<p>Rigaku Innovative Technologies, Inc. 1900 Taylor Road Auburn Hills, MI 48326 Tel: (248) 232-6400 https://www.rigaku.com/en</p>	<p>With 30+ years producing multilayer x-ray optics, Rigaku Innovative Technologies designs and builds high-performing innovative instruments, multilayer coatings and advanced focusing monochromators for beamlines and endstations, including our 2-D Kratky SAXS camera. Capabilities include multiple-stripe DMMs, graded d-spacings and picometer-precise coatings on complex optics to 1300mm. NEW: Now refurbishing used optics! Regain your investment in the expensive optical substrate. High-precision Johansson crystals now available.</p>
<p>RSA, Inc. 602 Sidwell Court St. Charles, IL 60174 Tel: (630) 377-5385 http://rsainfo.com</p>	<p>Since 1966, RSA has been providing complete automation solutions to manufacturers across Illinois, Indiana, and Wisconsin. With comprehensive product offerings and engineering services, we are confident that our sales and engineering staff can diagnose your automation problem and provide the perfect solution that is cost effective, easy to use, and most importantly works.</p>
<p>SAES Group 1122 E. Cheyenne Mtn. Blvd. Colorado Springs, CO 80906 Tel: (719) 576-3200 https://www.saesgetters.com</p>	<p>SAES® Group is the world leader in a variety of scientific and industrial applications where stringent vacuum conditions are required. For more than 70 years, the NEG technology has provided optimal performance for ultrahigh vacuum and high vacuum systems. Because of the small size and high performance, NEG pumps are widely used in mass spectrometry requiring high performance in a lightweight low volume package. Since these pumps do not always require continuous power, it makes it ideal for portable mass spectrometers, requiring constant pumping during transportation or continued pumping during power failures. Visit our booth to see our expanded line of pumps!</p>
<p>Scienta Omicron Inc 240 St. Paul Street, Suite 301 Denver, CO 80206 Tel: (720) 350-5000 http://www.scientaomicron.com/en/home</p>	<p>Scienta Omicron is the world's premier supplier of instrumentation for electron spectroscopy, UHV SPM, MBE and multi-technique systems. Our product line includes state-of-the art ARPES analyzers with unchallenged energy and angle resolution, including the innovative DA30, which employs deflectors for full cone acceptance. Our SPM product line includes the gold-standard LT and VT STM models, our QPlus AFM technology, and new products including the cryogen-free Fermi DryCool and the Tesla JT. New lab-based tools of interest to the APS/CNM community would include our ambient pressure system (HippLab) our HAXPES system and our high intensity UV and x-ray sources.</p>
<p>SPECS Surface Nano Analysis, Inc. 20 Cabot Blvd. Suite 300 Mansfield, MA 02048 Tel: (508) 618-1292 http://www.specs.com</p>	<p>SPECS manufactures cutting-edge systems and components for surface analysis in UHV, based on methods like XPS, UPS, AES, ISS, STM, LEEM/PEEM, LEED, SIMS, SNMS, and HREELS. We offer a variety of sources for deposition, excitation and charge neutralization as well as analyzers, monochromators, and research microscopes like LEEM and STM. A strong focus of our work is on customized systems combining thin film preparation (MBE) with spectroscopic and microscopic options.</p>
<p>Spellman High Voltage Corp. 475 Wireless Blvd. Hauppauge, NY 11788 Tel: (631) 630-3000 http://www.spellmanhv.com</p>	<p>Spellman is the world's leading independent supplier of precision DC high-voltage power supplies, x-ray generators and Monoblock® x-ray sources for medical, industrial and scientific applications. From our earliest days in the power conversion industry, through today, Spellman has always played a major role in supporting basic and applied scientific research. Collaborating with leading researchers in fields as diverse as physics, chemistry, medicine, biology, electronics, materials, and astronomy, we have developed products that enabled exciting advances in many disciplines. And, in many cases, were subsequently adopted into mainstream industries and applications around the world.</p>
<p>Starrett, Tru-Stone Technologies 1101 Prosper Drive Waite Park, MN 56387 Tel: (320) 251-7171 http://www.starrett.com/tru-stone.com</p>	<p>Starrett Tru-Stone Technologies specializes in precision granite machine bases & assemblies. We partner with you to add expertise in design collaboration, high-quality on-time manufacturing and complex assembly for your precision base. In addition to granite bases, Tru-Stone techs install precision rails, air mounts, brackets, pneumatic systems and cabling. Custom stands are also provided. Materials beyond granite include ceramic, carbon fiber materials.</p>

