

A

abrasive blasters
 abrasives
 AC power conditioners
 AC power monitors
 academic software, *see software, educational*
 academic videos, *see classroom audiovisual materials*
 accelerator repair services
 accelerator targets, *see targets, accelerator*
 accelerators, *also see ion implanters*
 accelerometers
 acoustic analysis systems
 acoustic noise barriers
 acoustical apparatus, *see individual types*
 acoustical calibrators
 acoustical enclosures
 acoustical filters, *see filters, acoustic*
 acoustical noise generators
 acoustical signal digitizers
 acoustical signal generators
 acoustical transducers
 acoustical transducers, underwater
 acousto-optic components, *see individual types*
 acousto-optic crystals
 activated carbon systems and services
 actuators
 adapters, between-connector types
 adhesion testers
 adhesives
 adhesives, electrically conductive
 adhesives, high thermal conductivity
 adhesives, high-temperature
 adhesives, low-temperature
 adhesives, transparent
 adhesives, vacuum-compatible
 aerosol collectors
 air dryers
 air filters, *see filters, air peak-sensing*
 air samplers
 alkali halides, single-crystal
 alkali metal dispensers
 alloys, high-temperature
 alloys, memory
 alloys, specialty
 alloys, specialty, foil
 alloys, specialty, tube
 alloys, specialty, wire
 alpha sources, calibrated

alpha sources, encapsulated
 alpha spectrometers
 alpha-particle counting systems
 alpha-spectroscopy modules, NIM
 alumina insulators
 alumina plate and rod
 alumina tubing
 aluminum nitride ceramics
 aluminum welding, vacuum-grade
 ammeters, AC
 ammeters, *also see clamp-on current meters; picoammeters*
 ammeters, DC, analog
 ammeters, DC, digital
 amplifier/discriminators
 amplifier/discriminators, NIM
 amplifiers, *also see individual types; preamplifiers*
 amplifiers, CATV
 amplifiers, DC-coupled
 amplifiers, differential
 amplifiers, high-voltage
 amplifiers, instrumentation
 amplifiers, isolation
 amplifiers, lock-in
 amplifiers, microwave
 amplifiers, optical fiber
 amplifiers, optical wave guide
 amplifiers, power, audio frequency
 amplifiers, power, microwave
 amplifiers, power, radio frequency
 amplifiers, radio-frequency pulse
 amplifiers, strain gauge
 amplifiers, transconductance
 amplifiers, tuned
 amplifiers, VXI
 amplifiers, wideband
 analog electronic function modules, *also see logarithmic converters; voltage dividers*
 analog-to-digital converter interfaces
 analog-to-digital converters, *also see data acquisition general interfaces; instrumentation interfaces, computer*
 analog-to-digital converters, CAMAC
 analog-to-digital converters, NIM

analog-to-digital converters, peak-sensing
 analytical services
 analyzers, *see individual types*
 anechoic chambers
 anemometers
 anemometers, thermal
 antennas/aerials
 antireflective coating, *see optical coating*
 anvils, diamond-head
 anvils, high-pressure
 arbitrary waveform generators
 array processors
 assembly services
 atom sources
 atomic absorption spectrometers
 atomic clocks, *see frequency standards*
 atomic force calibration
 atomic force microscope cantilevers
 atomic force microscope probes
 atomic force microscope thermal stages
 atomic force microscopes
 atomic force microscopy services
 atomic hydrogen sources
 attenuators, fiberoptics, *see fiberoptic attenuators*
 attenuators, programmable
 audio spectrum analyzers, *see sound analyzers; spectrum analyzers, low-frequency*
 Auger microprobes, scanning
 Auger spectrometers
 autocollimators
 autocollimators, electronic
 autocorrelators, optical
 autofocus systems

B

baffles, *also see cold traps*
 baffles, water-cooled
 balance weights
 balances, analytical
 balances, electronic
 balances, electronic, micro
 balances, specific gravity
 balances, spring
 balances, triple-beam
 bar code labeling systems
 barometers
 baths, controlled-temperature

batteries
 battery chargers
 beakers, *also see labware*
 beakers, Teflon
 beam analyzer
 electromagnets
 beam expanders, cylindrical
 beam expanders, reflective
 beam expanders, refractive
 beam focusers, electrostatic
 quadrupole
 beam focusers, hexapole
 electromagnet
 beam focusers, hexapole
 permanent magnet
 beam focusers, quadrupole
 electromagnet, doublet
 beam focusers, quadrupole
 electromagnet, singlet
 beam focusers, quadrupole
 permanent magnet
 beam profile monitors, charged particle
 beam profile monitors, optical
 beam profilers, *also see laser beam profilers*
 beam scanners and deflectors, acousto-optical
 beam scanners and deflectors, electro-optical
 beam scanners and deflectors, electromechanical
 beam splitter cubes, polarizing
 beam splitters, *also see pellicles*
 beam steerer
 electromagnets
 beam steering optics, *see laser beam directors components, precision*
 beam switcher
 electromagnets
 bearings, air
 bearings, *also see mechanical components, precision*
 bearings, linear
 bearings, magnetic
 bearings, turntable
 bell-jar gaskets
 bell-jar systems
 beryllia ceramics
 beryllium foil
 beryllium machining services
 beryllium plate and rod
 beryllium tubing
 beta detectors
 beta sources, calibrated
 beta sources, encapsulated
 beta spectrometers

beta-particle counting systems
 bimetallic transition couplings
 biocollectors
 biological safety cabinets
 biomagnetometers
 birefringent crystals
 blackbody emitters
 blending equipment
 bolometers, *see radiation detectors, bolometric*
 bonding units and equipment
 books, *see textbooks*
 borescopes
 boron carbide ceramics
 boron nitride ceramics
 Bourdon precision gauges, absolute
 boxcar averagers
 Bragg diffracting crystals
 brazing, high-vacuum grade
 breaks, *see electric breaks; ceramic-to-metal joints*
 Brewster-angle windows, *see windows, Brewster-angle*
 bridges impedance, *see impedance measuring instruments*
 bridges, capacitance
 bridges, inductance
 bridges, resistance
 burst discs
 butterfly valves

C

cable, *also see individual types*
 cable, coaxial, cryogenic
 cable, coaxial, low-noise
 cable, connectors, *see connectors materials*
 cable, fiberoptic
 cable, high-temperature
 cable, high-voltage
 cable, microcoaxial
 cable, mineral insulator
 cable, Triax
 cadmium zinc telluride detectors, ionizing radiation
 cadmium-based semiconductor single crystals
 calibrated leaks
 calibration services, *see instrument calibration*
 calibrators, current
 calibrators, temperature
 calibrators, vacuum gauge

calibrators, voltage
calorimeters
calorimeters, differential
calorimeters, thermoelectric
calorimeters, x-ray, *see*
 x-ray calorimeter
CAMAC crates and power
 supplies
CAMAC modules, *see*
 individual units
CAMAC service extending
 modules
camera links
cameras, *also see individual*
 types
cameras, CCD, *see charge-*
 coupled devices
cameras, digital
cameras, film-transport
cameras, high-speed
cameras, high-temperature
cameras, holographic
cameras, image converter
cameras, infrared
cameras, linescan
cameras, low-light-level
cameras, streak
cameras, thermal
cameras, UV
capacitance manometers
capacitance meters
capacitors, *also see*
 individual types
capacitors, electrolytic
capacitors, energy storage
capacitors, film
capacitors, high-voltage
capacitors, microwave
capacitors, RF
capacitors, vacuum-
 compatible
carbon foil
cases
catalytic materials
cathode coatings
cathodes
cathodic arc deposition
 systems
CCD, *see charged-coupled*
 devices
CCD analog processors
CCD cameras
CCDs (charge-coupled
 devices)
CCDs, intensified
CD-ROMs
centrifuges
ceramic foams
ceramic insulators
ceramic powders
ceramic processing
ceramic substrates
ceramic-to-metal joints
ceramic-to-metal joints,
 flanged
ceramics, *also see*
 individual types
ceramics, castable
ceramics, casting
ceramics, machinable
ceramics, machining and
 grinding
ceramics, piezoelectric
Cerenkov counter materials

channel electron multipliers,
 see electron multipliers,
 continuous-dynode
chemical analysis
chemical delivery equipment
chemical deposition
 services
chemical hazard detectors
chemical imaging
chemical sensors
chemical vapor deposition
 systems
chemicals, inorganic, high-
 purity specialty
chemicals, isotope-labeled
chemicals, organic, high-
 purity specialty
chemicals, specialty
chemisorption analyzers
chillers, *see cooling*
 equipment
chokes
choppers, electric
choppers, rotating
choppers, tuning fork
chucks
circular polarizers, *see*
 waveplates
clamp-on current meters
clamps, laboratory
classroom audiovisual
 materials
classroom demonstration
 apparatus
clean room supplies
clean rooms and furniture
cleaning systems
clinometers, *also see*
 inclinometers; tilt sensors
clock generators,
 synchronized
clocks, *also see frequency*
 standards; timers
clocks, precision
coating thickness
 measurement equipment
coatings, antireflective
coatings, ceramic
coatings, high-temperature
coatings, low-friction
coatings, processing
 polymers
coatings, protective
coatings, tribological
coaxial amplitude
 modulators, *see*
 microwave modulators
coaxial attenuators, fixed
coaxial attenuators, variable
coaxial crystal detectors
coaxial directional couplers
coaxial filters, *see filters,*
 microwave
coaxial frequency meters,
 see microwave frequency
 meters
coaxial lines, rigid
coaxial power meters, *see*
 power meters, microwave
coaxial switches
cobalt wires
coil-winding, *see*
 electromagnet coils,
 custom coincidence units
coil-winding machines

