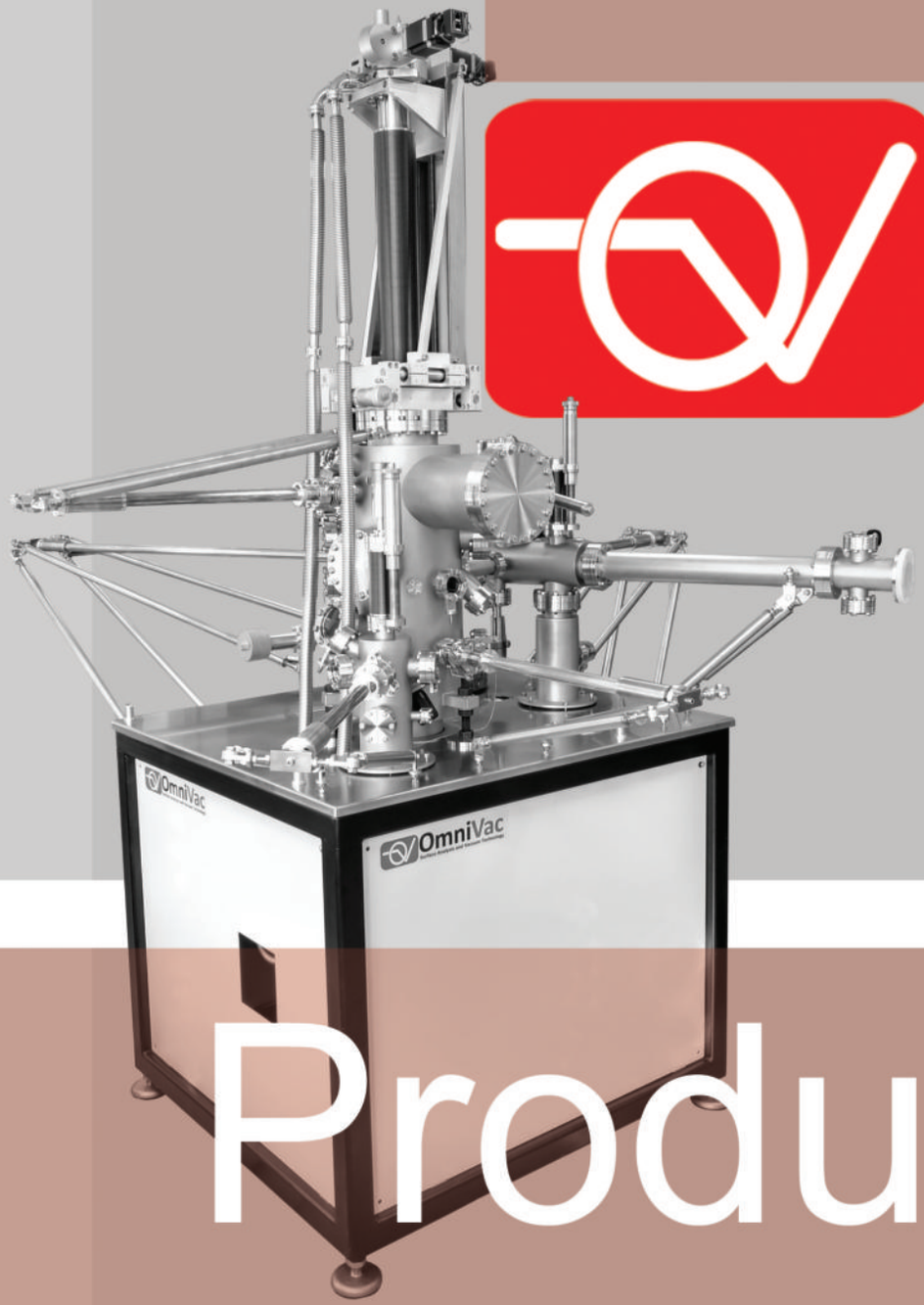
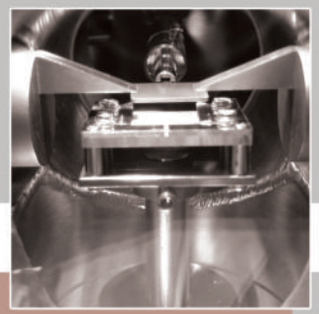
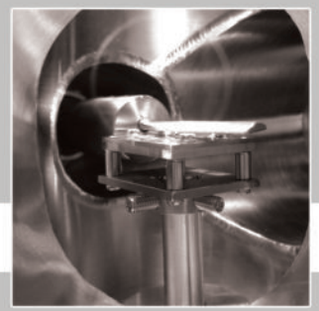
www.omnivac.de



OmniVac

Surface Analysis and Vacuum Technology





Products 2018

www.omnivac.de

Small UHV System

customized
design

OmniVac
Surface Analysis and Vacuum Technology

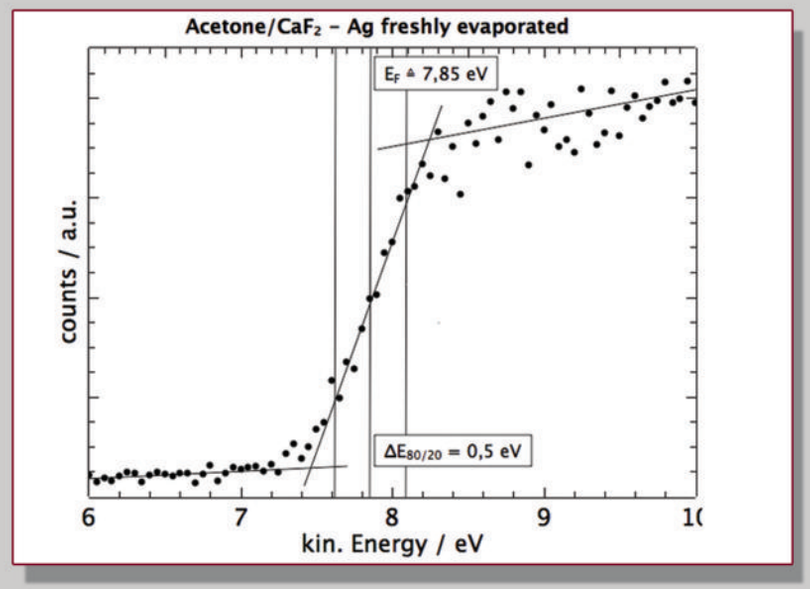
SCIENTIFIC EQUIPMENT

Inverse photoelectron spectroscopy system (IPES)

IPES 3000

- ► GM-tube UV-Detector
- ► standard configuration
  Acetone/Argon + CaF_2 window
  resolution < 0.5 eV *
- ► other configurations possible

* In combination with BaO-filament electron source



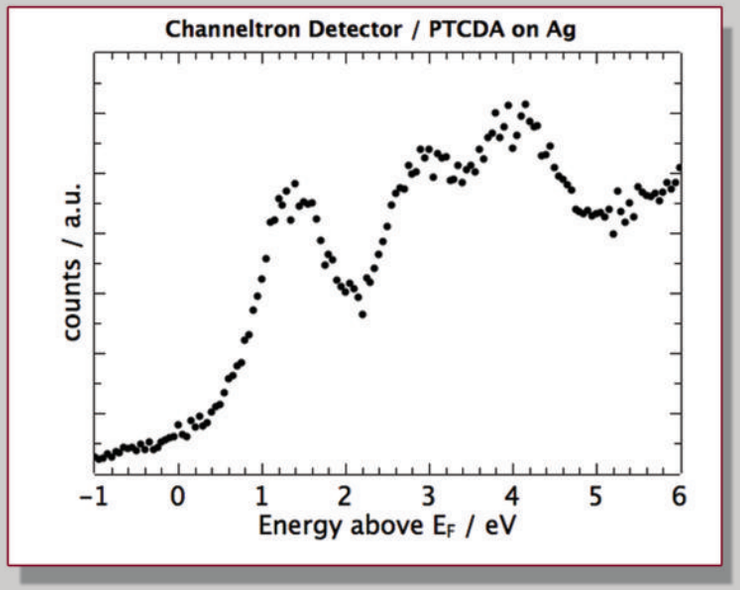
Density of unoccupied electronic states at the Fermi Energy of a silver thin film measured with IPES 3000 detector.

• SCIENTIFIC EQUIPMENT

Inverse photoelectron spectroscopy system (IPES)

IPES 2000

- ► channeltron UV-Detector
- ► standard configuration
  NaCl/SrF_2
  resolution 0.9 eV *
- ► other configurations possible

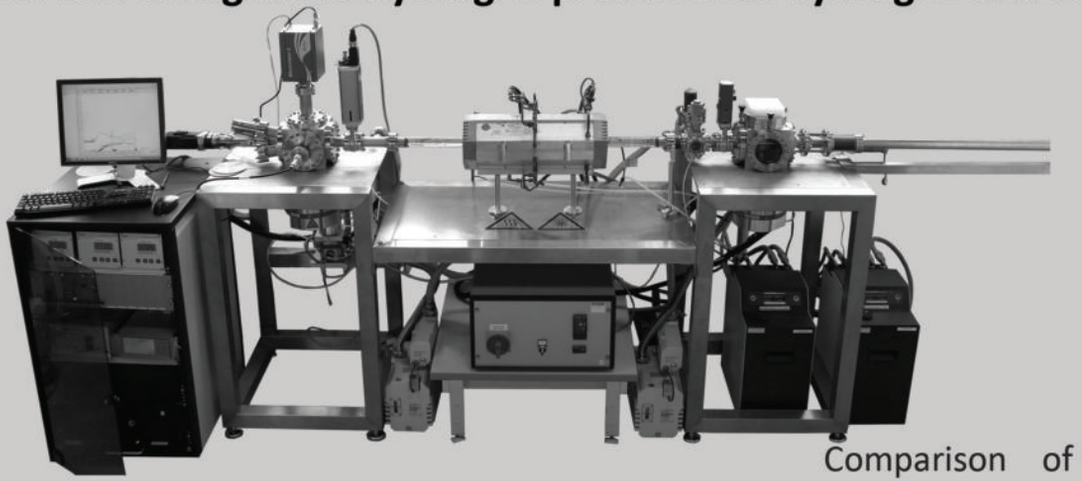


Density of unoccupied electronic states of the organic semiconductor PTCDA measured with IPES 2000 detector.

* In combination with BaO-filament electron source

SCIENTIFIC EQUIPMENT

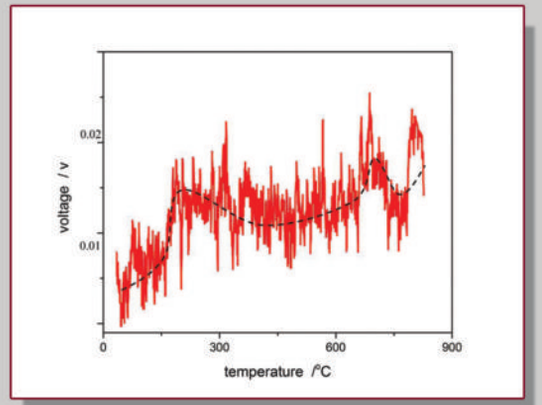
TDA-MS setup with precise temperature control and low background hydrogen pressure for hydrogen detection in metals

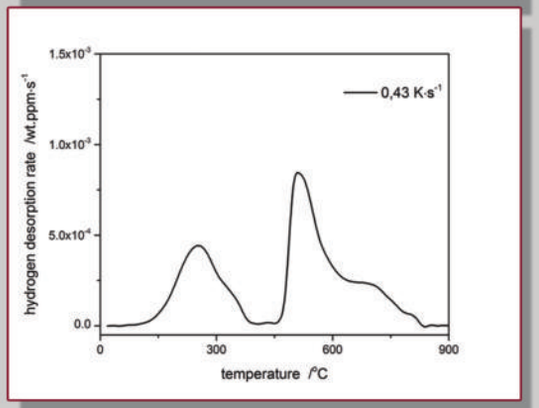


Comparison of measurement quality from the new OmniVac TDA-SM with those from a standard thermal conductivity detector.

