



PI-KEM

ADVANCED MATERIALS and EQUIPMENT

Product List

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PI-KEM

Advanced Materials and Equipment

LABORATORY EQUIPMENT

SPIN COATERS

Precision bench-top units with bowl sizes 7", 8", 12" and 15"

Manual or programmable controls

Also available:

Vacuum chucks-standard and custom designs

Vacuum pumps and air compressors

Fluid Dispensers - manual and automatic

Computer control software

Repair service, spares and accessories

DIP COATERS

For substrates up to 24" long and 18" wide

Manual or microprocessor control

Options include: Infra-red oven

Sintering furnace

Heat controlled solution tank

HOT PLATES

Precision heating for substrates up to 8" diameter

150°C, 200°C, 250°C and 350°C models

UV CURE

Laboratory scale - 6" diameter turntable

Pilot scale - 6" and 12" wide conveyor systems

DIAMOND SAWS

Precision diamond wire and diamond blade saws for dicing ceramics, single crystal substrates, etc.

Spares and consumable service

POLISHING MACHINES

Desk top

3" - 15" options

Spares and consumable service

FURNACES

Range of tube furnaces for temperatures up to 1700°C and multi-zone

Range of muffle furnaces with temperature up to 1800°C.

Standard and customised models.

GLOVE BOXES

Desk top

Stainless steel or transparent construction

Vacuum option

DESKTOP HYDRAULIC PRESS

Range of options with protective screens, manual or electric

Crimping and rolling machines

Pressing dies 3/4" - 3"



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LABORATORY EQUIPMENT Continued.....

TRIBOLOGY TESTING EQUIPMENT Micro-tribometer. Contract sample testing

FERROELECTRIC TEST SYSTEMS Precision Workstations.
Platinum:Silicon wafers

DIGITAL MICROSCOPES Inspection and Metallurgical - inverted and upright models.
Stereo microscopes.
Compact digital microscope
Camera head and accessories available

LABORATORY SUNDRIES

LABORATORY PRODUCTS Crucibles in alumina, boron nitride, magnesia, graphite, silica.
Ceramic tiles, setter plates, furnace tubes, boats, rods etc
Agate Mortars and Pestles

WAFER and SUBSTRATE BOXES Individual wafer carriers - 1", 2", 3" and 4"
Multi wafer containers - 2", 3", 4"
Die/ IC trays
Substrate trays
Membrane Film boxes
Gel Sticky boxes
Rod carriers

PRECIOUS METAL PRODUCTS Gold, Platinum, Silver and precious metal alloy labware including crucibles, boats, dishes, tongs
Precious metal refining service.

HIGH TEMPERATURE ADHESIVES Ceramic adhesives and pastes.
Ceramic potting and casting materials.
Refractory coatings.
Wash-away mounting adhesives.

ENGINEERING CERAMICS Plate, rod, block, etc. or precision machined components and assemblies.
Quantities from prototypes to many thousands.
Sapphire, Ruby, Quartz.
Advanced ceramics including alumina, Macor, boron nitride, magnesia, yttria, pyrophyllite, silicon carbide, silicon nitride, tungsten carbide, Zerodur, zirconia, zirconium phosphate (NZP).

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ADVANCED MATERIALS

THIN FILM COATINGS

Sputter Targets:

High purity base metals, precious metals, alloys
Oxides, cermets, ceramics.
Round, rectangular and custom shapes.
Backing plate and bonding service.

Optical coating materials:

Including high purity oxides, fluorides, sulphides
Multi-component and custom formulations.
As pellets, targets, starter charges, grains etc.

Evaporative coating materials:

High purity metals, alloys, oxides, etc.
As pellets, starter charges, granules, etc

Substrates:

Sapphire	Quartz	Single Crystal.
Ceramic	Silicon	Platinised Silicon.

MOCVD oxide and nitride precursors

SAPPHIRE

Windows for visible and infra-red.
Single crystal substrates in all orientations.
Tubes, rods, insulators, plates, prisms, etc.
Precision components and assemblies.

QUARTZ

Windows, tubes, rods, plates, prisms, precision
components, etc.