<p>Sydor Instruments, a Sydor Technologies Company 291 Millstead Way Rochester, NY 14624 Tel: (585) 278-1168 http://sydortechnologies.com</p>	<p>Sydor Instrument's new detection and monitoring products for Synchrotron applications including beam position & flux monitors, silicon strip detectors, and direct detection CCD cameras. We also offer a suite of streak cameras, fast high voltage pulse electronics, and photoemissive detectors. Sydor has a history of developing and commercializing next generation detection technology and specializes in custom diagnostics, custom integration and technology transfer. Need a custom diagnostic? Have a technology ready for transfer? Talk to Sydor today.</p>
<p>TDK-Lambda Americas High Power Division 405 Essex Road Neptune, NJ 07753 Tel: (732) 922-9300 http://www.us.tdk-lambda.com/hp/</p>	<p>TDK-Lambda Americas High Power Division is a manufacturer of Programmable, High Density Power Supplies located in Neptune, New Jersey. The Genesys™ series of Programmable Power Supplies has the highest density in power levels from 750W through 15KW with output ranges up to 600V and 1,000A. TDK-Lambda Genesys™ Series of Programmable Power Supplies has the highest density, making the Genesys™ Series the most complete set of platforms with identical user interfaces. Platforms include 750W, 1500W, 3.3/5kW and 10/15kW Output. Outputs available range up to 600V and 1,000A. In addition to saving space, Genesys™ power supplies contain extensive standard features that provide a new level of performance and flexibility. Also now available: an optional LXI Certified LAN interface provides flexible system integration and functionality.</p>
<p>Tek-Matic Inc. 7316 N. Alpine Rd. Loves Park, IL 61111 Tel: (815) 282-1775 http://tekmatic.com</p>	<p>Tek-Matic has partnered at an extremely high level to help companies research and find the best solutions to achieve their device and system goals. This led to Tek-Matic's ability to find and bring to market cutting edge solutions in many technologies and industries. Tek-Matic is a scalable resource for our partners, working as an extension of their team to research, find, or develop solutions that meet their goals. Tek-Matic is resourceful group known for listening, learning, educating, and solving.</p>
<p>Teledyne LeCroy 700 Chestnut Ridge Rd. Chestnut Ridge, NY 10977 Tel: (800) 553-2769 http://teledynelecroy.com</p>	<p>Teledyne LeCroy is a leading manufacturer of advanced oscilloscopes, protocol analyzers, and other test instruments that verify performance, validate compliance, and debug complex electronic systems quickly and thoroughly. Since its founding in 1964, the Company has focused on incorporating powerful tools into innovative products that enhance "Time-to-Insight." Faster time-to-insight enables users to rapidly find and fix defects in complex electronic systems, dramatically improving time-to-market for a wide variety of applications and end markets. Teledyne LeCroy is based in Chestnut Ridge, N.Y. For more information, visit Teledyne LeCroy's website at teledynelecroy.com.</p>
<p>THE FREDERICKS COMPANY / TELEVAC 2400 Philmont Ave. Huntingdon Valley, PA 19006 Tel: (215) 947-2500 http://www.frederickscompany.com</p>	<p>THE FREDERICKS COMPANY / TELEVAC has been providing innovative vacuum measurement solutions for over 80 years. Our instruments and sensors are regarded as the gold standard in the vacuum industry. TELEVAC's double inverted magnetron patented technology has revolutionized the vacuum market. We have been developing new products to serve the vacuum industry in many of its different and diverse applications such as national laboratories, heat treating, thin film coating, and many others. For more information, contact us at 215-947-2500, or visit our website at www.frederickscompany.com.</p>
<p>Toyama Co., Ltd. 3816-1 Kishi Yamakita-machi Ashigarakami-gun, Kanagawa, Japan 258-0112 Tel: +44 78 0283 2377 http://www.toyama-jp.com</p>	<p>Toyama designs and manufactures ultra-precision systems for experimentation at the cutting edge of science. From its new state-of-the-art headquarters building, the Toyama Monozukuri Center, located some 50 miles west of Tokyo, Toyama's 150 full time staff are working together with scientists and engineers from leading research institutes worldwide to develop instrumentation in fields as diverse as synchrotron radiation, nuclear physics, semiconductor technology and fusion research. Toyama is proud of its traditions of excellence in engineering design and manufacturing. Our extensive workshop facilities and highly trained manufacturing personnel give us very flexible production capabilities and ensures the quality of the components that are built into our systems. Toyama's instrumentation is held in high regard by many engineers and scientists. Toyama's purpose is to continue to support research and development activities at the cutting-edge of science. It is our intention to be the "Best Partner for Scientists."</p>
<p>USI Corporation 600 Hillgrove Ave. Unit 4 Western Springs, IL 60558 Tel: (708) 784-1500 http://www.usicorp.com</p>	<p>USI Corporation is a data storage, protection, and archive solutions provider offering innovative storage technology. Each of our hardware and software products has been carefully chosen to maximize data availability, system performance and business value. USI Corporation has been providing storage solutions to Fermilab and Argonne for almost two decades. See www.usicorp.com for additional information.</p>