coil-winding services
coincidence units
coincidence units, NIM
cold baffles and traps
cold boxes/cabinets
cold cathode gauge tubes
 and controllers
cold traps, Freon
cold traps, liquid nitrogen
collimators, *see individual*
 types
color filters, *see filters, color*
 colorimeters
combustion boats, platinum
communications devices
communications equipment
compression testers
compressors, air and other
 gases
computer conversion kits,
 multichannel analyzer
 (hardware and software)
computer displays, *see CRT*
 displays individual types
computer interfaces, *also*
 see individual types
computer interfaces,
 CAMAC
computer interfaces, IEEE-
 488
computer interfaces, RS-
 232
computer interfaces, USB
computer networks
computer online databases
computer operating systems
computer programs, *see*
 software
computer repair and
 maintenance services
computer software, *see*
 software monochrome
 (mainframe)
computer supplies
computer switches,
 peripheral
computer terminals
computer terminals,
 graphics, color (PC)
computer workstations
computer, CD ROM, *see*
 computer ROM, compact
 disk
computerized tomography
 scanners, emission
computerized tomography
 scanners, transmission
computers, *also see array*
 processors; floating-point
 processors monochrome
 (mainframe)
computers, analog
computers, laptop/notebook
computers, PC
conductivity meters, *also*
 see resistivity meters
conductivity meters, electric
conductivity meters, thermal
connectors, coaxial
connectors, cryogenic
connectors, hermetic
connectors, high-current
connectors, high-
 temperature
connectors, high-voltage

connectors, microwave
connectors, signal
connectors, thermocouple
connectors, triaxial
constant-fraction
 discriminators, NIM
consulting services
control systems, *see*
 individual types
controller/scanners,
 programmable
controls, joystick, trackball
 and mouse
converters, *see individual*
 types
cooling equipment for gas,
 vapor, liquid
coordinate-measuring
 machines
copper gaskets, high-
 vacuum
copper powder and flake
cord sets
correlation spectrometers
correlators
counter/timer units, NIM
counter/timers, universal
counters, *also see scalars;*
 timers
counters, fission, *see fission*
 counters CAMAC
counters, frequency
counters, time-interval
crate controllers, CAMAC
creep testers
CRT displays
crucibles, alumina
crucibles, porcelain
crucibles, precious metal
crucibles, quartz
crucibles, refractory metal
cryo-preservation
 equipment
cryo-temperature
 controllers, *also see*
 refrigerator controllers
cryo-temperature readouts
cryo-temperature sensor
 calibration
cryo-temperature sensors,
 capacitance
cryo-temperature sensors,
 diode
cryo-temperature sensors,
 resistance
cryo-temperature sensors,
 thermoelectric
cryocoolers
cryoelectronics, *also see*
 SQUID control units;
 SQUID sensors
cryogenic accessories
cryogenic applications wire,
 see low thermal
 conductivity wire
cryogenic data
cryogenic fabrication and
 repair
cryogenic insulation
cryogenic piping
cryogenic refrigerators, *see*
 cryorefrigerators;
 cryostats; refrigerators,
 individual types

cryogenic sealants, *see*
 sealants, cryogenic
cryogenic sensors
cryogenic storage
 containers
cryogenic systems, custom
cryogenic transfer lines
cryogenic transportation
cryogenic valves
cryopump controllers
cryopumps
cryorefrigerators
cryostat repair
cryostats, all-purpose
cryostats, closed-cycle
cryostats, fast-cooldown
cryostats, Joule-Thomson
cryostats, liquid helium
cryostats, Mossbauer
cryostats, variable
 temperature
cryotrap, *see cold traps*
 supplies
crystal growers, Bridgman
crystal growers, Czochralski
crystal growers, float zone
crystal growers, other
crystal growing crucibles
crystal orientation services
crystal oscillators
crystal ovens
crystallography, models and
 supplies
crystals, *see individual*
 types
current integrators, *see*
 boxcar averagers;
 integrators, current
current leads, *also see*
 superconducting current
 leads
current leads, vapor-cooled
current sources, *see*
 calibrators, current; power
 supplies, DC,
 currentregulated
current transducers, *also*
 see clamp-on current
 meters
current transformers
custom electronics, *see*
 electronics, custom
custom electronics design,
 see electronics design,
 custom
custom optics, *see optics,*
 custom
custom optics design, *see*
 optics design, custom
cutting equipment
CVD, *see chemical vapor*
 deposition
cyclotron accessories
cyclotrons

D
data acquisition general
 interfaces, *also see*
 computer interfaces, IEEE-
 488; computer interfaces,
 RS-232; instrumentation
 interfaces, computer
data acquisition systems,
 PC-based

data acquisition systems, portable
 data acquisition systems, stand-alone
 data loggers
 data storage
 databases, *see computer online databases*
 dataway display modules, CAMAC
 DC power supplies, *see power supplies, DC*
 DC-AC inverters
 DC-DC converters
 decade capacitors
 decade inductors
 decade resistors
 degaussing equipment
 delay generators
 delay generators, *also see digital delay generators*
 delay generators, CAMAC
 delay lines
 demonstration apparatus, *see classroom demonstration apparatus*
 densitometers
 density analyzers
 depolarizers, optical
 deposition systems
 desiccants
 desiccators
 design of experiments (DOE)
 design/construction services
 detectors, *also see radiation detectors*
 detectors, electron
 detectors, hazardous gas
 detectors, ion
 detectors, nonhazardous gas
 detectors, nuclear radiation
 detectors, other
 detectors, proximity/presence
 detectors, silicon drift
 dewars, *also see cryostats; liquid helium storage containers; liquid nitrogen storage containers*
 dewars, detector
 dewars, glass
 dewars, nonmagnetic
 dial gauges
 diamond
 diamond anvil cells
 diamond cutting wheels
 diamond drills
 diamond machining services
 diamond saws
 diamond thin films, self-supporting
 diamond tools, other
 dichroic filters, *see filters, dichroic radiation*
 dicing services
 dielectrometers
 differential thermal analyzers
 diffraction data
 diffraction gratings
 diffraction gratings, holographic

diffraction gratings, pulse compression
 diffraction gratings, synchrotron radiation
 diffusers
 diffusion pump fluids
 diffusion pump heaters
 diffusion pump systems
 diffusion pumps
 digital delay generators
 digital delay generators, NIM
 digital instruments, *see individual types*
 digital interfaces, *also see data acquisition general interfaces; instrumentation interfaces, computer*
 digital interfaces, parallel
 digital interfaces, serial
 digital multimeters, bench
 digital multimeters, portable
 digital printers
 digital-to-analog converter interfaces
 digital-to-analog converters, *also see data acquisition general interfaces; instrumentation interfaces, computer*
 digitizers
 dilatometers
 diode array position-sensitive detectors
 diode lasers, *see lasers, semiconductor*
 discriminators, *also see individual types*
 discriminators, NIM
 disk drives, *see computer disk drives*
 displays, 3D flat panel
 displays, flat panel
 displays, plasma
 dissolved oxygen meters, electrodes or sensors
 distance measurement and range finding
 distillation equipment
 distortion analyzers
 dopants, semiconductor processing
 dosimeter readouts
 dosimeters
 dosimeters, medical applications
 dosimetry services
 dovetail slides
 dyes, *see laser dyes; Q-switch dyes*

E
 educational apparatus, *see individual types*
 educational courses, *see training*
 educational films, *see classroom audiovisual materials*
 educational laboratory equipment, *see classroom demonstration apparatus; student laboratory equipment*

educational software, *see software, educational*
 educational videos, *see classroom audiovisual materials*
 elastomers, conductive
 electric breaks, vacuum
 electric heating tape, *see heating tape*
 electric motor controllers, *also see stepping motor controllers*
 electric motors, *see motors; stepping motors and analyzers*
 electro-optic components, *see individual types*
 electro-optic crystals
 electroformed reflectors
 electroforming
 electromagnet coils, custom
 electromagnet controllers
 electromagnetic analysis services
 electromagnetic interference probes and analyzers
 electromagnets, *also see individual types*
 electromagnets, custom
 electromagnets, laboratory
 electromagnets, laboratory, pole faces for
 electromagnets, laboratory, power supplies for
 electrometers
 electron accelerators, *see cyclotrons; linear accelerators; synchrotrons*
 electron backscatter diffraction
 electron beam sources
 electron beam systems
 electron beam welding
 electron guns
 electron guns, high-current
 electron guns, low-energy
 electron lenses
 electron microscopes, photoemission
 electron microscopes, scanning
 electron microscopes, transmission
 electron microscopy accessories
 electron microscopy services
 electron multiplier preamplifiers, *also see preamplifiers, individual types*
 electron multiplier preamplifiers, NIM
 electron multipliers, continuous-dynode
 electron multipliers, discrete-dynode
 electron multipliers, single-channel
 electron optics building kits
 electron probe microanalyzers (EPMA)

electron spectrometers, *see beta spectrometers; electrostatic energy analyzers; ESCA spectrometers; spectrometers, electron energy loss*
 electron spin resonance spectrometers
 electron vacuum tube components
 electron vacuum tubes
 electronics design, custom
 electronics, custom
 electroplating
 electropolishing equipment
 electrostatic accelerators
 electrostatic energy analyzers, cylindrical mirror
 electrostatic energy analyzers, other
 electrostatic energy analyzers, spherical
 electrostatic ionizers
 electrostatic precipitators
 electrostatic quadrupoles
 elemental analysis services
 elements, high-purity
 elements, isotopically enriched
 elements, isotopically pure, *see isotopes, stable*
 ellipsometers
 EMI/RFI filters
 EMI/RFI shielding, *see enclosures, radio frequency shielding*
 encoders, *also see linear encoders; rotary encoders*
 encoders, magnetic
 encoders, mechanical
 encoders, optical
 endoscopes
 energy meters
 energy storage systems
 engineering services
 environmental chambers
 environmental monitoring systems
 epoxies
 ESCA spectrometers
 etalons, *see interferometers, Fabry-Perot*
 evaporation boats
 evaporation chemicals
 evaporation crucibles
 evaporation sources
 evaporation systems
 executive recruiters
 explosively bonded composite materials