- ▶ **fast entry load lock**
- ▶ **UHV conditions**
- ▶ **low background hydrogen pressure**
- ▶ **precise temperature control**
- ▶ **calibration with certified gas leaks**
- ▶ **quartz glass reactor chamber**
- ▶ **non-metal materials in the analysis volume**
- ▶ **fast cooling rates**

standard thermal conductivity detector (TCD)





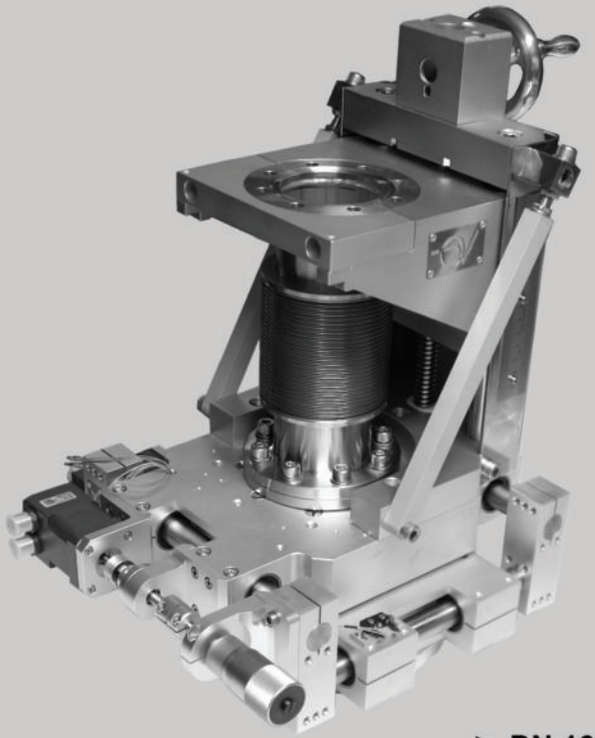
new OmniVac UHV TDA-MS

"Ultra high vacuum high precision low background setup with temperature control for thermal desorption mass spectroscopy (TDA-MS) of hydrogen in metals". S. Merzlikin, S. Borodin, D. Vogel, M. Rohwerder. Talanta. Volume 136, 1 May 2015, Pages 108-113.

OmniVac
Surface Analysis and Vacuum Technology

• HIGH PRECISION UHV MANIPULATORS

HPM 100/200



- ► +/- 12,5 mm XY-range
- ► +/- 25 mm XY-range
- ► up to 1000 mm Z-range
- ► DN 160 CF mountiong flange
- ► DN 63 CF traveling flange
- ► fully motorized

HPM 100, +/- 12.5 mm XY-Manipulator

Design	DN 160 CF flange mounted XY-motion module
XY-range	+/- 12,5 mm (full square range)
minimum Z-distance	260 mm
maximum Z-range	1000 mm
Resolution	5 µm (manual) 0.5 µm (motorized)
Repeatability	5 µm (manual) 1 µm (motorized)
Max. speed	2 mm/sec

HPM 200, +/- 25 mm XY-Manipulator

Design	DN 160 CF flange mounted XY-motion module
XY Range	+/- 25 mm XY (full square range)
minimum Z-distance	260 mm
maximum Z-Range	1000 mm
Resolution	5 µm (manual) 0.5 µm (motorized)
Repeatability	5 µm (manual) 1 µm (motorized)
Max. speed	2 mm/sec

• HIGH PRECISION UHV MANIPULATORS

5/6 Axes Cryo-Manipulator

HPM Cryo-cooling/heating

He- cooling	<3 K (5 axes), <5 K (6 axes)
He- consumption	0.5 l/h at > 10 K, 1 l/h at lowest temperature
Cryostat	open / closed cycle available
Indirect resistive heating	< 400 K

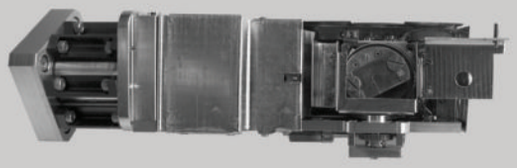
HPM Cryo-linear manipulation

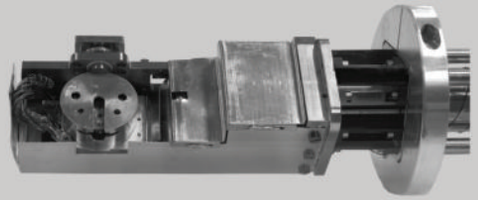
Design	DN 160 CF flange mounted XY-motion module
Range (full square range)	+/- 12,5 mm or +/- 25 mm XY, 500 mm Z
Resolution	5 µm (manual) 0.5 µm (motorized)
Repeatability	5 µm (manual) 1 µm (motorized)
Max. speed	2 mm/sec

HPM Cryo-rotational manipulation

Z-rotation (R1 axis)	full 360°
Azimuthal rotation (R2 axis)	+/- 90°
Sample tilt (R3 axis)	-15° - +65°
Angular resolution	0.1°

HPM Cryo





Open cycle cryostat

- ► **lowest temperature < 3 K**
- ► **temperature range 3 K - 400 K**
- ► **fast cooling rate RT to 10 K < 15 min**
- ► **sample current measurement dark current < $5 \cdot 10^{-14}$A**
- ► **additional sample stage**

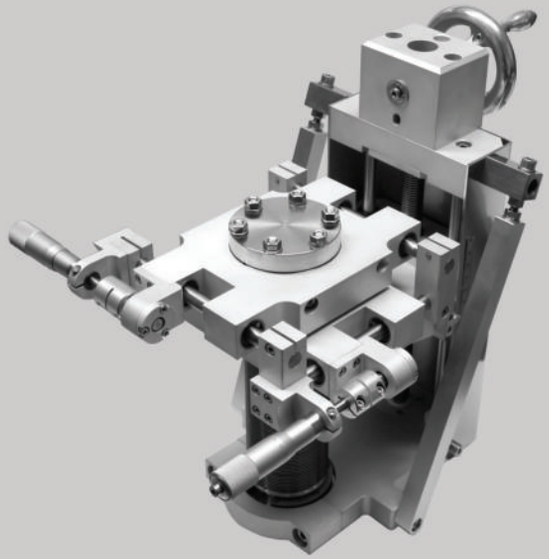
Closed cycle cryostat

- ► **lowest temperature < 5.5 K**
- ► **temperature range 5.5 K - 400 K**
- ► **fast cooling rate RT to 6 K < 4 hours**
- ► **sample current measurement dark current < $5 \cdot 10^{-14}$A**
- ► **additional sample stage**
- ► **temperature stability < 0.2 K/ 6 days**

HIGH PRECISION UHV MANIPULATORS

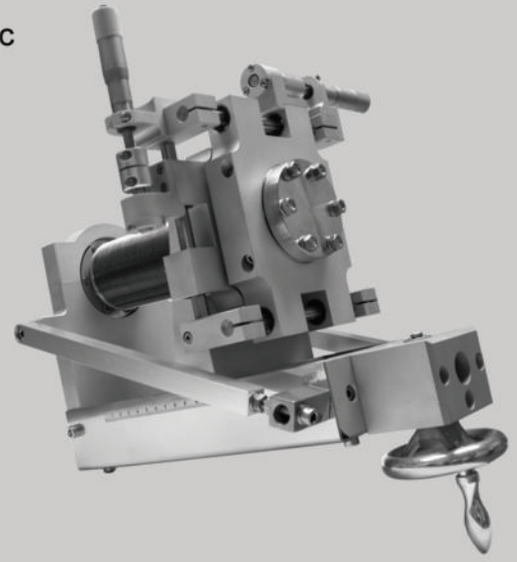
Mini High Precision Manipulator

HPM 40



HPM 40, +/- 12.5 mm XY-Manipulator

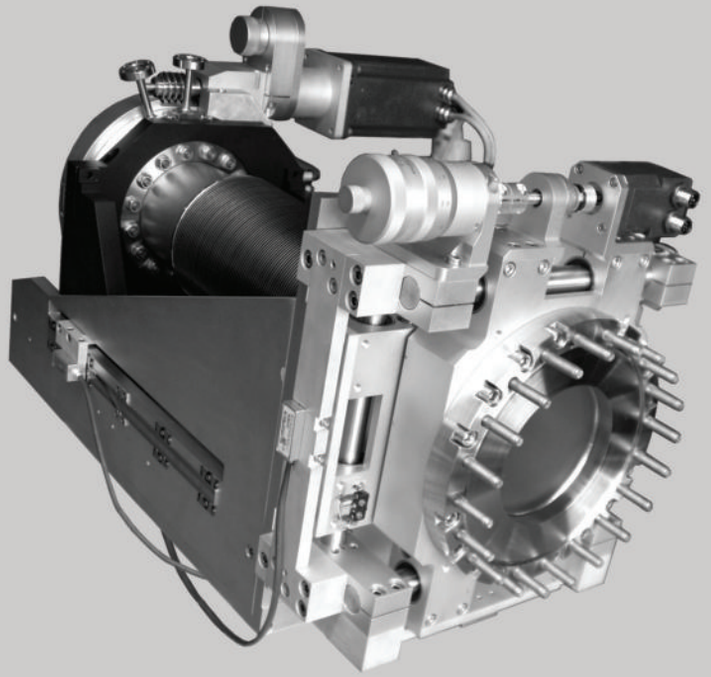
Design	CF40, CF63, CF100 mounting flange XY-motion module with CF40 traveling flange
Range *(full square range)*	+/- 12,5 mm
Resolution	+/-5 µm (manual)
Repeatability	+/-5 µm (manual)
Max. Z-speed	2 mm/sec



- ► +/- 12,5 mm XY-range
- ► CF40 traveling flange
- ► up to 600 mm Z-range
- ► CF40, CF63, CF100 mounting flanges

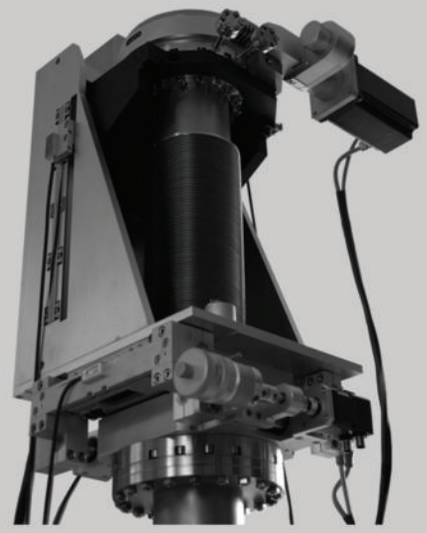
HIGH PRECISION UHV MANIPULATORS

HPM 100L **reinforced structure**



Design	reinforced design for heavy loads
XY-range	±12,5/±25 mm (full square range)
max. Z-range	750 mm
travelling flange	CF 100
Resolution	5 µm (manual) 0.5 µm (motorized)
Repeatability	5 µm (manual) 1 µm (motorized)
Max. speed	2 mm/sec

- **reinforced structure**
- **CF 150 mounting flange**
- **CF 100 travelling flange**
- **fully motorized**
- **with optical position encoders optionally**
- **±12,5/±25 mm XY-Range**



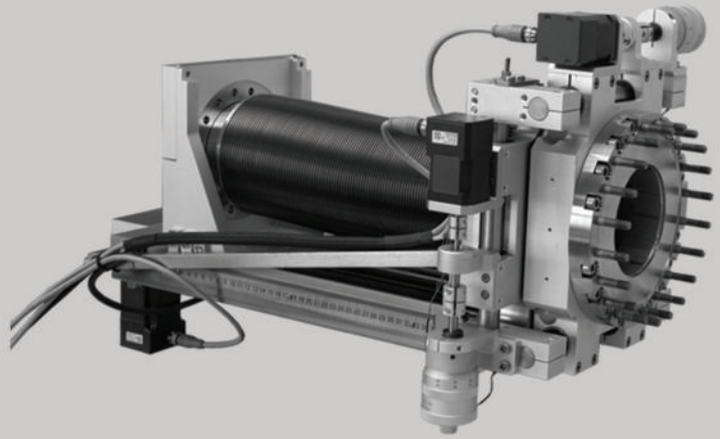
• HIGH PRECISION UHV MANIPULATORS

HPM 100S

compact design

HPM 100S, +/- 12.5 mm XY-Manipulator

Design	DN 100/160 CF flange mounted XY-motion module
XY-range	±12,5 mm (full square range)
minimum Z-distance	220 mm
maximum Z-range	750 mm
travelling flange	CF63/100
Resolution	5 µm (manual) 0.5 µm (motorized)
Repeatability	5 µm (manual) 1 µm (motorized)
Max. speed	2 mm/sec