VACOM Vakuum Komponenten & Messtechnik GmbH In den Brückenäckern 3 Großlöbichau, Germany 07751 Tel: +49 3641 4275-0 https://www.vacom.de/en/	VACOM ranks among the European market leaders of vacuum technology. Founded in 1992, the family-owned enterprise has grown continuously and today employs more than 180 staff with a high portion being scientists and highly qualified technicians. Our own research and development department is the basis for finding and realizing innovative solutions for the market-driven demands of our partners. Our core areas of expertise are a wide range of vacuum mechanics, vacuum measurement devices, vacuum optics, innovative cleaning and cleanliness measuring processes for UHV, XHV and UCV. Our spacious production and technology center is equipped with latest machinery and includes 800 sqm clean room facilities. VACOM is specialised in custom vacuum components and chambers of stainless steel and aluminium (including UHV/XHV compatible AluVaC UHV/XHV compatible CF flanges and components and VaCFix® clamp chains), innovative vacuum measurement (BARION®, COLDION®) and vacuum optics (viewports and optical fiber feedthroughs). In addition, we provide sophisticated services including innovative technologies for highly demanding cleanliness and low outgassing – certified by the Fraunhofer Clean Price – under a single roof. VACOM is partner of high-tech industries e. g. in the field of analytics, semiconductors including EUV lithography, optics and accelerator technologies as well as research institutes worldwide.
Vacuum One 3717 N. Ravenswood Suite 240 Chicago, IL 60613 Tel: (773) 244-3102 http://www.vacuumone.com	Vacuum One is a Midwest sales representative firm based in Chicago. We represent Edwards Vacuum, MDC Vacuum, Insulator Seal Incorporated, Brooks Automation/CTI-Cryogenics, Brooks Automation/Polycold Systems, MKS Instruments/Granville-Phillips, Gamma Vacuum, KLA-Tencor, Veeco (MBE components), Kaufman and Robinson, Inc. (KRI®), Advanced Energy, Applied Thermal Control, and Angstrom Sciences.
XIA LLC 31057 Genstar Rd. Hayward, CA 94544 Tel: (510) 401-5760 http://www.xia.com	XIA LLC invents, develops, and markets advanced digital data acquisition and processing systems for high rate x-ray spectroscopy at synchrotron facilities and other radiation detector applications in university research, national laboratories, and industry. Our core technology of high rate digital signal processing is applied to a diverse range of products from large multi-channel systems, to benchtop units and compact low power processor cards for handheld instrumentation. Our product features include high rate elemental fast mapping, and data output rates in excess of 3 Mcps (FalconX). In addition to x-ray detector electronics, XIA offers a parallel product line of high speed digital signal processors for gamma detectors used for spectroscopy, timing and coincidence measurements. XIA is based in Hayward, California, on the east side of San Francisco Bay. Our multi-lingual staff currently supports product sales in over 30 countries on six continents.
Zygo Corporation Laurel Brook Road Middlefield, CT 06455 Tel: (860) 347-8506 www.zygo.com	To enable the next generation of synchrotron beamline performance, high-precision UHV position sensors are needed to close the loop for actively adjusted optics. Fiber-based interferometer sensors on the market today do not meet the needs of these synchrotron applications. ZYGO has recently released a new sensor system called ZPS™, which delivers absolute position, rather than relative displacement, with sub-nanometer precision using compact (Ø3 x 27mm) fiber based vacuum compatible sensors. Compared to competing technologies, ZPS provides a lower noise floor (< 0.2 nm RMS at 1kHz bandwidth), over a longer range (1.2 mm), and better measurement stability over time (≤ 1nm/day). ZYGO is a metrology company with a deep understanding of precision engineering and a long history of addressing the most complex metrology challenges. The ZPS sensor system delivers the level of absolute position feedback required for next generation beamline optics, enabling new science and lowering operating costs.