F
 failure analysis services
 fan-in/fan-out units
 Faraday cups
 Faraday rotators

fast-Fourier-transform analyzers, *see spectrum analyzers, fast-Fourier-transform*
 fast-pulsed gas valves
 fasteners, high-temperature
 fatigue testers
 feedthroughs, electric, high-pressure
 feedthroughs, electrical
 feedthroughs, electrical, high-temperature
 feedthroughs, electrical, low-temperature
 feedthroughs, fiberoptic
 feedthroughs, linear motion
 feedthroughs, liquid nitrogen
 feedthroughs, rotary motion
 feedthroughs, rotary motion, magnetic
 feedthroughs, water
 ferroelectric characterization
 ferroelectric materials
 fiberoptic anodes
 fiberoptic attenuators
 fiberoptic beam splitters
 fiberoptic beam splitters, polarizing
 fiberoptic bundles
 fiberoptic cable assemblies
 fiberoptic cleavers
 fiberoptic coating systems
 fiberoptic collimators
 fiberoptic connector kits
 fiberoptic connector polishers
 fiberoptic data links, analog
 fiberoptic data links, digital
 fiberoptic feedthroughs, *see feedthroughs, fiberoptic*
 fiberoptic filters
 fiberoptic filters, tunable
 fiberoptic image guides
 fiberoptic light guides
 fiberoptic lighting systems
 fiberoptic multiplexers
 fiberoptic polishers
 fiberoptic rotary joints
 fiberoptic splicers, fusion
 fiberoptic splicers, mechanical
 fiberoptic stripping tools
 fiberoptic switches
 fiberoptic test equipment
 fiberoptic wavelength division multiplexers
 fiberoptic launchers
 fiberoptic sensors, *see individual types multiplexers*
 fiberoptics, *also see optical fibers*
 fiberoptics, cable
 fiberoptics, connectors
 fiberoptics, couplers
 fiberoptics, detectors
 fiberoptics, infrared
 fiberoptics, polarizing
 fiberoptics, positioners
 fiberoptics, receivers
 fiberoptics, transmitters
 fiberoptics, ultraviolet
 fiberscopes
 fieldmeters, electrostatic

filaments
film digitizers
films, *see thin films*
filter vessels
filter wheels
filters, acoustic
filters, acousto-optical
filters, air
filters, anti-aliasing
filters, color
filters, contrast
filters, cryogenic
filters, dichroic
filters, electronic, active
filters, electronic, passive
filters, far infrared
filters, fluid, in-line
filters, gas
filters, harmonic
filters, infrared
filters, linear variable
filters, liquid
filters, liquid crystal tunable
filters, microwave
filters, narrowband, for WDM
filters, neutral density
filters, optical
filters, optical, spatial
filters, optical, tunable
filters, power-line
filters, programmable
filters, ultrasonic
filters, ultraviolet
filters, vacuum ultraviolet
filters, wire
filters, x-ray
filters, XUV
fission counters
fittings, *see fluid-line fittings; vacuum fittings*
flashlamps, *also see lamps, light pulse generators*
flashlamps, coaxial
flashlamps, helical
flashlamps, linear
flaw detectors, ultrasonic
flow benches
flow controllers
flow switches
flowmeters, gas
flowmeters, liquid
fluid velocimeters, laser
fluid-line fittings
fluid-line fittings, corrosive fluids
fluid-line valves
fluid-line valves, corrosive fluids
fluid-line valves, high-purity
fluids, heat-transfer
fluorometers, *also see spectrometers*
fluorometers, lifetime
foil, *also see metal foil*
force gauges
force transducers
foreline traps, *see molecular-sieve foreline traps*
four-point probe heads
frame grabbers
freezers
frequency converters

frequency meters, *see counters*
frequency multipliers and dividers
frequency standards
frequency standards, quartz oscillator
frequency standards, rubidium vapor
frequency synthesizers
frequency transducers
friction and wear test equipment
FT-IR spectrometers, *see spectrometers, infrared, Fourier*
fuel cells
fume hoods
fume oxidizers
function generators, *also see arbitrary waveform generators; signal generators*
furnaces, *also see ovens*
furnaces, annealing
furnaces, arc melting
furnaces, diffusion
furnaces, hydrogen
furnaces, laboratory
furnaces, optical
furnaces, special atmosphere
furnaces, vacuum
fused silica
fuses

G

gallium-based semiconductor materials
gallium-based semiconductor single crystals
gamma sources, calibrated
gamma sources, encapsulated
gamma-ray detectors
gamma-ray imaging, spectroscopy
gas analyzers
gas chromatography products
gas cylinder hardware
gas cylinder safety devices
gas detectors, *see detectors*
gas dryers
gas filters, *see filters, gas*
gas generators
gas manifolds
gas mixtures, ionization detector
gas mixtures, spark chamber
gas purifiers
gas regulators
gas regulators, corrosion-resistant
gas valves, *see fluid-line valves; gas regulators*
gases, high-purity
gases, isotopic mixtures
gases, isotopically labeled
gases, isotopically pure
gaskets, *see bell-jar gaskets; copper gaskets*

gauges, *see individual types*
gaussmeters, *see magnetometers*
Geiger-Muller tubes
germanium
germanium detectors, high-purity, *see HPGE detectors*
germanium detectors, ion-implanted
germanium, single-crystal
getter pumps, *see vacuum pumps, getter*
getters, evaporable
getters, nonevaporable
gimbal mounts, micrometer-driven
gimbals, precision
glass machining and grinding, *see quartz and glass machining and grinding*
glass tubing
glass-to-metal joints
glass-to-metal joints, flanged
glassblowing services
glassware, laboratory, *see labware, glass*
glove boxes
gloves, safety
goggles, safety, laser
goniometric stages, micrometer-driven
goniometric stages, stepping motor-driven
GPS receivers
gradiometers, *also see biomagnetometers*
gradiometers, SQUID
graphite composite materials
graphite plate and rod
graphite tube
grating mounts
gratings, Bragg
gratings, long period
greases, optical coupling
greases, thermally conductive
GRIN lenses, *see lenses, gradient index*
grinding and milling equipment
gyroscopes
gyrotrons

H

half-wave plates, *see waveplates*
Hall effect probes
Hall measurement systems
hardness testers
harmonic generators, *see optical harmonic generators*
heat capacity measurement
heat exchangers, laboratory
heat pipes
heat sinks
heat-flow transducers
heat-transfer compounds
heater panels

heaters, *also see hot air guns; hot plates; induction heating equipment*
heaters, cartridge
heaters, flat
heaters, immersion
heaters, infrared
heaters, other
heaters, strip
heaters, substrate
heaters, vacuum diffusion pumps
heating cable
heating mantles
heating tape
helium welding, *see TIG welding, high-vacuum grade*
helium leaks, calibrated
helium process systems
helium-3, *also see gases, isotopically pure*
Helmholtz coils
hemispherical analyzers, *see electrostatic energy analyzers*
hexapole magnets, *see beam focusers, hexapole*
high-pressure transducers
high-pressure/high-temperature reactor vessels
high-purity service valves, *see fluid-line valves, high-purity*
high-vacuum feedthrough collars
high-vacuum leak sealants
high-vacuum lubricants, *see lubricants, high-vacuum*
high-voltage power supplies, NIM
high-voltage probes
high-voltage rectifier assemblies
high-voltage sources, *see power supplies, DC, high-voltage components*
high-voltage transformers
holographic equipment and components
holographic film and plates
hose fittings, *see fluid-line fittings*
hot air guns
hot plates
hot plates, stirring
HPGe detectors
humidifiers
humidity sensors
hydrogen dissociators, *see atomic hydrogen sources*
hydrogen purifiers
hydrophones, precision
hygrometers