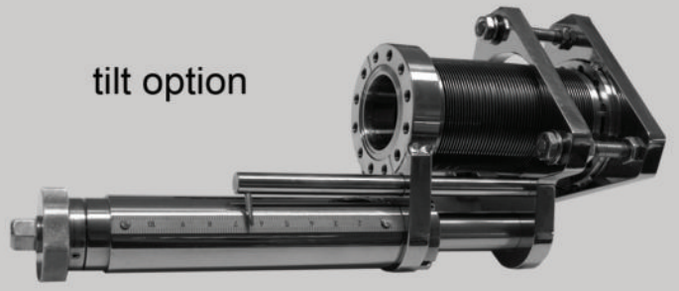
- ► compact design
- ► minimum Z-distance 220 mm
- ► ±12,5 mm XY-range
- ► DN 160 CF
- ► fully motorized

HIGH PRECISION UHV MANIPULATORS

ZM 50/75/100/150

Design	CF40 mounting and traveling flange
Range	50, 75, 100 or 150 mm
Resolution	0.5 mm (manual)
Repeatability	0.5 mm (manual)

tilt option



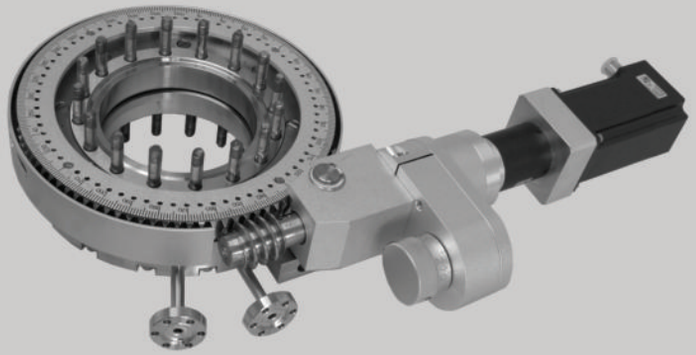
standard

- **CF63 mounting flange and CF 40 traveling flange option**
- **tilt option**
- **CF16 mounting and traveling flange**

• HIGH PRECISION UHV MANIPULATORS

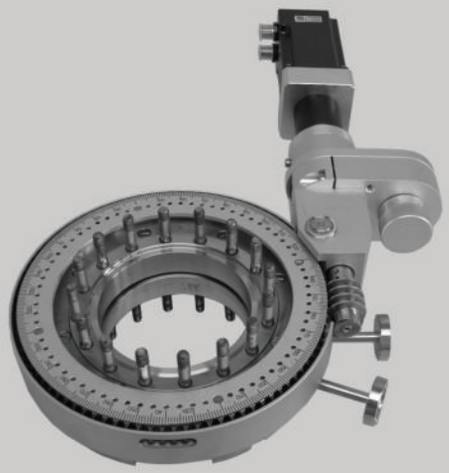
Differentially pumped rotary Feedthrough CF100/63

DPRF 63/100



	DPRF 63	DPRF 100
mounting flange	CF 63	CF 100
rotating flange	CF 63	CF 100
open diameter	68 mm	101 mm
height	48 mm	47 mm
weight	~ 10 kg	~ 6 kg
pumping flanges	CF 16	CF 16

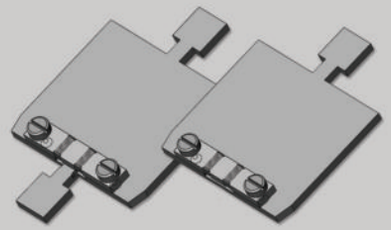
- ► use of ion pump on 2nd stage possible
- ► hand wheel or stepping motor driver
- ► fully bakeable up to 150° C
- ► mounting and rotation flange tapped
- ► resolution < 0,5° (motorized <0,05°)
- ► repeatability < 0,5° (motorized <0,05°)
- ► optionally with optical angular encoders
- ► CF 100 or CF 63
- ► motorized
- ► pressure raise in 10^{-10}mbar range



SAMPLE HOLDERS

SH 100 SH 120 Flag style with thermocouple Cameca SH 300



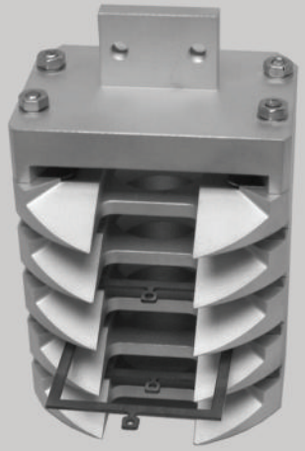
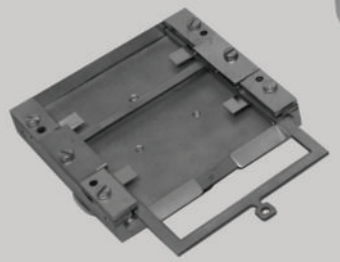
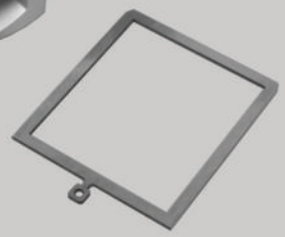


Sample holders flag style from different materials: stainless steel, Mo, Ta, Cu

OmniVac sample holders with integrated thermocouple and heater (6 electrical contacts):
up to 1 inch sample size, high temperature applications (1000° resistive heater (SHR 100), 2000° e-beam heater (SHR 120), LN2 cooling option

OmniVac sample holders for different applications:
OmniVac sample holder with adaptation for Omicron/Specs holders
OmiVac sample holder with quartz microbalance sensor
OmniVac sample holder with faraday cup
OmniVac sample holder with oxygen resistive heating
OmniVac small sample holder with integrated thermocouple
(size similar to Omicron sample holder)

Customized sample holders for different applications

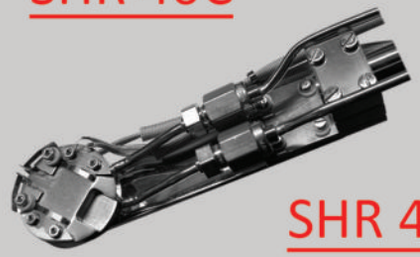




Customized sample holder

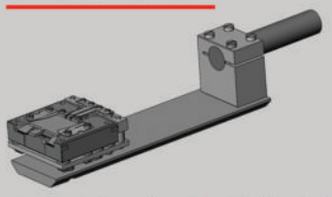
OmniVac
Surface Analysis and Vacuum Technology

• SAMPLE HOLDER STAGES FOR MANIPULATORS

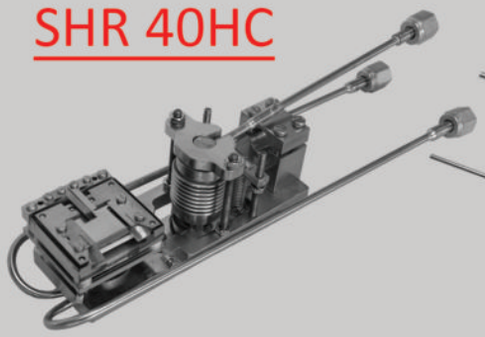
SHR 40C



SHR 40H

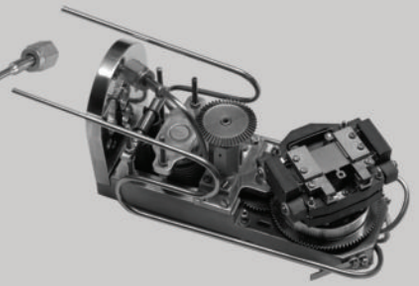


SHR 40HC

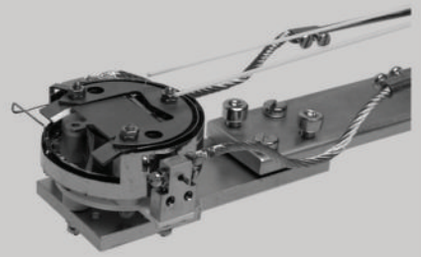


For flag style sample holder

SHR 200

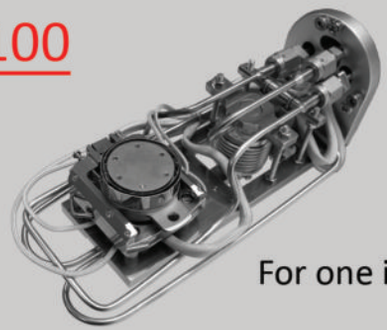


SHR 2000



Stages for different sample holders (up to 6 electrical contacts): flag style (Omicron, Specs)
High temperature stages: 800° resistive heating, 2200° e-beam heating
Low temperature stages: -170° LN2 cooling, 3.5K He cooling with open and 5.5K closed cycle cryostat

SHR 100



For one inch samples

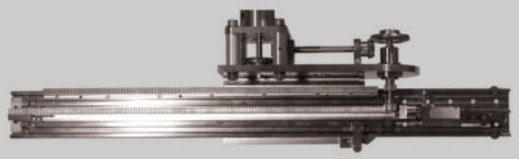
SHR 300

Stages for different 1“ sample holders (up to 6 electrical contacts): OmniVac, Prevac, Leybold
High temperature stages: 800° resistive heating, 2200° e-beam heating
Low temperature stages: -170° LN2 cooling, 3.5K He cooling with open and 5.5K closed cycle cryostat

Stage	Sample holder	Heating	Cooling
SHR 40C	flag style	—	LN_2
SHR 40H	flag style	indirect resestive up to 800°C	—
SHR 40HC	flag style	e^--beam up to 1200°C	LN_2
SHR 200 full azimuth rotation	flag style	e^--beam up to 800°C radiation up to 600°C	LN_2
SHR 2000	flag style	e^--beam up to 2200°C	—
SHR 100	OmniVac, Prevac	depends on sample holder	LN_2
SHR 300	Leybold		—

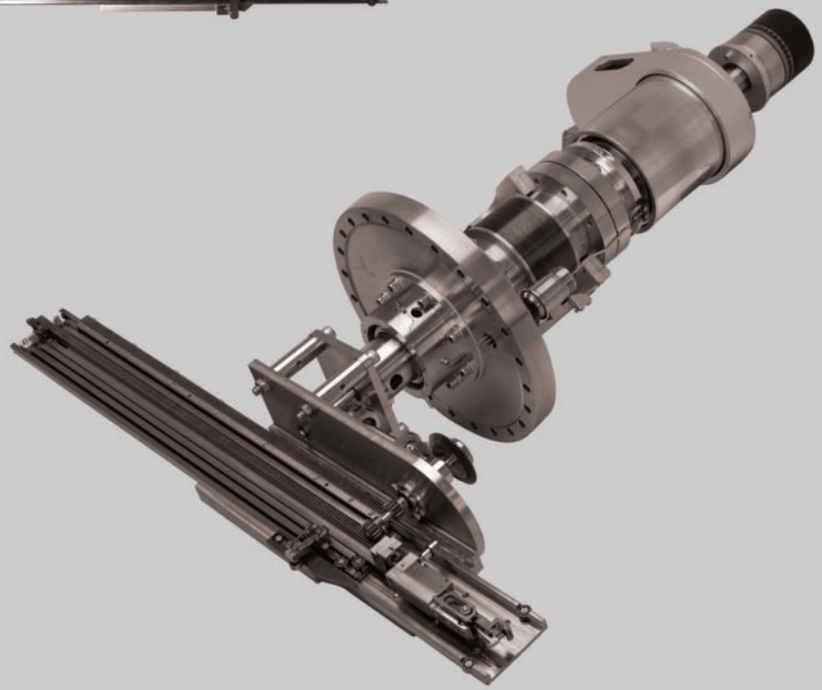
SAMPLE TRANSFER TOOLS

- Non-magnetic mechanical linear sample transfer (up to 1000mm transfer length), optionally with rotation
- Magnetic linear sample transfer with rotation (up to 1000mm transfer length)
- Radial distribution sample transfer