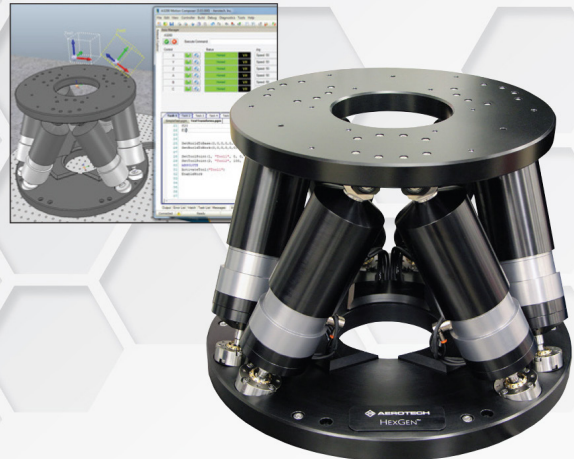
Got a **big** idea?
Let us build it
for you...



Contact our CSR team today
andor.com/contact

ANDOR
an Oxford Instruments company

Unmatched Positioning Performance

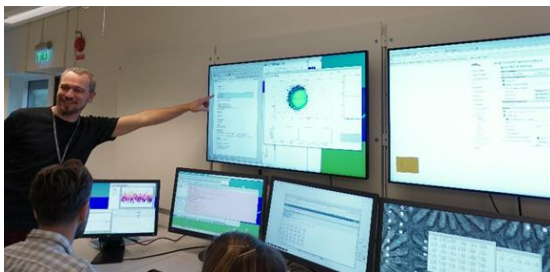


HexGen™ Hexapods by Aerotech
The next-generation in
6 degree-of-freedom positioning

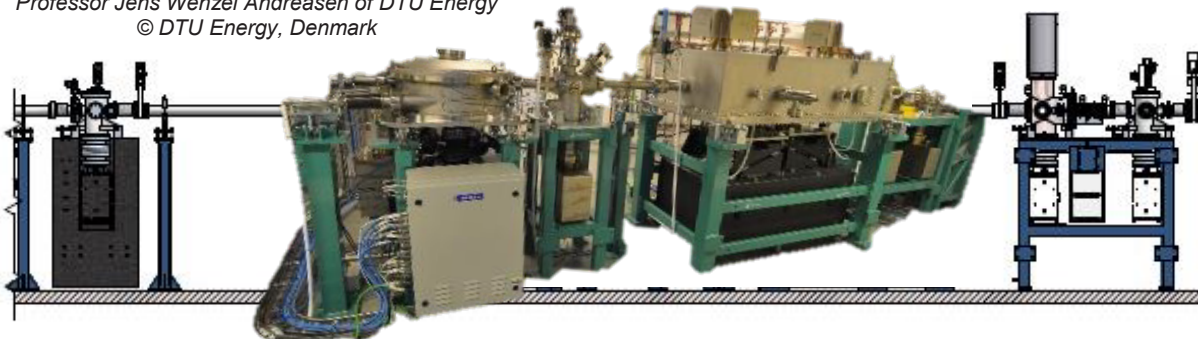
Ph: 412-963-7470
Email: sales@aerotech.com
www.aerotech.com

AEROTECH Dedicated to the
Science of Motion

First experiments at NanoMAX - Dec 2016



Professor Jens Wenzel Andreassen of DTU Energy
© DTU Energy, Denmark



Beamlines • Monochromators • Mirror Systems • Diagnostics • Endstations

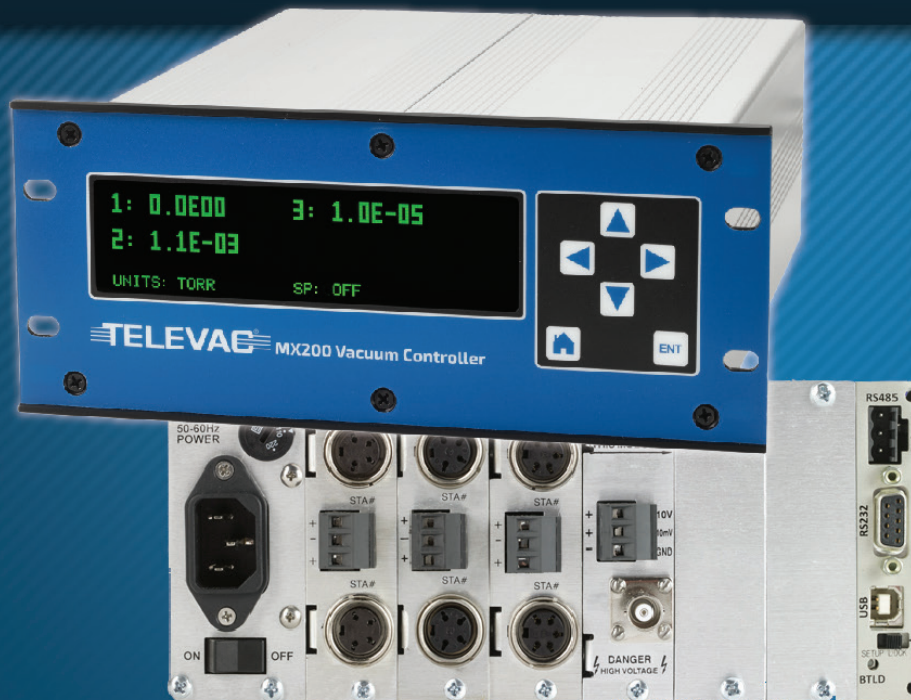
FMB Oxford • Unit 1 Ferry Mills • Osney Mead • Oxford • OX2 0ES • UK • +44 (0)1865 320300 • sales@fmb-oxford.com • www.fmb-oxford.com