I

illuminators (other than lamps)
image analyzers
image intensifiers
image measuring devices
image processing equipment

image processing, *also see frame grabbers; software, image processing; video digitizers*
imaging, time-resolved
impedance-matching transformers
impedance-measuring instruments
in-line filters, *see filters, fluid, in-line*
inclinometers
incubators, cell culture
indenters
indium foil
indium plate and rod
indium solder alloys (cryo contacts)
indium wire
indium-based semiconductor materials
indium-based semiconductor single crystals
induction heating equipment
inductors, *see individual types*
inertial measurement units
inertial sensors
infrared analyzers
infrared materials
infrared measuring equipment
inorganic compound syntheses, custom
input registers, CAMAC
inspection systems
instrument calibration
instrument design and development
instrument repair
instrumentation interfaces, *also see data acquisition general interfaces*
instrumentation interfaces, computer
instrumentation, engineering, and design services
instruments, rental and leased
instruments, used
insulation, electrical
insulation, thermal
insulators
integrated optical devices
integrating spheres
integrators, *also see boxcar averagers*
integrators, current
integrators, voltage, *also see magnetometers, fluxmeter*
interfaces, *also see data acquisition general interfaces; instrumentation interfaces, computer*
interference filters, *see filters, optical*
interferometer fringe counters
interferometers, aspherical
interferometers, Fabry-Perot
interferometers, fiber optics

interferometers, Mach-Zehnder
interferometers, Michelson
interferometers, other types
interferometers, phase-measuring
interferometers, speckle
intermetallic compounds, high-purity
internet services
invar plate and rod
invar tubing
ion chambers
ion guns
ion implanters
ion milling, *see ion-beam micromachining*
ion pumps and controllers
ion-beam micromachining
ion-beam microprobe analyzers
ion-beam services
ion-beam sources
ion-etching equipment
ion-exchange resins
ion-implantation services
ion-pump rebuilding
ion-pump systems
ionization gauge controllers
ionization gauge multiplexers
ionization gauge tubes
ionization gauge tubes, low-vacuum, *see ionization gauge tubes, SchulzPhelps type*
ionization gauges, fast
ionizing radiation detectors, *see individual types*
iron plate and rod, high-purity
isolation transformers
isotope separators
isotopes, stable
isotopically enriched elements, *see elements, isotopically enriched*

J

jacks, laboratory
Josephson devices

K

Kelvin probes
Kerr cells, *see modulators, electro-optical*
klystrons
kovar rod and wire
kovar tubing

L

label makers, printers
labels
laboratory furniture
labware, ceramic
labware, fluoroplastics
labware, glass
labware, plastic
labware, quartz
laminators
lamps, argon arc

lamps, calibrated
lamps, deuterium
lamps, electrodeless discharge
lamps, glow discharge
lamps, high-intensity CW
lamps, hollow cathode
lamps, krypton arc
lamps, laser
lamps, LED
lamps, mercury arc
lamps, mercury-xenon arc
lamps, other
lamps, quartz-tungsten-halogen
lamps, short-pulse
lamps, spectral line
lamps, ultraviolet
lamps, xenon arc
lamps, XUV
Langmuir-Blodgett troughs
lanthanide compounds, high-purity
lappers, polishers
laser ablation systems
laser ablation targets, *see targets, laser ablation*
laser accessories, doublers and triplers
laser alignment equipment
laser beam attenuators, variable
laser beam directors
laser beam dumps
laser beam guides
laser beam machining
laser beam profilers
laser beam switches
laser beam welding
laser communications
laser diode collimators
laser diode power supplies
laser diode stabilization devices
laser diode temperature controllers
laser drilling, *see laser beam machining*
laser dyes
laser gas-handling equipment
laser gases
laser glasses
laser intensity stabilizers
laser machining, *see laser beam machining*
laser mirrors
laser mounts
laser pointers
laser power meters, *see power meters, optical*
laser projection systems
laser pulse energy meters
laser repair
laser retroreflectors
laser rod repair
laser rods
laser safety barriers
laser safety goggles, *see goggles, safety, laser*
laser safety labels
laser safety shutters
laser system design services

laser-based systems for metrology
lasers, alexandrite, tunable, pulsed
lasers, argon-ion, CW
lasers, argon-ion, pulsed
lasers, carbon dioxide, CW
lasers, carbon dioxide, pulsed
lasers, chemical, CW
lasers, copper vapor, pulsed
lasers, deep-UV, CW
lasers, diode frequency-doubled
lasers, diode laser pumped, CW
lasers, diode laser pumped, pulsed
lasers, diode laser pumped, pulsed UV
lasers, diode laser pumped, single-frequency
lasers, diode, *also see lasers, semiconductor*
lasers, diode, high-power
lasers, dye cells for
lasers, dye, CW
lasers, dye, picosecond
lasers, Er³⁺ fiber CW
lasers, erbium, pulsed
lasers, excimer, pulsed
lasers, far infrared, CW
lasers, far infrared, pulsed
lasers, femtosecond, pulsed
lasers, fiber
lasers, fluorine, pulsed
lasers, free-electron
lasers, gases for
lasers, helium-cadmium
lasers, helium-neon
lasers, helium-neon, single-frequency
lasers, krypton-ion, CW
lasers, lead salt
lasers, mode-locked
lasers, neodymium glass
lasers, neodymium-YAG, CW
lasers, neodymium-YAG, pulsed
lasers, ruby
lasers, semiconductor arrays
lasers, semiconductor, CW
lasers, semiconductor, pig-tailed
lasers, semiconductor, pulsed
lasers, terahertz
lasers, thulium
lasers, titanium sapphire, tunable
lasers, UV, waveguide
lasers, waveguide
lasers, YLF, pulsed
LCR meters, *see impedance-measuring instruments*
lead aprons
lead bricks
lead containers
lead glass goggles
lead screws, precision
lead shields
lead wire, foil and sheets

lead-acrylic panels
leak detectors, mass spectrometer
leak detectors, pressurized system
leak locators, ultrasonic
leaks, *see calibrated leaks*
LEED spectrometers
lens assemblies
lenses, *also see optical components*
lenses, aspherical
lenses, compound
lenses, cylindrical
lenses, electrostatic
lenses, fiber optic
lenses, Fresnel
lenses, gradient index
lenses, machine vision
lenses, plastic
lenses, spherical
level gauges
level monitors, solids
level switches
light intensity meters
light pulse generators
light scattering instruments
light sources, *also see lamps*
light-emitting diode (LED) spectral analyzers
light-emitting diodes (LED)
lightning protection equipment
line voltage regulators, automatic
linear accelerators, electron
linear accelerators, ion
linear actuators, servomotor-driven
linear amplifiers, NIM
linear displacement sensors
linear encoders, magnetic
linear encoders, optical
linear polarizers
liquid chromatography products
liquid crystals
liquid helium level controllers
liquid helium level readouts
liquid helium storage containers
liquid helium storage containers, nonmagnetic
liquid helium suppliers
liquid level controllers, general
liquid nitrogen level controllers
liquid nitrogen level monitors for solid-state detector, NIM
liquid nitrogen storage containers
liquid nitrogen suppliers
liquid nitrogen transfer-line hardware
liquifiers, helium
liquifiers, nitrogen
lithography systems
load cells
loads, electronic
low temperature, *see cryo software*

low-thermal-conductivity wire
lubricants, electrically conductive
lubricants, high-temperature
lubricants, high-vacuum

M

machine vision hardware and software
machining, precision and general
magnesia ceramics
magnet wire
magnetic assemblies
magnetic design
magnetic field probes, *see Hall effect probes; nuclear magnetic resonance probes*
magnetic field probes, AC
magnetic field trimming devices
magnetic force microscopes
magnetic particles
magnetic resonance imaging design
magnetic sensors and devices
magnetic shielding, design, *also see magnetic shields, custom*
magnetic shielding, foil
magnetic shielding, sheet
magnetic shields for photomultipliers, *see photomultiplier magnetic shields*
magnetic shields, cryogenic
magnetic shields, custom
magnetizers, *see magnets, permanent, chargers for magnetometers, AC*
magnetometers, *also see biomagnetometers; gradiometers; susceptometers*
magnetometers, BH loop
magnetometers, fluxgate
magnetometers, fluxmeter
magnetometers, force balance
magnetometers, Hall effect
magnetometers, magnetostriction
magnetometers, nuclear magnetic resonance
magnetometers, rotating coil
magnetometers, SQUID
magnetometers, torque
magnetometers, vibrating sample
magnetostrictive materials
magnets, *also see beam focusers; electromagnets; solenoids, air core; superconducting magnets; undulator magnet systems*
magnets, nuclear magnetic resonance quality

magnets, permanent
magnets, permanent, alnico
magnets, permanent, chargers for
magnets, permanent, ferrite
magnets, permanent, rare earth alloys
magnets, pulsed
magnets, reference, for calibration
magnets, superconducting, *see superconducting magnets*
magnets, wound cores
manipulators, *also see micromanipulators*
manipulators, precision
manometers, *see capacitance manometers; pressure gauges*
Marx generators
mass flowmeters, electronic
mass spectrometer supplies
mass spectrometers, magnetic
mass spectrometers, other
mass spectrometers, quadrupole
mass spectrometers, time-of-flight
mass spectrometry services
materials analysis services
materials characterization testers
materials data
materials processing systems and services, *see chemical vapor deposition; molecular beam epitaxy; plasma deposition; plasma etching; thin film coating*
MBE, *see molecular beam epitaxy*
mechanical components, precision
mechanical properties, testing and equipment
medical diagnostic equipment
medical laser systems
memory alloys, *see alloys, memory*
memory units
MEMS, *see micro electro mechanical systems*
mercury analyzers
mercury spill kits
mercury vapor detectors
metal foil
metal hose, flexible, *see vacuum hose, metal*
metal powders, high-purity
metal powders, processing
metal wire, high-purity
metal, mesh
metallic glasses
metallized fabric
metals, high-purity, *see elements, high-purity; also see alkali metal dispensers*
metals, porous
metals, single-crystal
meteorology instrumentation or sensors