RDTA

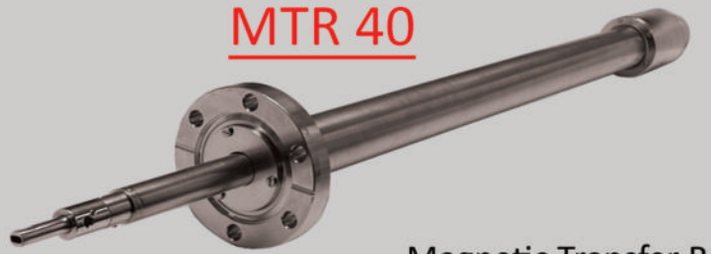
RDTTA



SAMPLE TRANSFER TOOLS

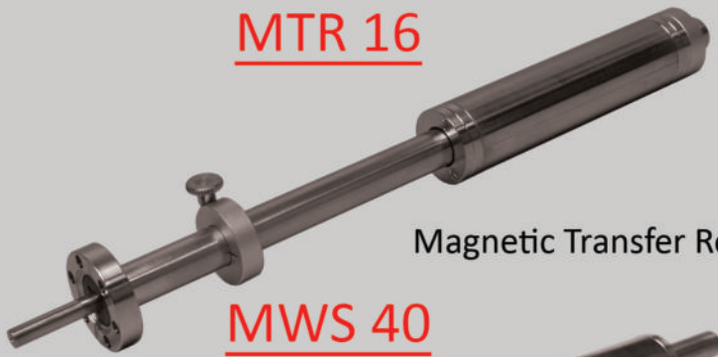
- **Magnetically coupled wobble stick**
- **Grippers for different sample holders (Flag Style, OmniVac, Leybold, Cameca etc.)**

MTR 40



Magnetic Transfer Rod, CF 40

MTR 16



Magnetic Transfer Rod, CF 16

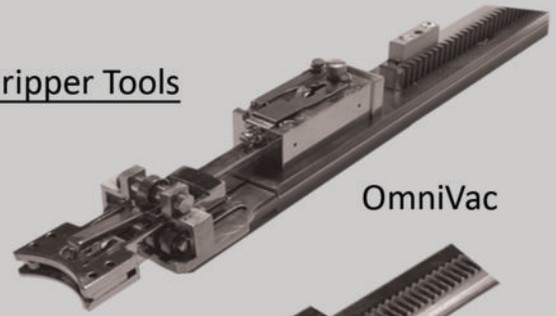
MWS 40

Magnetic Wobble Stick, CF 40

MTDR 40

Magnetic Transfer Rod
with internal Axis, CF 40

Gripper Tools



OmniVac

Cameca

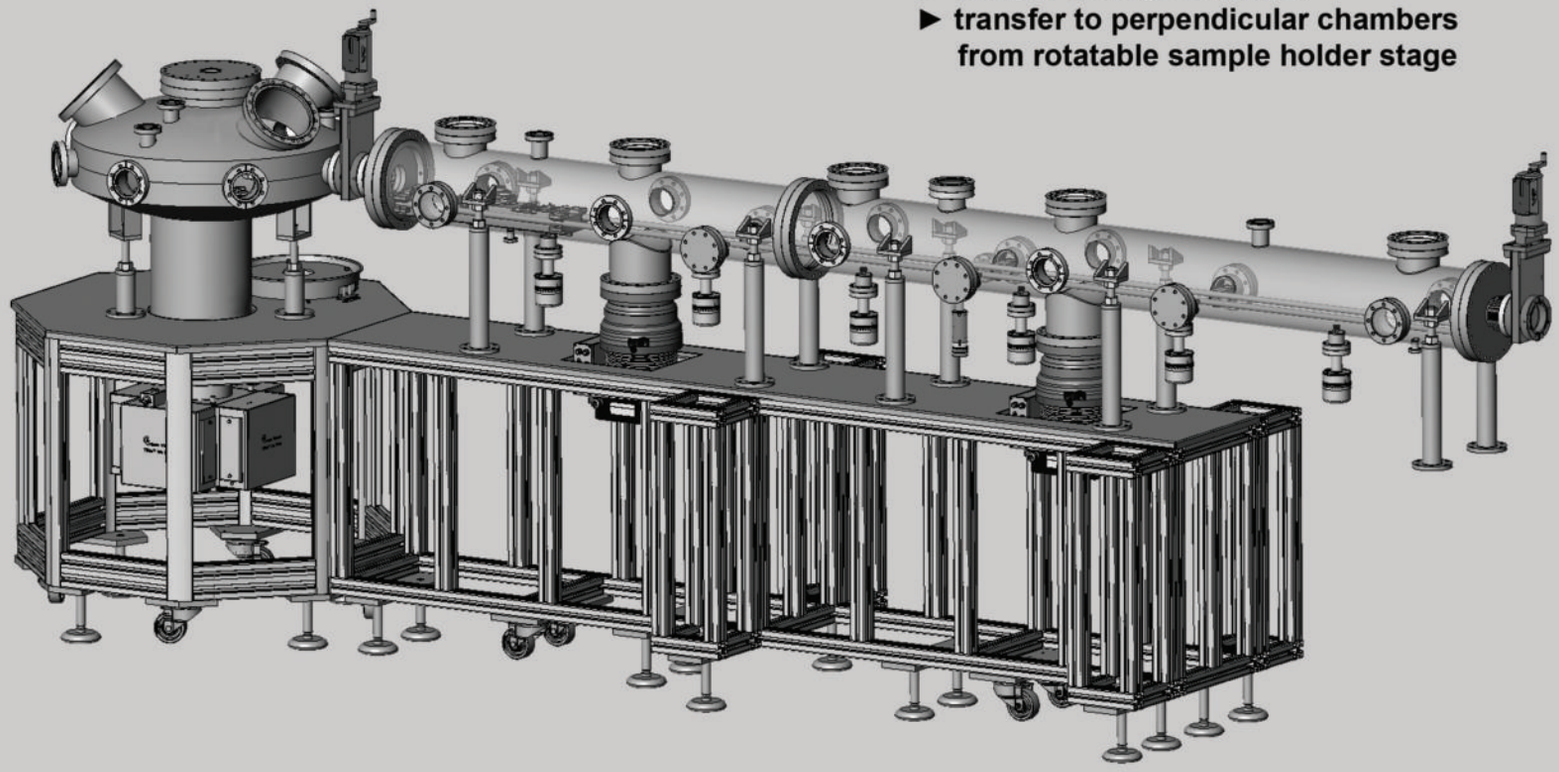
flag style

SAMPLE TRANSFER TOOLS

Linear UHV transfer tunnel with mechanical or magnetic movement mechanism for flag style/OmniVac/Cameca sample holders

optionally with

- ► **fast entry Load Lock chamber**
- ► **sample storage chamber**
- ► **transfer to perpendicular chambers from rotatable sample holder stage**



• EVAPORATORS

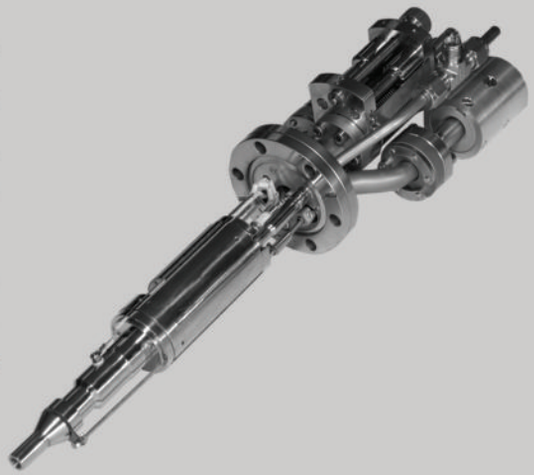
Single pocket thermal evaporator

EV 100

- Standard thermal evaporator up to 1500°C with water cooling.
- Evaporation from 6 cm^3 crucible.
- Materials e.g. Ag, Au, Pt, organic dyes etc.
- Temperature measurement via spring loaded type K thermocouple.
- Optionally up to 2000°C with additional cooling shrouds.

Electron beam evaporator

EBV 100



- Electron beam evaporator for evaporation of high temperature melting materials like Fe, Mo, Wo, Ta from rods or crucibles with inlay.
- PID control of the evaporation rate possible via flux monitoring.
- Water cooling for reduction of outgassing.

Four pocket organic evaporator

EV 300

- 4-pocket evaporator for co-evaporation of up to three materials at one time from crucibles.
- Water cooled assembly for low crosstalk and outgassing reduction.
- Temperature measurement via type K thermocouple for each crucible.

Water cooled quartz microbalance sensor for thinkness control

QMB 100

- Water cooled Microbalance for standard 6 MHz industrial quartzes for thin film grow monitoring.

ELECTRON / ION / LIGHT / ULTRAVIOLET SOURCES

Non focused X-ray source

XRS 100

- Dual anode (Al/Mg) X-ray source for non-monochromize X-ray photoemission.
- Power 300 W for Mg, resp. 600 W for Al.
- Lean design to allow for alignment via external port aligners.

Non focused ion source

IS 100

- Extractor type ion souce for sample or STM tip cleaning.
- Direct gas inlet to operate at chamber pressures of 10^{-6}-10^{-5} mbar.
- Ar but also reactive gas sputtering possible.
- Ion energy up to 5 keV.
- Customized lengths available.

Flood source

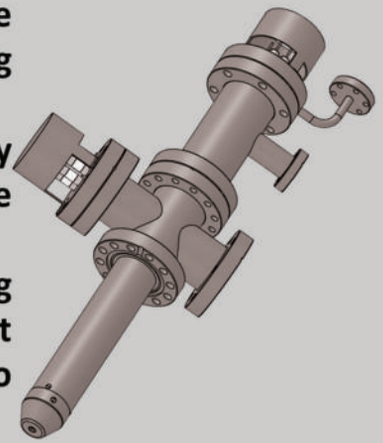
FS 100

- Flood source for charge neutralization of positively charged samples, e. g. in XPS or SIMS experiments.
- Two energy ranges (10 eV, 500 eV) available.
- Possibility for remote control of the energy via PC.

Differentially pumped focused ion source with rastering

IS 200

- Differentially pumped extractor type ion source for sample or STM tip cleaning or depth profiles.
- The additional pumping possibility allows for operating at chamber pressure of 10^{-8} mbar.
- Argon but also reactive gas sputtering is possible. Ion energy up to 5 keV. Spot and scanning-mode with raster size up to 10 mm.



• ELECTRON / ION / LIGHT / ULTRAVIOLET SOURCES

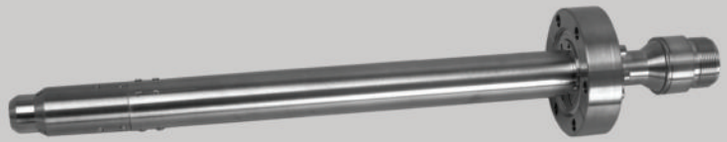
Low energy electron source

ES 100

- ► energy range 5-200 eV
- ► BaO filament
- ► low energy spread (<280 meV)
- ► ≤15 μA emission
- ► small focus
- ► XY-deflection
- ► stable output
- ► CF 40 mounting flange

PS-ES 100

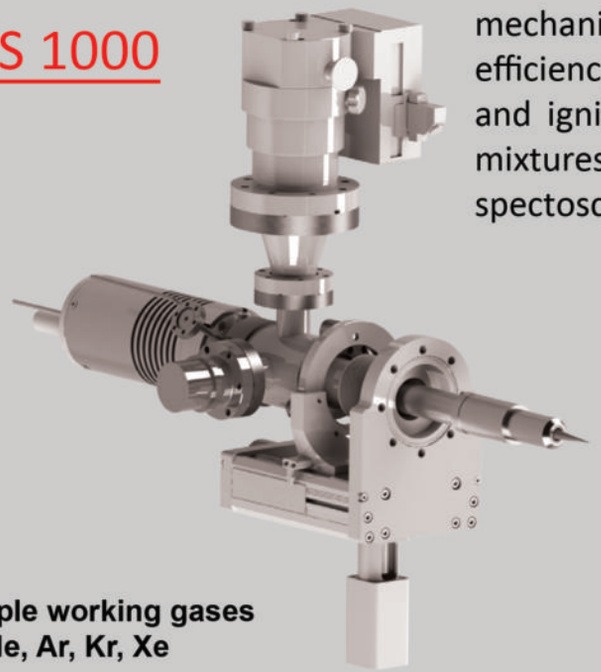
- energy range 1-200 eV
- all necessary driving voltages
- filament protection (ramping)
- USB Interface