FMB Oxford

*Tailor-made technology
from concept to reality*

MX200

Modular Vacuum Controller



- Atmosphere to UHV measurement
- Active gauge and controller solutions
- Analog and digital communications
- High bakeout and radiation resistance

www.frederickscompany.com

(215) 947-2500 • sales@frederickscompany.com

TELEVAC®

A Brand of The Fredericks Company



**Enterprise and Project Specific
Data Storage Solutions For:**

High Performance • High Capacity •
Hybrid and Unified Storage • Storage Virtualization
Backup Software • Archive Solutions • DR • Cloud

Reliable Products. Responsive Service. Proven Innovators.
USI Corporation • 708.784.1500 • www.usicorp.com

Synchrotron Instrumentation 2016

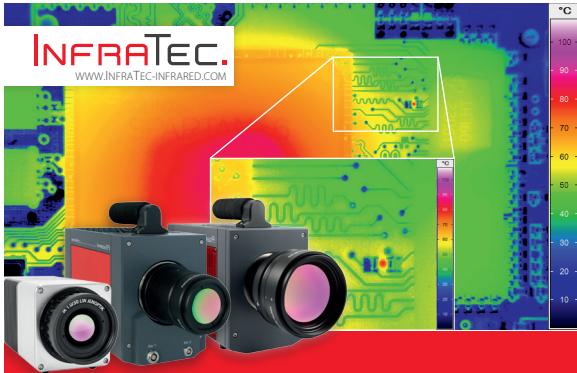


Ion Chambers, High Precision Slits, Filters,
Optics, Precision Engineering System &
Precision Optical Tables






ISO 9001:2008 Certified
www.adc9001.com



**Powerful Thermography Systems –
for Every Ambitious Measuring Task**

- More than 50 different cooled and uncooled camera systems for maximum flexibility
- Detector formats up to (1,920 × 1,536) IR pixels allow analysis of structures of just 1.3 μm
- Thermal resolution up to < 0.015 K supports recording sharp images
- Software packages for powerful data collection
- Expertise based on more than 25 years of experience in micro-thermography

Made in Germany



**YOUR PARTNER FOR X-RAY OPTICS
& MICROFOCUS SOURCES**



SYNCHROTRON OPTICS




Synchrotron Montel Optics Double Crystal Multilayer Monochromators

OUR OPTICS ARE CUSTOM-MADE!

APS	BESSY	DIAMOND
DESY	ELETTRA	CLS
LYNCEAN	PAL	SLS
NIST	NSLS	SESO
PSI	WINLIGHT	
ZEISS		


SCATEX




Scatterless Pinholes MICROFOCUS SOURCES

10 YEARS
4US
Celebrate the power!

www.incoatec.de




Quantum
DETECTORS

CUTTING EDGE TECHNOLOGY
FOR WORLD LEADING LABORATORIES

Xspress 3


- Readout for SSDs and HPGe
- 30X faster than standard readouts
- >4 Mcps output count rate
- Large system compatible
- EPICS and TANGO drivers
- Labview compatible
- 40 units in use at EPICS beamlines



Xspress 3 Mini

- Same performance as stated above
- Portable between detector systems
- 1/8th the size of the Xspress 3
- 1 or 2 channels
- Lower cost

OUR NEWEST AND MOST COMPACT READOUT SYSTEM



Find out more at quantumdetectors.com
E info@quantumdetectors.com T +44 1235 44 5795