metering valves
meters, dewpoint and moisture
mica
microcalorimeter systems
microchannel-array imaging detectors
microchannel-array plates
microcomputers, *see computers, PC imaging*
microcomputers, embedded
microdensitometers
microelectromechanical systems
microholes
microindentation test equipment
microinterferometers
micromachine tools
micromanipulators
micrometer heads, precision
microohmmeters
microoptics
microphone systems
microphones, dynamic
microphones, precision
micropositioning stations
microscope cameras
microscope lamps and illuminators
microscopes, acoustic
microscopes, *also see individual types*
microscopes, Brewster angle
microscopes, confocal
microscopes, depth-measuring
microscopes, emission
microscopes, fiberoptic inspection
microscopes, field ion
microscopes, fluorescence lifetime imaging
microscopes, high-temperature
microscopes, infrared
microscopes, interference
microscopes, long-working-distance
microscopes, magnetic
microscopes, multiphoton
microscopes, multiprobe
microscopes, near-field optical
microscopes, photon tunneling
microscopes, polarizing
microscopes, Raman spectroscopy
microscopes, stereo
microscopes, time-resolved
microscopes, traveling
microscopes, video
microscopes, x-ray
microscopy services
microtomes
microtubules
microvoltmeters
microwave cables
microwave cavities
microwave components, *also see coaxial; waveguide*

microwave filters, *see filters, microwave*
microwave frequency meters
microwave isolators and circulators
microwave modulators
microwave polarizers
microwave power amplifiers, *see amplifiers, power, microwave*
microwave power meters, *see power meters, microwave*
microwave pulse modulators
microwave thermocouple power sensors
microwave tubes, *also see klystrons*
microwave tubes, high-power
microwave tuner
millimeter wave components, active
millimeter wave components, passive
minicomputers, *see computer workstations*
mirrors, aspherical
mirrors, astronomical
mirrors, flat
mirrors, solid metal
mirrors, spherical
mixers, gas vacuum feeder
MOCVD, *see chemical vapor deposition systems*
mode lockers
modulator drivers, Pockels cell
modulators, acousto-optical
modulators, electro-optical
modulators, fiberoptic
modulators, integrated optics
modulators, magneto-optic
modulators, phase
modulators, photoelastic
moisture analyzers
molecular beam epitaxy systems
molecular beam systems, supersonic
molecular sieves
molecular weight determination
molecular-sieve foreline traps
molybdenum foil
molybdenum plate and rod
molybdenum tubing
molybdenum wire
monochromators, scanning
monochromators, vacuum
Mossbauer sources
Mossbauer spectrometers
motion control systems
motor controllers, *see electric motor controllers; stepping motor controllers*
motor speed reducers
motors, AC
motors, *also see stepping motors*
motors, brushless

motors, DC
motors, linear
motors, servo
motors, synchronous
motors, vacuum operation
multichannel amplifiers, NIM
multichannel analyzer computer conversion kits (hardware and software), *see computer conversion kits, multichannel analyzer (hardware and software) multidimensional*
multichannel analyzers
multichannel analyzers, multidimensional
multichannel analyzers, optical
multichannel analyzers, PC-based
multichannel detectors
multichannel scalars
multiplexer scanners
multiplexers, NIM
multiwire proportional chambers

N

nanopositioning systems
nanostructure synthesis
nanostructured materials
nanotubes
nanovoltmeters
navigation systems
neutral density filters, *see filters, neutral density*
neutron activation analysis services
neutron detectors
neutron detectors, position-sensitive
neutron generators, accelerators
neutron generators, sealed-tube
neutron radiography services
neutron sources
neutron spectrometers
nickel foil
nickel wire cloth
nickel wires
NIM bin and power supplies
NIM modules, *see individual units*
niobium foil
niobium plate and rod
niobium wire
NMR phantoms, *see phantoms, nuclear magnetic resonance spectrometers*
noise generators and sources
noise reduction products
nondestructive testing equipment (NDE)
nonlinear optical crystals
nozzles
nuclear magnetic resonance design
nuclear magnetic resonance probes

nuclear magnetic resonance scanners, medical
nuclear magnetic resonance spectrometers
nuclear quadrupole resonance spectrometers
nuclear radiation collimators

O

O-rings, *also see vacuum O-rings*
O-rings, elastomer
O-rings, metal
O-rings, vacuum-baked
ohmmeters, *also see bridges, resistance; microohmmeters*
ohmmeters, very low resistance
oil analysis
optical amplifiers
optical beam profile scanners
optical benches
optical breadboarding hardware
optical calibration measurement services
optical cells
optical coating
optical collimators
optical comparators
optical component mounts, 5-axis
optical component mounts, fixed
optical component mounts, rotational
optical component mounts, rotational-tilting
optical component mounts, tilting
optical component mounts, translational, 1-axis
optical component mounts, translational, 2-axis
optical component repair
optical components, far infrared
optical components, high-energy
optical components, infrared
optical components, ultraviolet
optical delay lines
optical design
optical diffusers
optical fibers, *also see fiberoptics*
optical fibers, metallized
optical fibers, microstructured
optical fibers, multimode
optical fibers, polarization-preserving
optical fibers, single-mode
optical filters, *see filters, optical*
optical flats
optical glasses
optical harmonic generators
optical isolators, *see optoisolators*

optical multichannel analyzers, *see multichannel analyzers, optical*
optical spectrum analyzers, *see spectrum analyzers, optical*
optical system design services
optical tables, granite
optical tables, honeycomb
optical test equipment
optical time-domain reflectometers, fiberoptic
optical wedges
optics design, custom
optics, adaptive
optics, custom
optics, diffractive
optics, plastic
optoelectronic devices
optoelectronic systems
optoisolators
organic compound syntheses, custom
orifices, flow-calibrated
oscillators, *also see function generators; signal generators*
oscillators, swept-frequency
oscilloscopes
oscilloscopes, digital-storage
oscilloscopes, low-frequency
oscilloscopes, plug-in
oscilloscopes, sampling
oscilloscopes, storage
oscilloscopes, voltage probe
oscilloscopes, wide-band
OTDRs, *see optical time-domain reflectometers*
output couplers, laser
output registers, CAMAC
ovens, *also see furnaces*
ovens, conveyor
ovens, inert gas
ovens, laboratory
ovens, microwave
ovens, modular electric
ovens, vacuum
oxides, single-crystal
oxygen analyzers
ozone detectors
ozone generators

P

paint, conductive
parabolic mirrors, *see mirrors, aspherical*
parametric oscillators
partial reflectors
particle beam collimators
particle beam profile scanning monitors
particle counters and analyzers
particle detectors
particle size analyzers
particle standards
particulate samplers
patch cords

Peltier devices, *see refrigerators, thermoelectric*
pentaprisms
permeability meters
pH meters
phantoms, calibration
phantoms, humanoid
phantoms, imaging
phantoms, nuclear magnetic resonance
phase meters
phase sensitive detectors, *see amplifiers, lock-in*
phase shifters, *also see waveguide phase shifters*
phosphor coatings and screens
phosphor screens
phosphors, brush-on
photoacoustic sample cells
photocathodes
photodetectors, *also see radiation detectors*
photodetectors, semiconductor fast
photodiodes, avalanche
photodiodes, PIN
photodiodes, vacuum, *see radiation detectors, photoemissive systems*
photoetching services
photoluminescence measuring systems
photometers
photomultiplier bases and sockets
photomultiplier bases, nuclear applications
photomultiplier preamplifiers
photomultiplier tube amplifiers/discriminators
photomultiplier tube housings
photomultiplier tube housings, cooled
photomultiplier tube magnetic shields
photomultiplier tube power supplies
photomultiplier tubes
photomultiplier tubes, array
photomultiplier tubes, continuous dynode
photomultiplier tubes, fast-focused
photomultiplier tubes, hemispherical
photomultiplier tubes, high-magnetic-field
photomultiplier tubes, imaging
photomultiplier tubes, infrared
photomultiplier tubes, position-sensitive
photomultiplier tubes, scintillation counting
photomultiplier tubes, solar blind
photomultiplier tubes, ultraviolet
photomultipliers, *see photomultiplier tubes discriminators*

photon detection and counting systems
photonics, *see electro-optic and optoelectronic*
phototubes, *see radiation detectors, photoemissive*
picoammeters
piezoelectric actuators, power supplies for
piezoelectric films
piezoelectric materials, *see ceramics, piezoelectric*
piezoelectric scanners
piezoelectric transducers, *also see pressure transducers, piezoelectric*
piezoelectric translator controllers, open-loop
piezoelectric translator controllers, with lock-in stabilization
piezoelectric translators
piezoresistive transducers
pinch valves
pinhole apertures
pipe fittings, *see fluid-line fittings*
pipettes, automatic
Pirani gauge controllers
Pirani gauge tubes
PIXE surface analyzers
planetaria, portable
plasma cleaning equipment
plasma deposition systems
plasma etching systems
plasma monitoring systems
plasma sources
plastic labware, *see labware, plastic*
plastics, high-purity
platforms, 5-axis motion
platinum, *see precious metal*
plotters, line, *see recorders*
pneumatic transfer systems
pneumatic valves
Pockels cells, *see modulators, electro-optical*
polarimeters, *also see ellipsometers*
polarization controllers
polarization rotators
polarization scramblers
polarizers, *see birefringent crystals; filters, dichroic; linear polarizers; microwave polarizers; prisms, Glan; waveplates; wiregrid polarizers*
polarizing filters, *see filters, dichroic*
polishing and lapping services
polishing cloths and pads
polishing compounds
polishing equipment, ion-beam
polishing jigs
polishing materials, chemical-mechanical
polishing materials, fiberoptic
polishing materials, metallurgical