• ELECTRON / ION / LIGHT / ULTRAVIOLET SOURCES

Ultraviolet source

UVS 1000

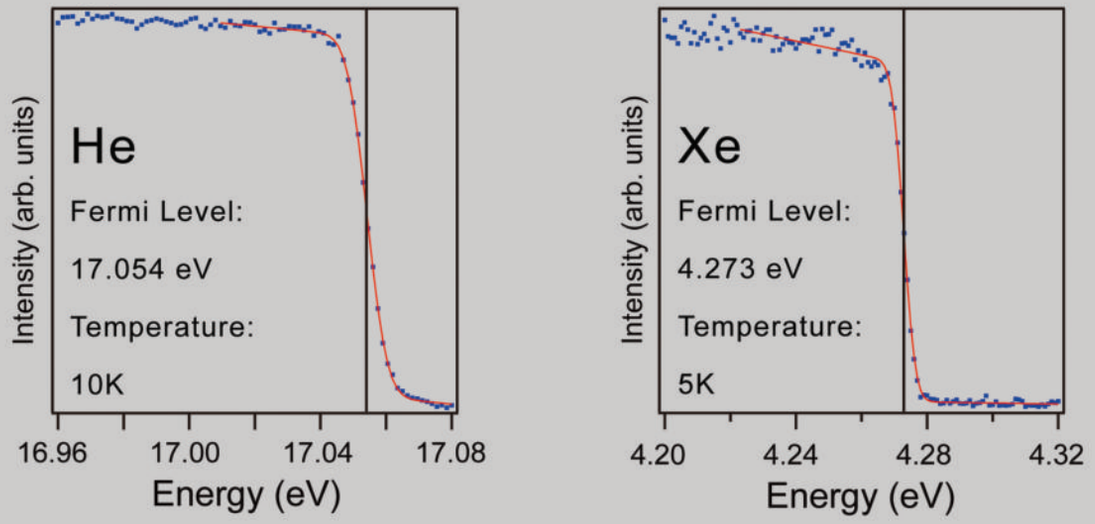


The new UVS 1000 is an ultra-high efficiency UV source based on plasma local field mechanism and solid RF source technology. It provides orders of magnitude higher efficiency than traditional plasma-based UV sources. The UVS 1000 is an electrode-free and ignition-free universal UV source, which can work with various gases and gas mixtures. It opens access to a broad range of applications, such as photoemission spectoscopy, mass spectroscopy, atomic absorption spectroscopy etc.

- ► **multiple working gases He, Ne, Ar, Kr, Xe**
- ► **photon energy 8.4 eV-40.8 eV (30 nm- 147 mm)**
- ► **photon flux > 5 E 17 photons/Sr sec**
- ► **resolution < 1 meV**
- ► **bakeable to 120°C**

PS-UVS 1000

- compact solid RF source driven by 24 V / 200 W power source



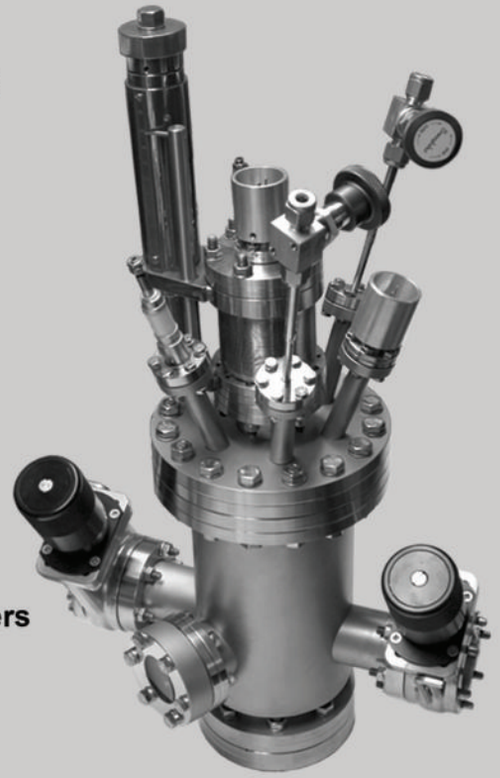
Spectrum excited by He and Xe rediation

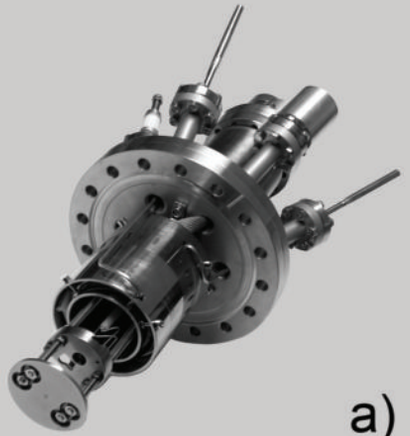
HIGH TEMPERATURE EQUIPMENT

- High temperature IR-oven
- High temperature high pressure reactors (for catalysis)
- Sample laser heater

- High temperature high pressure reactors

► pressure from UHV up to 20 bar
► temperature up to 800°C
► direct sample temperature measurement
► with sample cooling options
► IR/Laser/Inconel- Heater
► with cooling cryo-shroud
► for flag style/OmniVac/Cameca sample holders
► with gas mix control
► with CO filters





a)

b)

Active reactor volume
a) opened for sample transfer and
b) closed for temperature/atmosphere treatment.

UHV-, HV- SYSTEMS

Design and production of UHV-Chambers:

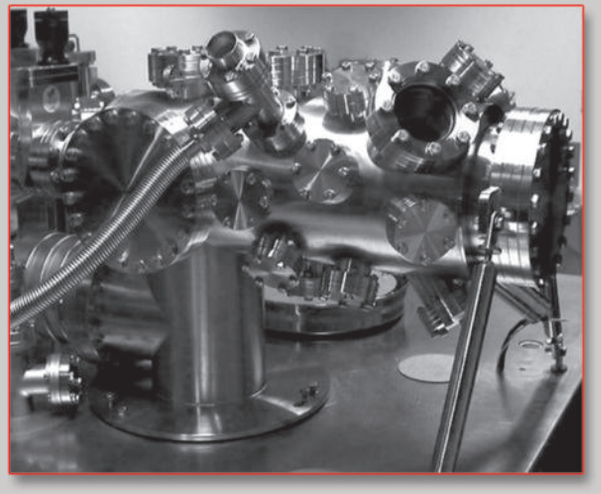
- sample analysis chambers (Mu-metal optional)
- sample preparation chambers, sample storage chambers
- sample transfer chambers (linear and radial distribution chambers)
- fast entry loadlocks, high temperature/pressure chambers for sample treatment
- sample cleaver chambers

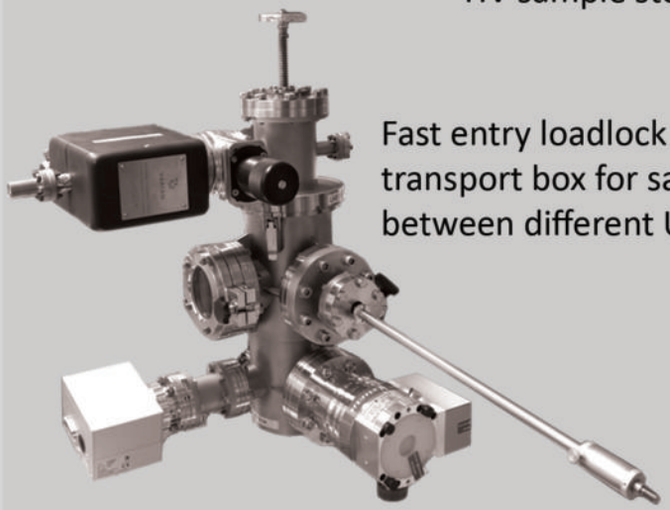
Design and production of HV-Chambers:

- sample transfer chambers
- sample storage chambers
- chambers for electrochemical sample preparation

HV sample storage chamber

Preparation chamber with various flanges for evaporation cells, sputter sources, LEED etc.





Fast entry loadlock with mounted transport box for sample holder transfer between different UHV systems

UHV storage chamber with carousel mechanism for OmniVac or flag style sample holders

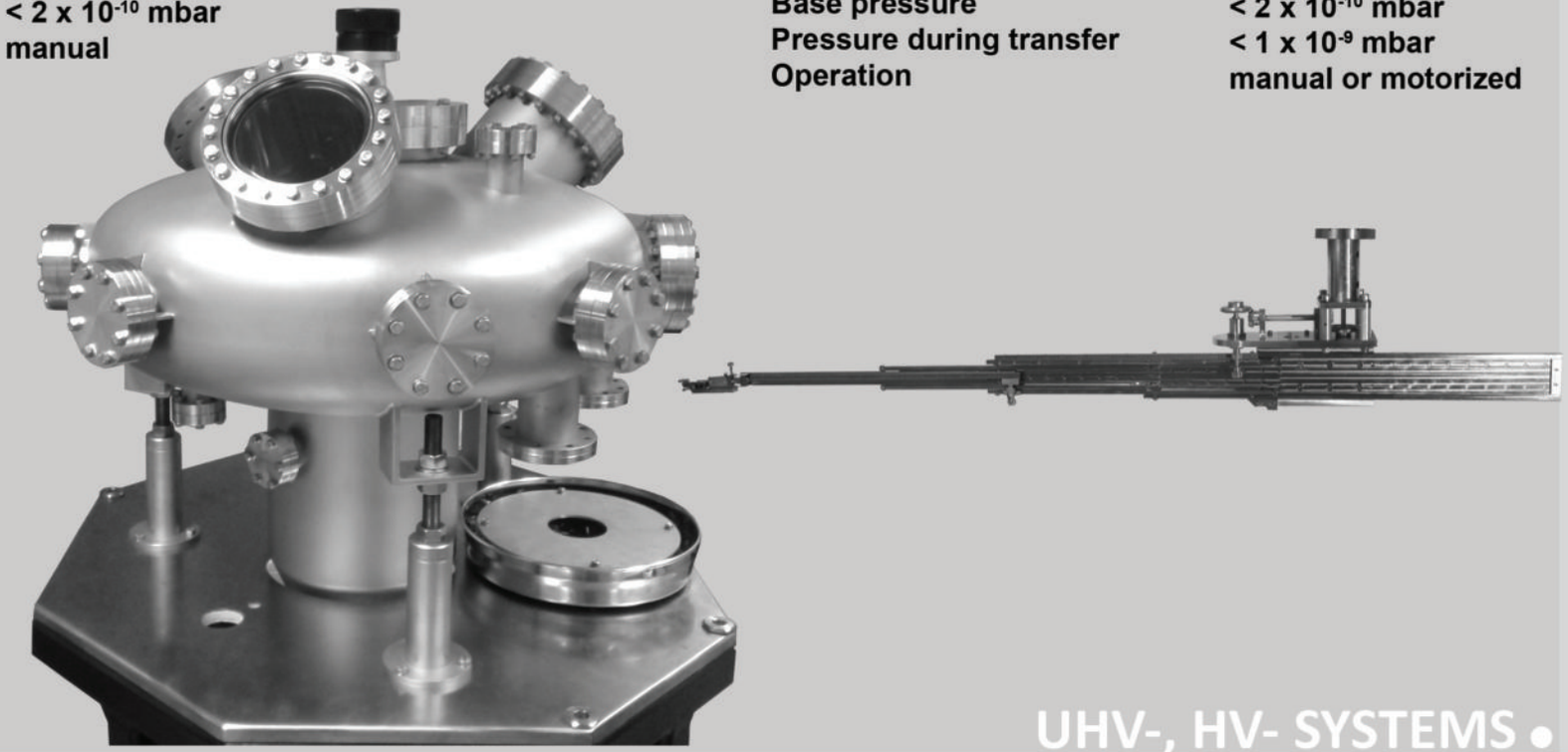
• UHV-, HV- SYSTEMS

RDC 700 UHV Distribution Chamber with standard transfer arm

Chamber diameter	700 mm
Maximum z-transfer	475 mm
Rotation	360°
Flanges	up to 8 DN 63 CF flanges
Vacuum pump	Ion getter pump
Base pressure	< 2 x 10^{-10} mbar
Operation	manual

RDC 820 UHV Distribution Chamber with telescopic transfer arm

Chamber diameter	≤700 mm
Maximum z-transfer	820 mm
Rotation	360°
Flanges	DN 100CF, DN 63CF
Vacuum pump	Ion getter pump/TSP
Base pressure	< 2 x 10^{-10} mbar
Pressure during transfer	< 1 x 10^{-9} mbar
Operation	manual or motorized