**High speed
High resolution
Seamless
X-ray detectors**

rayonix

877 627 9729 | International: +1 847 869 1548
www.rayonix.com

SYDOR
INSTRUMENTS

COMPLEX MEASUREMENTS—CRITICAL RESULTS

A SYDOR TECHNOLOGIES COMPANY

**X-RAY DETECTORS
&
BEAM MONITOR SOLUTIONS**

Spanning the EUV, soft, tender
and hard X-ray regime.

www.sydortechnologies.com



Applied Vacuum Technology offers more than 25 years of experience fabricating custom chambers and related products for high to extreme high vacuum applications. We provide a wide range of products, from large chambers and baseplates to small flanges and precise components. We also provide Engineering consultation for design and manufacturability. Our design and manufacturing resources will help take your requirements from initial concepts, to fully engineered designs, to completed and fully tested products ready for use.



Applied Vacuum Technology, LLC is a division of Anderson Dahlen Inc

Anderson Dahlen has more than 4 decades of experience in custom stainless steel fabrication. Our expertise in metal forming, large capacity machining, and welding are ideal for manufacturing vacuum chambers. We have substantial engineering and manufacturing resources to support custom fabrication requirements for a wide variety of applications.

Optic Coating Capabilities

Rigaku Innovative Technologies

Optic Refurbishment

- Upgrade, Replace or Repair Existing Coatings
- Extend Optic Lifetime
- Reduce Lead Time and Costs



**Damaged multilayer optic before the refurbishment process*



Fully recovered substrate after the refurbishment process

*Results will vary depending on the damage mechanism





www.zygo.com



Dealing with complex position metrology problems?

Visit the ZYGO booth and talk with ZYGO to see how our new **ZPS™ position sensor system** can help!

The ZPS™ system delivers absolute position information with sub-nanometer precision using compact (Ø3 x 27 mm) fiber based vacuum compatible sensors.

ZYGO is a metrology company with a deep understanding of precision engineering and a long history of addressing the most complex metrology challenges.



Zygo Corporation
21 Laurel Brook Road
Middlefield, CT 06455

**New Style PC Edition
3D Digital Microscope
RH-2000**



Alan Burrill Technical Sales

"Instruments and Hardware for Industry and Research"

8129 W. Lincoln Avenue
West Allis, WI 53219

Phone: 414-327-9055
Mobile: 414-651-0695
Fax: 414-327-8131

Alan W. Burrill
Manufacturer's Representative

E-mail: awburrill@earthlink.net
www.aburrilltechsales.com



**UHV & HV
Vacuum Supplier**

- Thin Film Deposition Systems
- Deposition Materials and Supplies
- Vacuum Valves
- UHV Motion & Manipulation Tools
- Vacuum Hardware & Fittings
- Providing Expert Advice & Training

Kurt J. Lesker Company Enabling Technology for a Better World
www.lesker.com

**Precision Motion Instruments
for Cutting Edge Science and Technology**



**Precision Positioning Stages
Highly Configurable!**



**Eight Circle
Diffractometer**

Designed for
Specific
Requirements



Exclusive North America Distributor
Daniel F Crews, LLC
KOHZU@dfcrews.com
http://www.DFCREWS.com/

Kohzu Precision Co., Ltd.
e-sale@kohzu.co.jp
http://www.kohzu.co.jp

IDS3010

Position Sensing 4.0

- 1 pm resolution
- 10 MHz bandwidth
- integrated webserver
- working distance up to 5 m
- 2 m/s target velocity
- surface reflectivity down to 4 %

for more information visit www.attocube.com

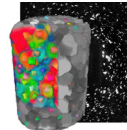


Unlocking crystallographic information in your lab.

ZEISS LabDCT



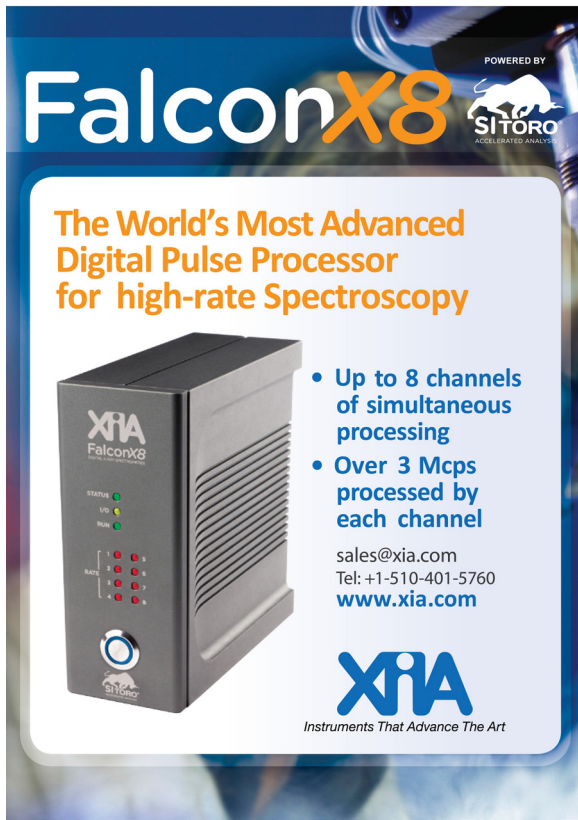
Bringing synchrotron technology to the laboratory