OPTICAL WINDOWS AND COMPONENTS

Windows in sapphire, quartz, silicon, glass, BK7,
calcium fluoride, lithium fluoride, germanium.
Graticules and scales.
Microstructures.
Custom lens design and manufacture.

SINGLE CRYSTAL MATERIALS

Oxides, titanates, gallates, aluminates, niobates.
Doped crystals.
Metal single crystals.
As boules, as cut or polished substrates, rods,
vicinal substrates, etc

PRECIOUS METAL PRODUCTS

Gold, Silver and Platinum group metals and alloys.
Available as targets, pellets, wire, mesh, sheet,
grain.
Precious metal refining service.



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ADVANCED MATERIALS Continued.....

SILICON

Diameters 1" - 6" as full box lots (25 wafers) or part boxes.

Type and doping - intrinsic, n-type (P, Sb, As) and p-type (B), also heavy P and B doping.

Orientation - <100>, <110>, <111> and custom.

Off orientation available up to 40°

Resistivity 0.001ohm-cm - 150ohm-cm

Surfaces can be as cut, lapped, etched. Single side and double side polishing offered.

Wafer carriers and boxes for storage available.

POWDERS AND RAW MATERIALS

High purity powders:

Oxides, borides, nitrides, carbides, titanates.

Advanced ceramic powders.

Nanophase powders.

Rare earth oxides and alloys.

Boron materials:

Boron carbide powders and components.

Amorphous boron, boron nitride, TiB₂.

Speciality ceramics:

Multi-component ceramic oxides and perovskites as powders or targets, including:

YBCO for HTc superconductors.

CGO, LSM, NiO:YSZ for solid oxide fuel cells.

PZT, BST for ferroelectrics, piezo electrics.

HTc SUPERCONDUCTOR TECHNOLOGY

Single Crystal substrates.

HTc superconductor powders and precursors.

Sputtering and laser ablation targets.

SOLID OXIDE FUEL CELL TECHNOLOGY

Anode, cathode and interconnect powders.

Zirconia electrolyte sheets.

Setter tiles.

High temperature ceramic adhesives and coatings.

PHOTO VOLTAIC PRODUCTS

Sputter targets:

Transparent coating oxides including In₂O₃:ZnO,

In₂O₃:Gd₂O₃:SnO₂ etc

Alloy targets including In:Sn, In:Sb, Zn:Al etc

Wafers:

Silicon III-V, II-VI, SiC, Ge etc

Also see laboratory equipment section.

PRINTED ELECTRONICS

Oxide precursors, mainly metal - 26 elements available.



PI-KEM

Advanced Materials and Equipment

The Company...

PI-KEM was established in 1991 to offer Advanced Materials to both academic and research and industrial applications.

With more than twenty five years experience in marketing speciality inorganic chemicals and advanced ceramics, PI-KEM now represents several European and USA producers and co-operates with many other specialist suppliers of high-tech materials and components.

PI-KEM offers service for...

- Supply of Advanced Materials and Laboratory Equipment
- Sourcing of Ceramic Materials, Components and Speciality Inorganic Chemicals.
- Marketing studies and consultancy

We would also be pleased to consider possible distributor co-operation with other producers of related materials or laboratory equipment.

PI-KEM acts as distributor for several European and USA producers including:

APPLIED CERAMICS, ISRAEL

AREMCO PRODUCTS INC. USA

CENTER FOR TRIBOLOGY INC. USA

CHEMAT TECHNOLOGY INC. USA

CRYSTEC GmbH, GERMANY

ELECTRONIC MICRO SYSTEMS LTD. UK

KERAFOL, GERMANY

LTS CHEMICALS, INC. USA

MTI CORPORATION, USA

PRAXAIR SPECIALITY CERAMICS INC. USA

PRECISION OPTICS GERA, GERMANY

RADIANT TECHNOLOGIES INC. USA

RUBI PRECIS/ MICROPIERRE, FRANCE

SILTRONIX, FRANCE

SPECIALITY COATING SYSTEMS INC. USA

SURFACENET GmbH, GERMANY

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