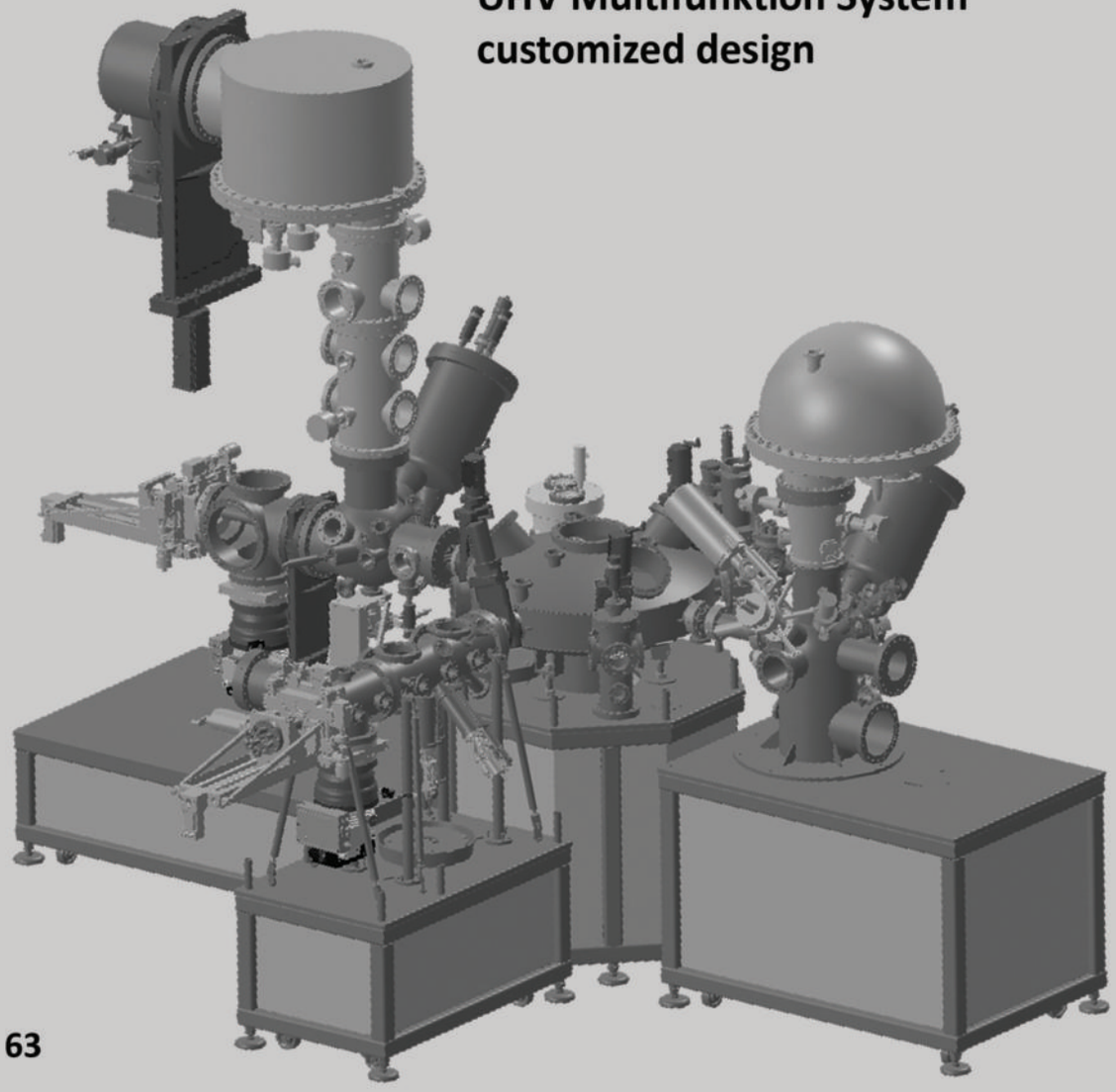


• UHV-, HV- SYSTEMS

Included:

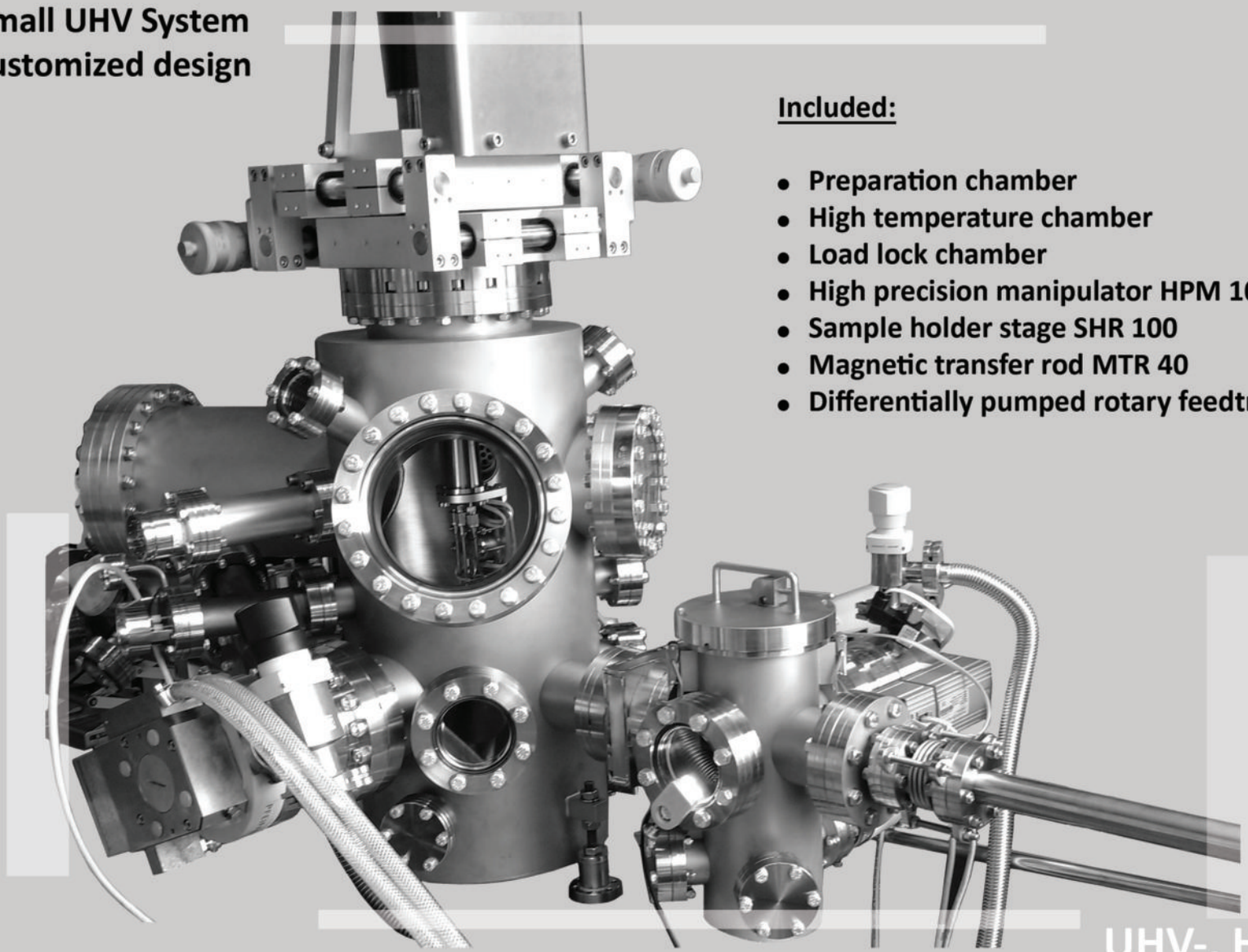
- Analysis chamber
- Preparation chamber
- High temperature high pressure reactor
- High temperature ambient reactor
- Radial distribution chamber RDC 820
- Sample storage chamber
- Load lock chamber
- Hemispherical electron energy analyzer
- Non focussed X-ray source XRS 100
- Monochromated focussed X-ray source
- High precision manipulator HPM 100
- Telescopic transfer arm
- Ultraviolet source UVS 200
- Differentially pumped focused ion source with rastering IS 200
- Flood source FS 100
- Sample holder stage SHR 40HC
- Electron beam evaporator EBV 100
- Single pocket thermal evaporator EV 100
- High precision manipulator ZM 100
- Magnetic wobble stick, MWS 40
- Differentially pumped rotary feedtrough DPRF 63

UHV Multifunktion System customized design



• UHV-, HV- SYSTEMS

Small UHV System
customized design



Included:

- Preparation chamber
- High temperature chamber
- Load lock chamber
- High precision manipulator HPM 100
- Sample holder stage SHR 100
- Magnetic transfer rod MTR 40
- Differentially pumped rotary feedtrough DPRF 63

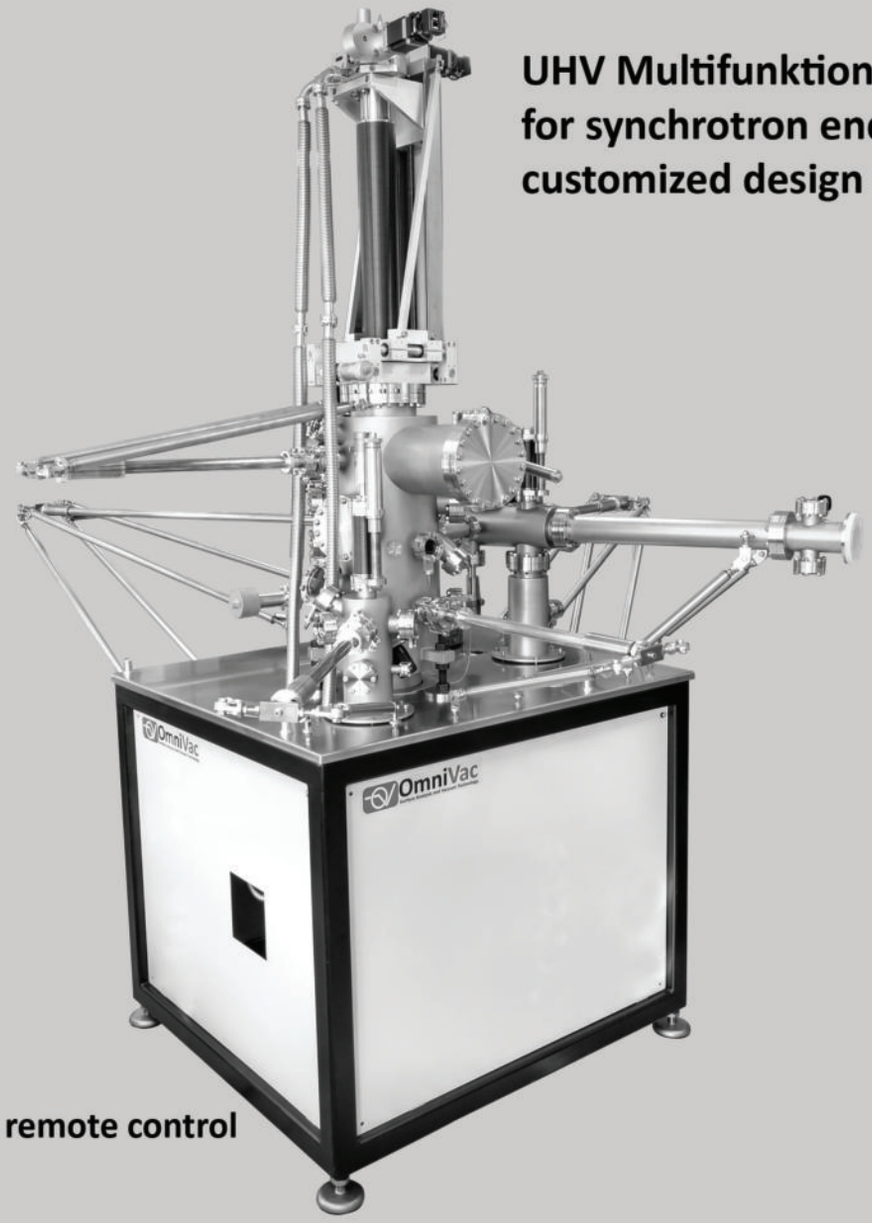
UHV-, HV- SYSTEMS

Included:

- High precision manipulator HPM 100
- Magnetic transfer rod MTR 40
- Flood source FS 100
- Sample holder stage SHR 40H
- Electron beam evaporator EBV 100
- Single pocket thermal evaporator EV 100
- High precision manipulator ZM 100
- Magnetic wobble stick, MWS 40
- Differentially pumped rotary feedtrough DPRF 63
- Non focused ion source IS 100
- HPM Cryo Manipulator, closed cycle cryostat

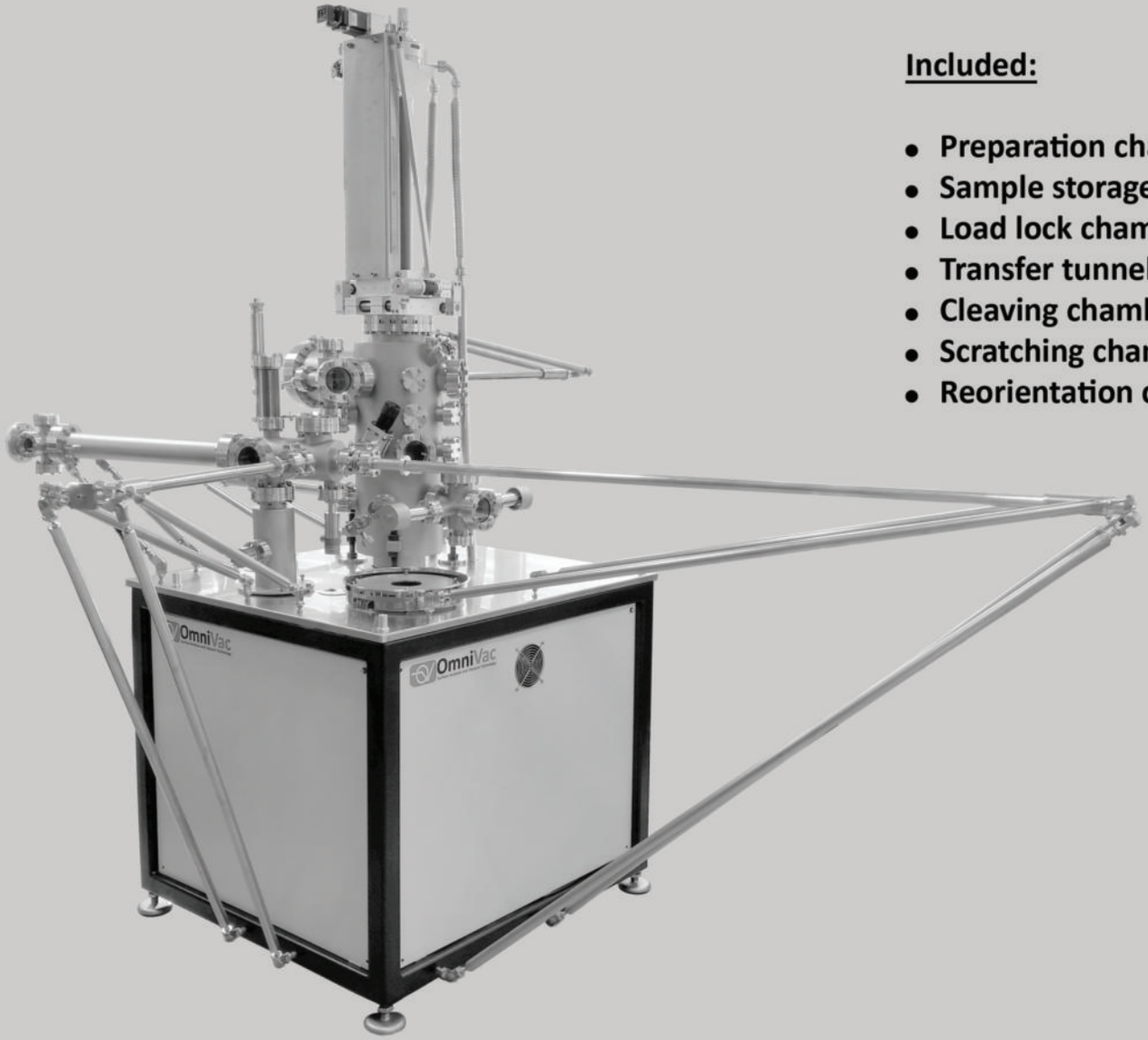
Electronics:

- Vacuum system control unit PS VCU 100
- Power control unit for stepper motors
- Power control unit for e-beam heaters
- Power control unit for e-beam evaporators
- Power control unit for flood sources
- Power control unit for LED illumination with wireless remote control



UHV Multifunktion System for synchrotron end station customized design

• UHV-, HV- SYSTEMS

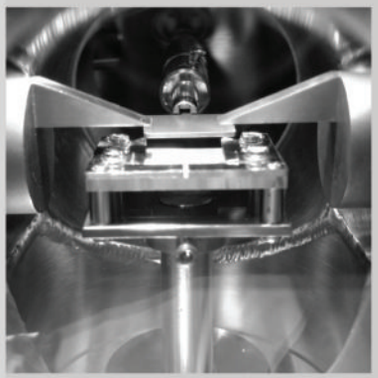


Included:

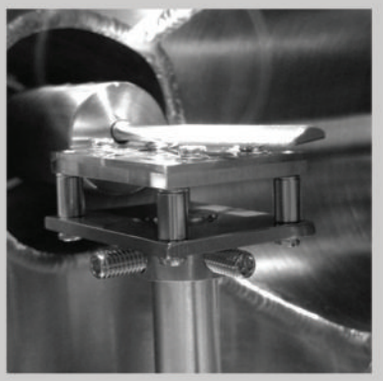
- Preparation chamber
- Sample storage chamber
- Load lock chamber
- Transfer tunnel
- Cleaving chamber
- Scratching chamber
- Reorientation chamber

Bake-out tent

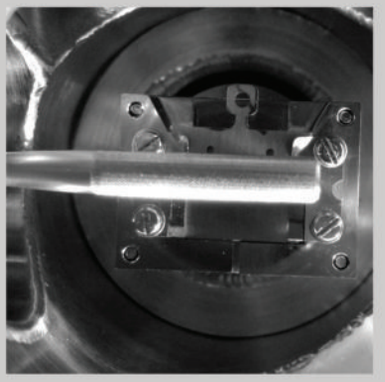
UHV-, HV- SYSTEMS



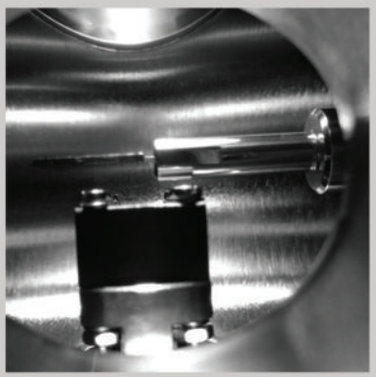
Cleaving



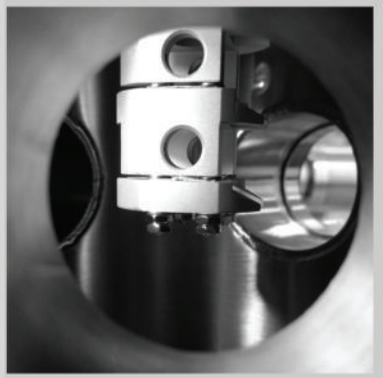
Scratching



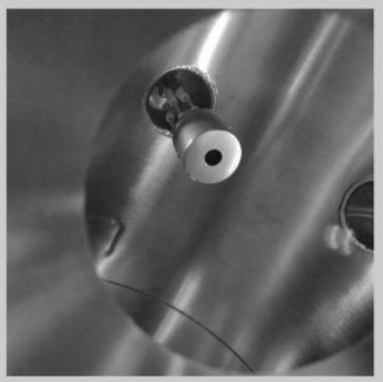
Scratching



Transfer

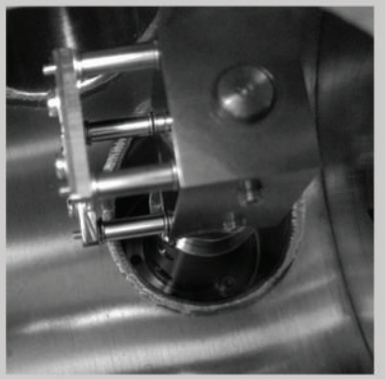


Storage



Ion source

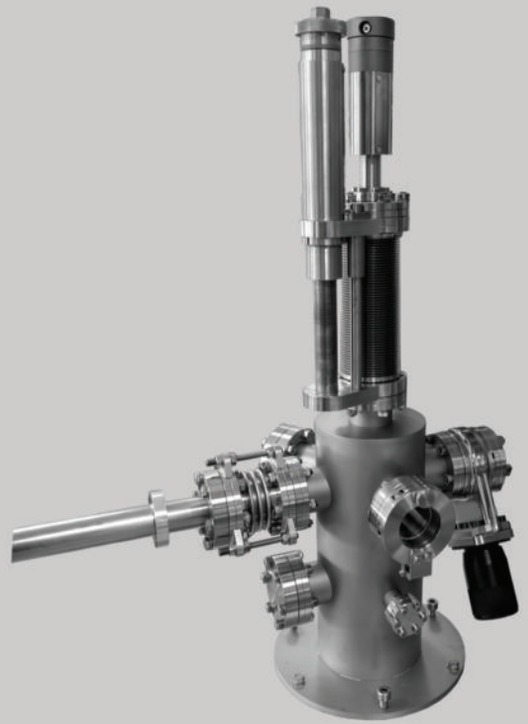
Heating stage



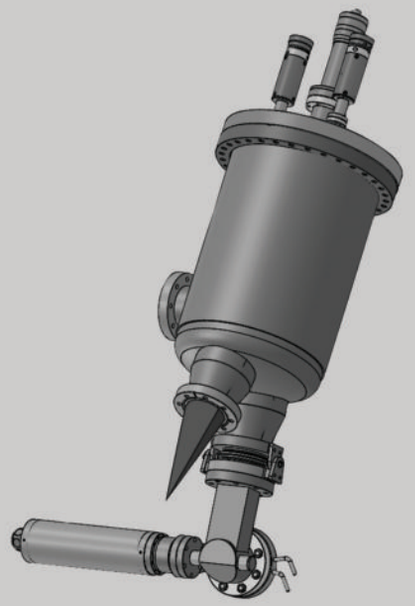
Reorientation

- UHV-, HV- SYSTEMS

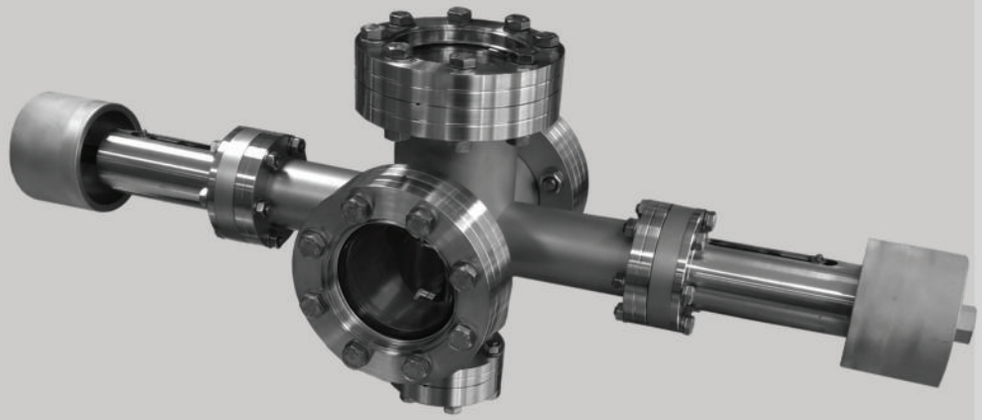
NEW products



Load lock chamber with sample storage and transfer



Monochromated focused x-ray Al source for Labor XPS Systems



Cleaving chamber in compact design

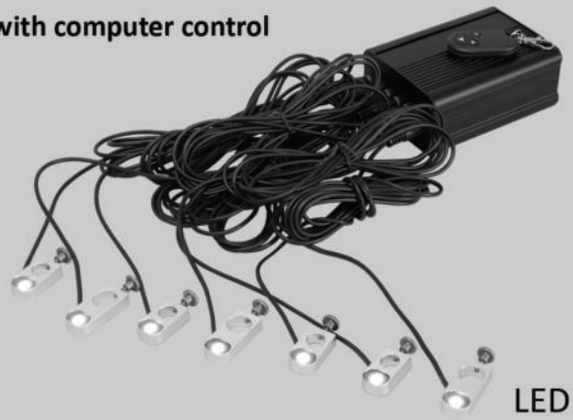
ELECTRONICS

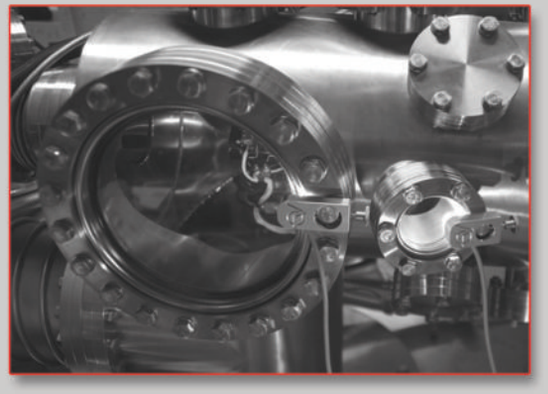
- Vacuum system control units (with bakeout control and safety procedures)
- Power control unit for titan sublimation pump
- Power control unit for stepper motors
- Power control unit for resistive heaters
- Power control unit for e-beam heaters
- Power control unit for thermal evaporators
- Power control unit for e-beam evaporators
- Power control unit for non focused ion source
- Power control unit for focused ion source with beam rastering
- Power control unit for flood sources
- Power control unit for X-ray sources
- Low noise channeltron preamplifiers
- Power control unit for hemispherical analyzers
- Power supply unit for STM-tip etching
- Power control unit for LED illumination with wireless remote control
- Power control for laser sample heaters
- Power control unit for low energy electron sources (IPES)
- Power control unit for gas mixing
- Power control unit for UV sources
- Control units with touch screen and optionally with computer control