Directly visualize 3D crystallographic grain orientation in a non-destructive tomography environment with LabDCT for ZEISS Xradia 520 Versa 3D X-ray microscopes.

pages.zeiss.com/LabDCT





FalconX8 POWERED BY **SITORO**
ACCELERATED ANALYSIS

The World's Most Advanced Digital Pulse Processor for high-rate Spectroscopy

- Up to 8 channels of simultaneous processing
- Over 3 Mcps processed by each channel

sales@xia.com
Tel: +1-510-401-5760
www.xia.com

XIA
Instruments That Advance The Art



VACUUM ONE

STATE-OF-THE-ART VACUUM SOLUTIONS
COMPLETE SYSTEM CUSTOMIZATION
SUPERIOR CUSTOMER SERVICE

Representing:

Advanced Energy	Kaufman & Robinson
Angstrom Sciences	KLA-Tencor
ATC Chillers	MDC Vacuum Products
CTI-Cryogenics	MKS Instruments/ Granville-Phillips
Edwards Vacuum	Polycold Systems
Gamma Vacuum	Veeco
ISI Feedthroughs	

773.244.3102
www.vacuumone.com
sdix@vacuumone.com

We Are the One for All Your Vacuum Solutions



100 GHz

Oscilloscope Bandwidth



teledynelecroy.com/100ghz



Contact:
Dan Steinken
(317) 855-3446

- Multi-channel operation at the highest bandwidths
- 20 channels @ 100 GHz
 - 40 channels @ 65, 60 or 50 GHz
 - 80 channels @ 36, 30, or 25 GHz



High Voltage Power Supplies for Research

Standard and Custom Products for all Applications



www.spellmanhv.com



Innovative Products for Applications from Atmosphere to XHV



Expertise and Products

- Special components (non-magnetic AluVaC® technology)
- Total pressure measurement equipment
- Electrical feedthroughs
- Viewports and optical fiber feedthroughs
- Ion getter pumps

Services

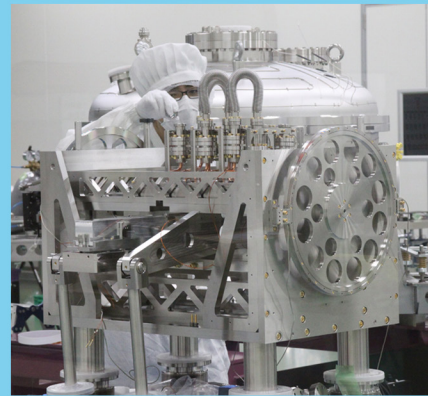
- Ultrafine cleaning (defined Purity Classes)
- Outgassing measurement (defined Vacuum Classes)



VACOM Vakuum Komponenten & Messtechnik GmbH ■ In den Brückenäckern 3 ■ 07751 Großlobichau ■ Germany
 Tel. +49 3641 4275-0 ■ Fax +49 3641 4275-82
 info@vacom-vacuum.com ■ www.vacom-vacuum.com ■ www.vacom-shop.com

Pioneering New Horizons in Science

TOYAMA



Monochromators
 Mirror Systems
 Beam Monitors

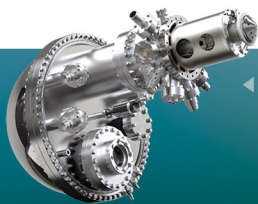
Precision Slits
 Front Ends
 End Stations

www.toyama-en.com

email: sales@toyama-jp.com
carl@toyama-jp.com (USA and Europe)

KREIOS/METIS

HEMISPHERICAL ELECTRON MOMENTUM ENERGY ANALYZER
 / TIME-OF-FLIGHT ELECTRON MOMENTUM MICROSCOPE
 FOR NEXT GENERATION ARPES APPLICATIONS