polishing materials, precision optical
polymer piezoelectric, *see piezoelectric films*
porosimeters
position sensors, *also see dial gauges; linear encoders; potentiometers; shaft encoders*
position sensors, Hall effect
position transducers, linear capacitive
position transducers, linear optical
position transducers, linear potentiometer
position transducers, linear variable transformer
position transducers, rotary capacitive
position transducers, rotary optical
position transducers, rotary potentiometer
positioning devices, *see dovetail slides; gimbal mounts; goniometric stages; micropositioning stations; piezoelectric translators; platforms; rotators; translators potentiometer*
potentiometers, precision
potting materials
powders, nanophase
power amplifiers, *see amplifiers, power*
power meters, fiberoptic
power meters, infrared
power meters, microwave
power meters, optical
power meters, radio frequency
power meters, ultraviolet
power supplies, AC, *also see DC-AC inverters*
power supplies, AC, uninterruptible
power supplies, AC, voltage-regulated
power supplies, *also see individual types*
power supplies, CAMAC, *see CAMAC crates and power supplies*
power supplies, capacitor-charging
power supplies, CW gas laser
power supplies, DC, *also see DC-DC converters*
power supplies, DC, bipolar
power supplies, DC, current-regulated

power supplies, DC, digitally controlled
power supplies, DC, four-quadrant
power supplies, DC, high-current
power supplies, DC, high-voltage
power supplies, DC, precision
power supplies, DC, programmable
power supplies, DC, uninterruptible
power supplies, DC, very low current
power supplies, DC, very low voltages
power supplies, DC, voltage-regulated
power supplies, flashlamp
power supplies, high-energy physics detectors
power supplies, laser diode, *see laser diode power supplies*
power supplies, laser modulator
power supplies, microwave
power supplies, NIM, *see NIM bin and power supplies capacitance*
power supplies, photodiode
power supplies, pulsed gas laser
power supplies, pulsed output
power supplies, radio frequency
power supplies, semiconductor laser
power supplies, x-ray
power transducers preamplifiers, *also see individual types*
preamplifiers, charge-sensitive
preamplifiers, current
preamplifiers, differential
preamplifiers, gated
preamplifiers, low-noise
preamplifiers, voltage
preamplifiers, wideband
precious metal flakes and powders
precious metal ribbons
precious metal sheet
precious metal wire
presses, high-pressure
presses, laboratory
pressure controllers and readouts
pressure gauges, *also see Bourdon precision gauges; capacitance manometers*
pressure gauges, Bourdon
pressure gauges, diaphragm
pressure gauges, McLeod
pressure sensors, fiberoptics
pressure sensors, low-temperature
pressure switches

pressure transducers, *also see high-pressure transducers*
 pressure transducers, differential
 pressure transducers, piezoelectric
 pressure transducers, piezoresistive
 pressure transducers, potentiometer
 pressure transducers, strain gauge
 pressure transducers, variable capacitance
 pressure transducers, variable reluctance
 printed circuit boards, special materials
 printers, ink-jet
 printers, laser
 printers, thermal
 prism couplers
 prisms, *also see pentaprisms*
 prisms, Brewster-angle
 prisms, corner cube
 prisms, Glan
 prisms, right-angle
 prisms, Wollaston
 probe stations, automatic
 probe stations, cryogenic
 probe stations, full wafer
 probe stations, HTS
 probe stations, microwave
 probe stations, semiautomatic
 probes, test
 process controllers, monitors
 processors, *see individual types*
 profilers
 profilers, stylus
 profilometers
 programmable controllers, *see controller/ scanners, programmable*
 properties, thermophysical
 proportional counters
 pulse generators, *also see function generators; trigger generators*
 pulse generators, CAMAC
 pulse generators, high-power
 pulse generators, high-voltage
 pulse generators, precision
 pulse shapers, CAMAC
 pulse transformers
 pulse transformers, high-voltage
 pulse tubes
 pulsed laser deposition systems and services
 pulsed-current monitors
 pumps, *also see individual types*
 pumps, chemical
 pumps, circulating
 pumps, cryogenic
 pumps, diaphragm
 pumps, high-pressure
 pumps, magnetic drive

pumps, metering
 pumps, peristaltic
 pumps, rotary gear
 pumps, sealless
 pumps, syringe
 pyrometers, *see thermometers*

Q

Q-switch dyes
 Q-switches, acousto-optical
 Q-switches, electro-optical
 quadrupole magnets, *see beam focusers, quadrupole*
 quarter-wave plates, *see waveplates*
 quartz
 quartz and glass machining and grinding
 quartz fabrication
 quartz monitor crystals
 quartz tubing
 quartz-to-metal joints
 quartz-to-metal joints, flanged

R

radar reflectors
 radiation badge services, *see dosimetry services*
 radiation detectors, *also see photodetectors; photodiodes; photomultiplier tubes; scintillators; thermometers, radiation*
 radiation detectors, bolometric
 radiation detectors, Golay cell
 radiation detectors, infrared
 radiation detectors, ionizing, *see individual types*
 radiation detectors, large-area
 radiation detectors, photoconductive
 radiation detectors, photoemissive
 radiation detectors, photovoltaic
 radiation detectors, pyroelectric
 radiation detectors, semiconductor
 radiation detectors, superconducting
 radiation detectors, thermoelectric
 radiation detectors, ultraviolet
 radiation detectors, visible
 radiation monitors, personal
 radiation shielding, *also see lead items*
 radiation shielding, EM, *see enclosures, radio frequency shielding*
 radiation shielding, gamma
 radiation shielding, neutron
 radiation survey meters
 radioactive solutions

radioactive sources, *see alpha, beta, gamma, Mossbauer, neutron and x-ray sources; also see radioisotopes*
 radioisotopes
 radiometers, *see radiation detectors*
 radon monitors
 Raman imaging
 Raman shifters
 Raman spectrometers
 ramp generators, *also see function generators*
 random noise generators and sources, *see noise generators and sources*
 rare-earth compounds, *see lanthanide compounds, high-purity*
 ratemeters
 ratiometers
 reactor vessels, *see individual types*
 recorder supplies and accessories
 recorders, *also see tape recorders; video recorders*
 recorders, field data
 recorders, oscillographic, multichannel
 recorders, paperless
 recorders, strip-chart
 recorders, strip-chart, multichannel
 recorders, transient signal
 recorders, X-Y
 reflectometers, optical
 reflectometers, time-domain
 reflectometers, vacuum
 reflectors, *see individual types temperature controllers for*
 refractive index matching fluids, *also see greases, optical coupling*
 refractive index sensors
 refractometers
 refrigerated fluid recirculators
 refrigerator controllers, *also see cryo-temperature controllers*
 refrigerators, 4K
 refrigerators, ADR
 refrigerators, *also see cryorefrigerators; cryostats*
 refrigerators, closed-cycle
 refrigerators, dilution
 refrigerators, helium-3
 refrigerators, immersion
 refrigerators, Joule-Thomson
 refrigerators, pulse tube
 refrigerators, Stirling cycle
 refrigerators, thermoelectric
 refrigerators, thermoelectric, temperature controllers for
 relays, high-voltage
 remote viewing instruments
 rental instruments, *see instruments, rental and leased*
 residual gas analysis services

residual gas analyzers
 resistance alloy wire
 resistance meters, *see ohmmeters*
 resistivity meters and measuring systems
 resistivity meters, *also see conductivity meters; electrometers*
 resistors, *also see individual types*
 resistors, high-voltage
 resistors, noninductive
 resistors, vacuum-compatible
 resonance, *see electron spin resonance spectrometers*
 retarders, *see waveplates*
 reticles
 retroreflectors, *see prisms, corner cube micrometer-driven, small-angle*
 RF generators
 RF power supplies
 RF systems
 RF transceivers
 RHEED imaging and analysis
 rhenium foil
 rhenium plate and rod
 rhenium tubing
 rhenium wire
 rheometers
 RMS-to DC converters
 robotic sample processors
 robotics equipment and systems
 rotary encoders, magnetic
 rotary encoders, optical
 rotating electrical connectors
 rotators, 2-axis, micrometer-driven
 rotators, 2-axis, motor-driven
 rotators, horizontal axis, micrometer-driven, small-angle
 rotators, horizontal axis, motor-driven, small-angle
 rotators, micrometer-driven, 360
 rotators, motor-driven, 360
 rotators, vertical axis, micrometer-driven, small-angle
 rotators, vertical axis, motor-driven, small-angle
 roughing pumps, *see sorption pumps; vacuum mechanical pumps*
 Rutherford backscatter analyzers

S

safety/security equipment and systems
 sample and hold cards
 sample and hold voltmeters, *see voltmeters, sample and hold*
 sample cutting machines
 sample holders

sample polishing machines
 sapphire
 sapphire balls
 sapphire optics
 scales
 scales, *see balances*
 scanners, acousto-optic
 scanners, data, *also see controller/scanners, programmable; switches and switching systems*
 scanners, fixed frequency
 scanners, raster
 scanners, resonant
 scanners, XY
 scanning beam delivery systems
 scanning electron microscopes, *see electron microscopes, scanning*
 scanning probe microscopes
 scanning tunneling microscope tips
 scanning tunneling microscopes
 scanning tunneling microscopy services
 scattering chambers
 scintillation cameras
 scintillator-photomultiplier tube assemblies
 scintillators, Bi₄Ge₃O₁₂
 scintillators, CaF₂ (Eu)
 scintillators, CsI(Na)
 scintillators, CsI(Tl)
 scintillators, CsI, pure
 scintillators, glass
 scintillators, lanthanum halides
 scintillators, liquid
 scintillators, NaI(Tl)
 scintillators, NaI(Tl), polycrystalline, hexagonal
 scintillators, NaI(Tl), thin-window
 scintillators, NaI(Tl), through-hole
 scintillators, NaI(Tl), very large
 scintillators, NaI(Tl), well
 scintillators, plastic
 scintillators, plastic fiber
 scratch testers
 screens
 sealants, cryogenic
 sealants, high-temperature
 seals
 secondary ion mass spectrometer systems
 Seebeck measurement systems
 semiconductor analysis services
 semiconductor C-V systems
 semiconductor equipment
 semiconductor I-V systems
 semiconductor laser modules
 semiconductor materials
 sensors
 sensors, angular rate
 sensors, CMOS
 shaft encoders, absolute
 shaft encoders, incremental