PS VCU 100

PS EBV 100

PS REG 100





LED chamber illumination system

OmniVac
Surface Analysis and Vacuum Technology

GAS SYSTEMS

- Precise gas mixing systems for vacuum system
- Gas mixing system for atmospheric pressure

ACCESSORIES

- UHV CF-fittings
- UHV electrical feedthroughs
- Fluid feedthroughs
- LN2 feedthroughs
- Rotary feedthroughs
- Low cost magnetic rotary feedthroughs
- Differentially pumped rotory feedthroughs
- Titanum sublimation pumps, optionally with LN2 shields
- Bakeout equipment (heaters, shields, tents, frames)
- CF-flanges, CF-view ports
- Differentially pumped view ports
- Shutters for evaporators and view ports
- Filaments for sources
- Ceramic insulators
- Heaters for sample holders
- Inliners (crucibles) for evaporation cells
- Screws, Nuts (Mo, Cu, Ti, Ta, gold plated stainless steel)
- Rigid welded steel frames, optionally with active or passive vibration insulation

ANALYZERS

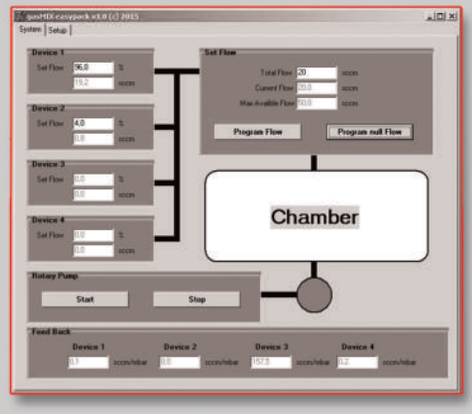
- Inverse photo electron spectroscopy detectors
- Hemispherical electron energy analyzer
- NEXAFS detectors

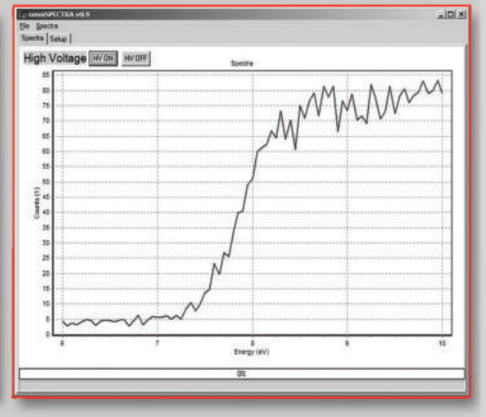
SERVICES

- Development of special customized systems
- Decomposition of XPS and AES Data
- Surface analysis consulting
- Leak detection
- Vacuum systems service

SOFTWARE

- Development of scientific equipment control software
- Software to control gas mixing systems
- Software for channeltron based applications





www.omnivac.de

SHORT REFERENCE LIST

CRYO-MANIPULATORS

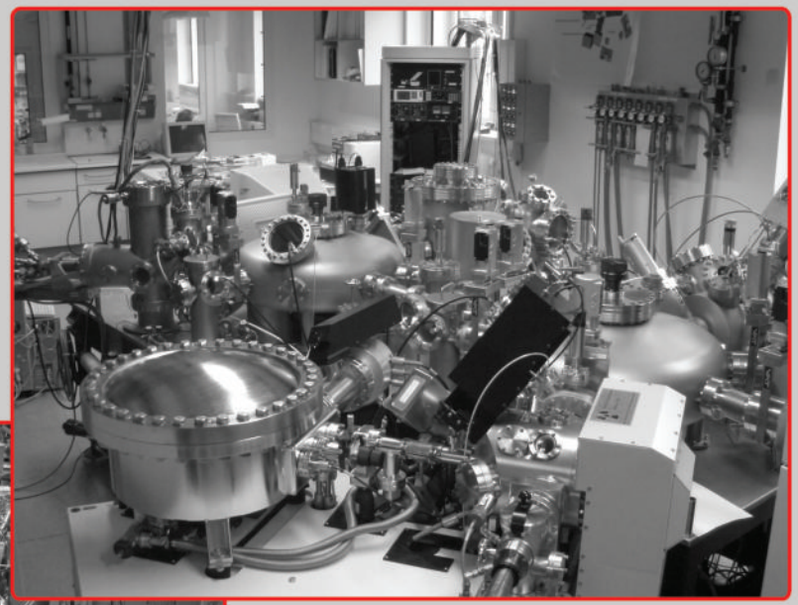
- Brookhaven National Laboratory, US
- Argonne National Laboratory, US
- Tsinghua University, Beijing, China
- Shanghai Institute of Microsystem and Information, China
- Southwest University of Science & Technology of China, Mianyang

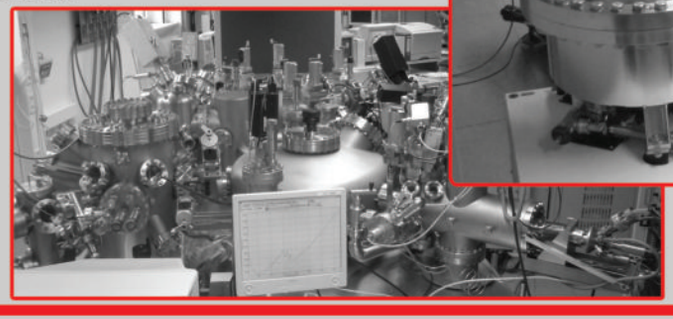
UHV-SETUPS

- Max-Planck-Institut for Solid State Research, Stuttgart, Germany
- Max-Planck-Institut for Iron Research Dusseldorf, Germany
- University of Kaiserslautern, Department of Physics, Germany
- Chinese Academy of Science, Institute of Physics, Beijing, China
- Hefei Synchrotron Laboratory, China
- University Libre de Bruxelles, Catalysis, Belgium
- CNRS Mulhouse, Surface Analysis Centrum, France
- CNRS-ECPM-Universite de Strasbourg, France
- Centre for Organic Electronics Physics,
- University of Newcastle, Australia
- ZONA, Johannes Kepler Universitaet Linz, Austria

COMPONENTS

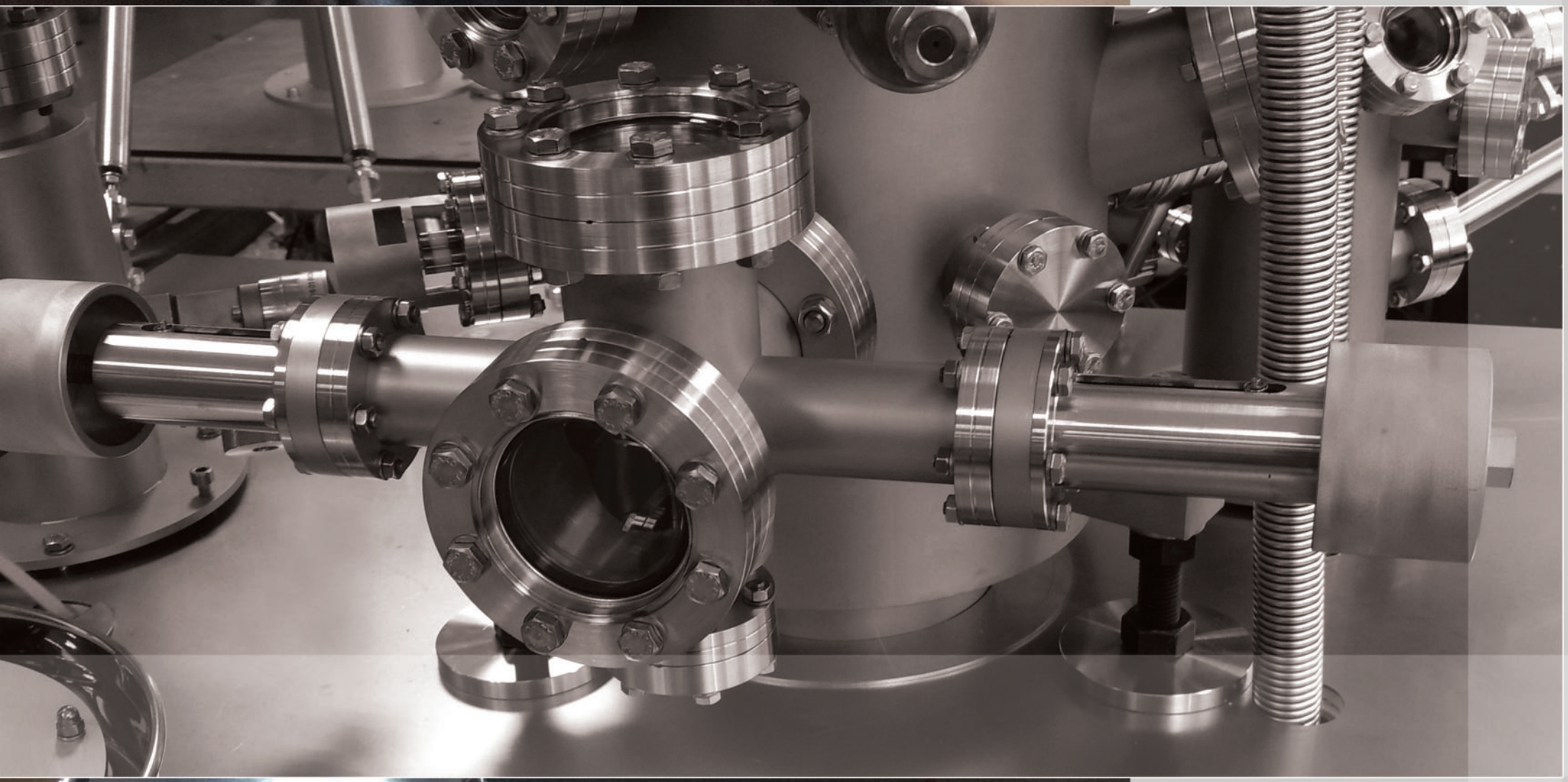
- University of Bordeaux, France
- Nebraska Center for Materials and Nanoscience, US
- Flinders University, Adelaide, Australia
- Vienna University of Technology, Austria
- Institute for Materials Research and Engineering, Singapore
- Karlsruhe Institute of Technology, Germany
- Seoul National University, Korea





OmniVac

Surface Analysis and Vacuum Technology



OmniVac
Surface Analysis and Vacuum Technology

- Fundation 1993.
- Location of Development, Production, Sales & Service OmniVac, Kaiserslautern, Germany.
- Owner: Hansjörg Ruppender.
- OmniVac has cooperated with universities and scientific institutes for over 25 years.
- Your scientific success is the inspiration, which focuses us to developing innovative solutions for up to date research.
- Our individualized products are technical base for implementation of your ideas.

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