- ◀ **KREIOS 150**
- μARPES
 - 180° Acceptance Angle
 - Energy Filtered Momentum Microscopy
 - Energy Filtered Real Space Imaging

- ▶ **DISPIN**
- Optional Direct Imaging Spin Detector

▶ **METIS 1000**

- 180° Acceptance Angle
- Time-of-Flight 3D-Momentum Microscopy
- Time-of-Flight Real Space Imaging



SPECS Surface Nano Analysis GmbH

T +49 30 46 78 24-0
 E info@specs.com
 H www.specs.com



saes group



Dry Pumps



Turbo Pumps



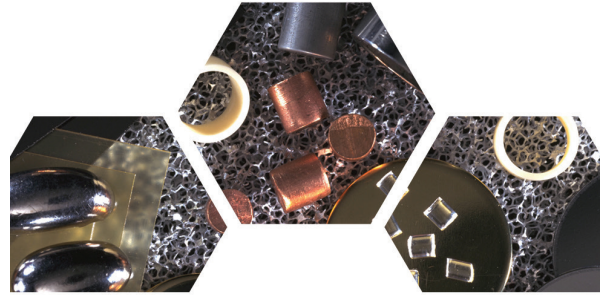
Ebara Technologies, Inc.
 (800) 535-5376
 info@ebaratech.com
 www.ebaratech.com

Goodfellow

Your global supplier for materials

Metals • Ceramics • Polymers
 Compounds • Composites

**Ask us about our expanding
 range of 2D materials**



1-800-821-2870
goodfellowusa.com

InSync, Inc.

An Optical Manufacturing Company

InSync, Inc. has been supplying “state of the art” synchrotron optics since 1993. It is a continuing goal of InSync, Inc. to satisfy changing light source needs by working with the synchrotron community and adjusting capabilities. InSync, Inc. is a custom, high-tech, optical manufacturing company, specializing in unique super polished optics up to 1500mm in size.

2511C Broadbent Pkwy
 Albuquerque, NM 87107
 505/345-2660
 505/345-2589 (Fax)
inq@InSyncOptics.com
www.InSyncOptics.com

MEWASA

SWISS MADE



Nano-Positioning & Alignment

PIEZO, SERVO & STEPPER MOTORS



6-Axis Hexapods



Piezo Nano Focus



Mini Piezo Stages



Vacuum Stages



Piezo Scanners



Air Bearings



PI (Physik Instrumente) www.pi-usa.us
508.832.3456 (East) / 949.679.9191 (West)

PRECISION | SPEED | STABILITY

Put Your Inertial Guidance System to the Test



Newport's RGV stages provide ultra-fast rotation with unsurpassed high resolution and outstanding performance.

The RGV features:

- Ultra-fast rotating speeds, superior reliability, and enhanced position sensitivity
- Optimized available torque for rapid point- to-point motions
- Precision glass scale encoder ensures 0.0003° repeatability
- Through-hole for convenient cable routing with brake and slip ring options



Design based on RGV Rotary Stages

The RGV performance makes it the perfect solution for MEMS-based inertial guidance products - Take your guidance system testing to a new stage.

For other sensor test needs that require higher accuracy, please contact sales@newport.com.



For more information about our Newport Brand visit www.newport.com or call 877-835-9620.



Best-in-Class Cameras and Spectrometers

New! **SOPHIA™**



- 4 megapixels
- 3.2 fps
- - 90° C

PI-MTE

X-Ray Camera
24/7 In-Vacuum
Operation



PI-MAX⁴

ICCD and *em*ICCD
Cameras



IsoPlane[®]
Imaging
Spectrometers



NIRvana[®]

SWIR Cameras



Contact us to discuss your requirements!

tel: + 1 609 631 4000 | info@princetoninstruments.com | www.princetoninstruments.com



Innovation in Nanopositioning

- Sub nanometre resolution
- Dynamic - fast, accurate and repeatable
- Solutions to meet individual customer requirements

Precision testing • Microscopy • UHV systems • Semiconductor • Vibration monitoring and damping • Space • Beamsteering • Metrology

**www.nanopositioning.com
info@queensgate.com**



602 Sidwell Court, Unit A
St. Charles, IL 60174
630.377.5385

Not your average distributor

Optimize your productivity. Reduce factory downtime.

Since 1966, RSA has been providing complete automation solutions to manufacturers across Illinois, Indiana, and Wisconsin. With comprehensive product offerings and engineering services, we are confident that our sales and engineering staff can diagnose your automation problem and provide the perfect solution that is cost effective, easy to use, and most importantly works.