- shakers
- shielding, *see enclosures, radio frequency shielding; magnetic*
- shutters, electro-optical
- shutters, electromechanical
- sieves
- signal analyzers
- signal averagers
- signal conditioners
- signal filters, active, *see filters, electronic, active*
- signal generators, *also see function generators*
- signal generators, audio frequency
- signal generators, microwave
- signal generators, radio frequency
- signs, illuminated warning
- silicon
- silicon carbide
 - semiconductor materials
- silicon detectors, ion-implanted
- silicon monoxide
- silicon monoxide
 - evaporation sources
- silicon nitride ceramics
- silicon surface barrier detectors
- silicon, single-crystal
- silicone, conductive
- single-channel analyzers, bench
- slides, linear, *also see translators*
- slip rings, *see rotating electrical connectors (mainframe)*
- slit jaws, vacuum-side, externally adjustable
- slits, optical
- software, 3D visualization
- software, acoustic/audio
- software, algebraic manipulation, other
- software, application development
- software, artificial intelligence
- software, astronomy
- software, barcode
- software, bibliographic
- software, chemometrics
- software, communications, other
- software, computational chemistry
- software, computational fluid mechanics
- software, computer-aided design and engineering
- software, crystallography
- software, data
 - acquisition/control, IEEE-488
- software, data
 - acquisition/control, RS-232
- software, data management (mainframe)
- software, data management, other
- software, design of experiment (DOE)
- software, digitizing
- software, eddy-current measurement
- software, educational
- software, electromagnetic design
- software, electronic design
- software, environmental
- software, fast transforms
- software, fringe analysis
- software, gamma-ray analysis
- software, graphics (mainframe)
- software, graphics, other
- software, image processing (mainframe)
- software, image processing, other
- software, language compilers (mainframe)
- software, language compilers, other
- software, laser safety
- software, laser scanning
- software, manuals or guides
- software, mapping
- software, modeling (mainframe)
- software, modeling, other
- software, motion control
- software, networking, other
- software, numerical methods
- software, object-oriented, database, workflow/groupware
- software, operating systems, *see computer operating systems (mainframe)*
- software, optical design (mainframe)
- software, optical design, other
- software, particle accelerator
- software, process control
- software, programming tools
- software, programming, graphics
- software, quality control
- software, safety and compliance
- software, security
- software, signal processing
- software, simulations
- software, solid state physics/sciences
- software, spectroscopy
- software, statistical/analysis (mainframe)
- software, statistical/analysis, other
- software, thermochemistry
- software, thermophysical properties
- software, thin-film coating design
- software, word processing, mathematical
- software, word processing, technical
- software, yield management
- solar cells
- solar simulators
- solder fluxes
- solders, specialty
- Soleil-Babinet compensators
- solenoid valves
- solenoids, air core
- solid-state detector preamplifiers
- solid-state high-voltage switches
- solid-state lasing crystals
- solvents, high-purity
- sorption pump dewars
- sorption pumps
- sound analyzers
- sound generators, *see acoustical signal generators*
- sound power meters
- sound-level meters
- sound-level recorders
- spark gaps, *see triggered spark gaps*
- spatial filters, *see filters, optical, spatial*
- spectrometers, *electron spin*
- specialty metal machining
- spectral data
- spectrographs
- spectrographs, imaging
- spectrometer accessories
- spectrometers, *also see fluorometers; individual types*
- spectrometers, atomic fluorescence
- spectrometers, charged particle
- spectrometers, circular-dichroism
- spectrometers, deep level transient
- spectrometers, dielectric
- spectrometers, echelle
- spectrometers, EDXRF
- spectrometers, electron energy loss
- spectrometers, inductively coupled plasma
- spectrometers, infrared
- spectrometers, infrared, Fourier transform
- spectrometers, laser
- spectrometers, laser flash photolysis
- spectrometers, microbiology
- spectrometers, modular
- spectrometers, optical emission
- spectrometers, other
- spectrometers, photoacoustic
- spectrometers, photoelectron
- spectrometers, process control
- spectrometers, time-resolving
- spectrometers, ultraviolet
- spectrometers, vacuum ultraviolet
- spectrometers, visible
- spectrometers, XPS
- spectrophotometers
- spectroradiometers
- spectroscopes
- spectroscopy accessories
- spectroscopy amplifiers, bench
- spectroscopy cells
- spectroscopy cells, high-pressure
- spectroscopy, steady state
- spectrum analyzers, acousto-optical
- spectrum analyzers, fast-Fourier-transform
- spectrum analyzers, low-frequency
- spectrum analyzers, microwave
- spectrum analyzers, optical
- spectrum analyzers, swept frequency
- spot-welding machines
- springs
- sputtering guns
- sputtering services
- sputtering systems
- sputtering targets
- SQUID control units
- SQUID sensors
- stainless steel foil standard leaks, *see calibrated leaks*
- standards, analytical
- standards, capacitance
- standards, frequency, *see frequency standards measurement instruments*
- standards, magnetic field
- standards, microanalytical instrument
- standards, pressure
- standards, radiation, *also see blackbody emitters*
- standards, resistance
- standards, voltage
- static control, detectors and measurement instruments
- steam traps
- steel, very low carbon
- steels, specialty
- stepping motor controllers, CAMAC
- stepping motor driver-controllers
- stepping motor driver-controllers, programmable
- stepping motor driver-controllers, with computer interface
- stepping motors
- sterilizers
- stirrers
- strain gauges
- stress measuring systems, *also see tensile testers*
- student laboratory computer simulation software
- student laboratory equipment, advanced
- student laboratory equipment, electricity and magnetism
- student laboratory equipment, heat and thermodynamics
- student laboratory equipment, mechanics and waves
- student laboratory equipment, modern physics
- substrate holders and heaters
- substrates
- sum amplifiers, NIM
- superconducting cable
- superconducting cavities, *see superconducting resonators*
- superconducting current leads
- superconducting devices, *also see Josephson devices; SQUID items*
- superconducting devices, custom
- superconducting magnets, cryogen-free
- superconducting magnets, custom
- superconducting magnets, Nb₃Sn
- superconducting magnets, NbTi
- superconducting magnets, other
- superconducting magnets, power supplies for
- superconducting materials, high T_c
- superconducting materials, low T_c
- superconducting materials, single-crystal
- superconducting resonators
- superconducting tape, high T_c
- superconducting tape, low T_c
- superconducting wire, high T_c
- superconducting wire, low T_c
- superconducting wire, multifilament
- superconductivity test instrumentation
- surface analysis services
- surface analyzers, multiprobe
- surface area analyzers
- surface mount assemblies
- surface patterning instruments
- surface preparation systems
- surface resistivity measuring systems
- surface tensiometers
- surface topography microscopy services
- surge suppression equipment
- susceptometers, *also see magnetometers*
- susceptometers, SQUID
- sweep generators, *see function generators*

switches and switching systems
switches, coaxial, *see coaxial switches*
switches, current
switches, high-voltage
switches, matrix
switches, temperature
switches, vacuum
switches, video
synchrotron beamlines
synchrotrons
syntheses, *see inorganic compound syntheses, custom*

T
tachometers
tantalum foil
tantalum plate and rod
tantalum tubing
tantalum wire
targets
targets, accelerator
targets, laser ablation
teaching aids, *see classroom audiovisual materials; classroom demonstration apparatus; planetaria; software, educational; student laboratory equipment; textbooks*
teaching apparatus, *see classroom demonstration apparatus*
teaching laboratory equipment, *see student laboratory equipment*
telemetry equipment and systems
telescopes, alignment
telescopes, astronomical
telescopes, satellite-tracking
temperature chambers
temperature controllers, *also see cryo-temperature controllers*
temperature controllers, on-off
temperature controllers, proportional
temperature controllers, three-mode
temperature fixed points
temperature measuring systems, *see thermometer systems*
temperature programmers
temperature sensors, bimetal
temperature sensors, fiberoptics
temperature sensors, infrared
temperature sensors, resistance
temperature sensors, semiconductor
temperature sensors, thermistor
temperature sensors, thermocouple

temperature standards, fixed-point
temperature transmitters
tensile testers
terminals, *see computer terminals physics majors*
terminators, BNC
terminators, coaxial lines
testing services
textbooks, advanced physics for physics majors
textbooks, elementary physics for physics majors
textbooks, graduate-level
textbooks, high school physics
textbooks, physics and applications, nonscience majors
textbooks, physics for engineering students
textbooks, physics for life-sciences majors
textbooks, physics for science students
thermal analysis equipment
thermal analysis services
thermal cycling systems
thermal properties testing
thermally conductive materials
thermistors, *see temperature sensors, thermistor compensators*
thermocouple ceramic insulators
thermocouple connectors
thermocouple gauge controllers
thermocouple gauge tubes
thermocouple reference junction compensators
thermocouple simulators
thermocouple welding units
thermocouple wire
thermoelectric devices, *see refrigerators, thermoelectric*
thermographic systems
thermogravimetric analyzers
thermoluminescent detectors
thermometer systems, electronic
thermometers, *also see temperature sensors*
thermometers, liquid-in-glass
thermometers, other
thermometers, radiation
thermopiles
thermosensitive labels
thick-film devices
thickness meters
thickness standards
thin films
thin films, high-temperature superconducting
thin-film characterization systems
thin-film coating services
thin-film components
thin-film deposition monitors
thin-film deposition systems
thin-film thickness meters

thin-film thickness sensors
thoriated tungsten wire
thyratron control units
thyratrons
TIG welding, high-vacuum-grade
tilt sensors
time calibrators
time domain instrumentation
time-bases, laboratory, GPS
time-to-digital converters
timers
timers, *also see clocks*
timing generators
titanium foil
titanium plate and rod
titanium sublimation pumps and controllers
titanium tubing
titanium wire
titrators
tools, *also see diamond tools (individual types)*
torque sensors
torque test systems
torque transducers
totalizers
trace gas detectors
training, industrial safety
training, lasers
training, nuclear safety
training, software
training, vacuum technology
transducers, *see individual types*
transfer systems for liquid cryogenes
transformers, *see individual types*
transformers, toroidal
transient digitizers
translators, manual, long travel
translators, micrometer-driven
translators, micrometer-driven, vertical
translators, micrometer-driven, X-Y
translators, micrometer-driven, X-Y-Z
translators, motor-driven
translators, motor-driven, long travel
translators, motor-driven, vertical
translators, motor-driven, X-Y
translators, motor-driven, X-Y-Z
translators, motor-driven, X-Z
translators, polar coordinate
traveling wave tubes
triboelectric devices
tribometers
trigger generators
trigger transformers (high-voltage)
triggered spark gaps
tube fittings, *see fluid-line fittings*
tubing, metal

tunable filters, *see filters, electronic, active*
tungsten foil
tungsten plate and rod
tungsten tubing
tungsten wire
tuning forks
tunneling microscopes, *see scanning tunneling microscopes straight-through*
turbidity sensors
turbomolecular pumps and controllers
tweezers

U
ultrahigh vacuum chambers, surface work
ultrahigh vacuum foil
ultrahigh vacuum gate valves
ultrahigh vacuum pumps
ultrahigh vacuum valves, right-angle
ultrahigh vacuum valves, straight-through
ultrahigh vacuum valves, variable leak
ultrahigh vacuum windows
ultrasonic cleaners
ultrasonic imaging systems
ultrasonic machining
ultrasonic measuring systems
ultrasonic transducers
ultraviolet curing systems
ultraviolet sources
ultraviolet transmittance analyzers
undulator magnet systems
used equipment, *also see instruments, used*
used instruments, *see instruments, used*

V
vacuum bakeout
vacuum bellows, cryogenic
vacuum bellows, other
vacuum bellows, stainless steel
vacuum blowers
vacuum chamber accessories
vacuum chambers, *also see ultrahigh vacuum chambers*
vacuum chambers, custom
vacuum coating systems
vacuum compression ports
vacuum contactors and interrupters
vacuum evaporation sources, *see evaporation sources*
vacuum evaporators, direct heating
vacuum evaporators, electron beam
vacuum feedthroughs, *see feedthroughs*

vacuum fittings, metal-sealed
vacuum fittings, O-ring-sealed
vacuum fittings, quick-connect
vacuum flanges, metal-sealed
vacuum flanges, O-ring-sealed
vacuum flanges, quick-disconnect
vacuum gate valves
vacuum gauge system calibration
vacuum gauges, *see capacitance manometers; ionization gauge tubes; Pirani gauge tubes; spinning rotors; thermocouple gauge tubes*
vacuum greases and waxes
vacuum hose, metal
vacuum hose, plastic
vacuum hose, rubber
vacuum manipulators, precision
vacuum mechanical pump exhaust filters
vacuum mechanical pump oil
vacuum mechanical pump rebuilding
vacuum mechanical pump spare parts
vacuum mechanical pumps
vacuum mechanical pumps, dry
vacuum multiple sample holders
vacuum O-rings
vacuum photodiodes and phototriodes, *see radiation detectors, photoemissive*
vacuum pickup tools
vacuum pumping stations
vacuum pumps, *also see cryopumps; diffusion pumps; ion pumps; turbomolecular pumps*
vacuum pumps, booster, *also see vacuum blowers*
vacuum pumps, diaphragm
vacuum pumps, getter
vacuum pumps, oil-free
vacuum rubber tubing, *see vacuum hose, rubber*
vacuum sample transfer systems
vacuum sealants
vacuum system controller/computer interfaces
vacuum systems, custom
vacuum traps, *see cold traps; molecular-sieve foreline traps*
vacuum ultraviolet optical components
vacuum ultraviolet spectrometers, grazing-incidence
vacuum valve controllers
vacuum valves, *also see ultrahigh vacuum valves*
vacuum valves, back-to-air

vacuum valves, diaphragm
vacuum valves, fast-closing
vacuum valves, other
vacuum valves, right-angle
vacuum valves, straight-through
vacuum valves, variable leak
vacuum viewing ports
vacuum viewing ports, nonmagnetic
vacuum viewing ports, quartz
vacuum viewing ports, sapphire
vacuum waxes, *see vacuum greases and waxes*
vacuum-side connectors
valves, *see individual types*
Van de Graaff accelerators, *see electrostatic accelerators high-purity*
vapor deposition metal slugs, high-purity
variable frequency drives
variable orifice vacuum valves and controllers
variable transformer transducers
variable transformers
velocimeters, laser
velocimeters, particle image
Venturi pumps
vessels, high-pressure
vibration analyzers
vibration isolators
vibration isolators, table-top
vibration meters
vibration sensors
vibration shakers and controllers
vibrometers, laser
video digitizers
video recorders, laboratory
videoscopes
vidicons, infrared
vidicons, visible light
viewers, infrared
viewers, ultraviolet

viscometers
vision systems
VME crates and power supplies
VME modules
voltage dividers
voltage integrators, *see integrators, voltage; magnetometers, fluxmeter*
voltage multipliers, *see analog electronic function modules*
voltage pulse probes, broadband
voltage sources, AC
voltage sources, DC
voltage square rooters, *see analog electronic function modules*
voltage squarers, *see analog electronic function modules spectrum analyzers*
voltage transducers
voltage-to-frequency converters
voltmeters, AC
voltmeters, *also see microvoltmeters; nanovoltmeters*
voltmeters, DC, analog
voltmeters, DC, digital
voltmeters, electrostatic
voltmeters, high-voltage
voltmeters, radio frequency
voltmeters, sample and hold
voltmeters, true RMS
voltmeters, vector
VXI crates and power supplies
VXI modules
VXI modules, *also see amplifiers, VXI*

W

wafer services
wafers, silicon-on-insulator
water heaters

water recirculators
water, high-purity
water-flow switches
wattmeters, *also see power meters*
waveform analyzers, *also see spectrum analyzers*
waveform analyzers, time domain
waveform digitizers
wavefront analyzers
waveguide adapters
waveguide amplitude modulators, *see microwave modulators*
waveguide attenuators
waveguide bends and twists
waveguide crystal detector holders
waveguide directional couplers and power dividers
waveguide flanges and tubing
waveguide movable shorts
waveguide phase shifters
waveguide power dividers, *see waveguide directional couplers and*
waveguide pressure windows
waveguide rotary joints
waveguide switches
waveguide tees and magic tees
waveguide terminations
waveguide tubing, *see waveguide flanges and tubing*
waveguide tuners
waveguide twists, *see waveguide bends and twists*
waveguides, flexible
wavelength detectors
wavelength division multiplexers
wavelength meters
waveplates

waveplates, achromatic
weighing equipment, *also see balances; scales*
welding, *see aluminum welding, vacuum grade; electron beam welding; laser beam welding; TIG welding, high-vacuum grade*
Wheatstone bridges, *see bridges, resistance*
wiggler magnet systems
windows, Brewster-angle
windows, far infrared
windows, infrared
windows, light
windows, ultraviolet
windows, visible
windows, visible, plastic
windows, x-ray, *see x-ray windows*
wire-grid polarizers
wireless sensor links
workstations, computer, *see computer workstations*

X

x-ray accessories
x-ray analysis services
x-ray applications, consulting
x-ray beam position sensors
x-ray calorimeters
x-ray cameras, gated
x-ray cameras, powder
x-ray cameras, single-crystal
x-ray cameras, small-angle
x-ray collimators
x-ray crystals
x-ray detectors, CCD
x-ray detectors, other
x-ray detectors, Si(Li)
x-ray diffractometer thermal stages
x-ray diffractometers

x-ray diffractometers, high-temperature
x-ray equipment service
x-ray fluorescence spectrometers
x-ray imaging systems
x-ray lasers, *see lasers, x-ray*
x-ray microanalysis
x-ray microscopes, *see microscopes, x-ray*
x-ray mirrors
x-ray monochromators, crystal
x-ray multilayers
x-ray optics
x-ray position-sensitive detectors
x-ray power supplies, *see power supplies, x-ray*
x-ray reflectometers
x-ray shutters
x-ray slits
x-ray sources, microfocus
x-ray sources, nuclear-excited
x-ray sources, other
x-ray sources, pulsed
x-ray sources, rotary anode
x-ray spectrometers
x-ray spectrometers, microanalysis
x-ray streak cameras
x-ray tubes
x-ray windows

Z

zero gauss calibration chambers
zeta potential analyzers
zinc selenide
zinc sulfide
zirconia ceramics
zirconium foil
zirconium plate and rod
zone melting apparatus

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