Europe funds Saxony.
EFRE
European Regional Development Fund

European Union

ION BEAM SERVICES

Ion beam irradiation and analysis of samples at different DREEBIT facilities on demand.

- Ion spectrum of almost the complete periodic table, e.g. $Xe^{(1-48)+}$, $Fe^{(1-26)+}$, $Ar^{(1-18)+}$, $C^{(1-6)+}$, $He^{(1-2)+}$, H^{1+} and many others
- Ion energy from q x 100 eV up to q x 30 keV
- Ion beam currents from pA up to mA
- Ion beam diameters of some mm down to sub-mm

HCI-based TOF-SIMS measurements

X-ray spectroscopy of highly charged ions (Direct Excitation, Radiative Recombination, Dielectronic Recombination, time-resolved X-ray spectroscopy)

NEW WEBSITE ONLINE

DREEBIT Ion Beam Technology has launched a new website presenting the portfolio of products and services offered by the company. An overview of our references shows the possibilities of using DREEBIT products as well as customer-specific solutions which can be found for various demands. Furthermore, know-how pages contain detailed background information related to ions from their production up to scientific and industrial applications.

Link: www.dreebit-ibt.com

DREEBIT PRODUCTS WORLDWIDE

Headquarter Grossroehrsdorf

DREEBIT GmbH

Dr. Guenter Zschornack, CTO
Southwallstr. 5
01900 Grossroehrsdorf, Germany

Phone: +49-35952-420-201
Cell: +49-174-3281-681
Email: guenter.zschornack@dreebit.com

INTERNATIONAL SALES PARTNERS

Our Partner in Japan

ATONARP Inc.

Dr. Prakash Murthy, CTO
9F, PMO 1-10-18 Shibadaimon,
Minato-ku, Tokyo, Japan
105-0012

Phone: +81-90-1129-5889
Email: prakash.murthy@atonarp.com

Our Partner in China

DELONG D&S CO. LIMITED

Mr. Donald (Junjian) Tang
VP Sales / Marketing
RM 704, BLDG D, No. 1, YanluoRoad
Songgang Street, Baoan district
Shenzhen, P.R. China

Phone: +86-755-29946300
Cell: +86-13411882161
Email: tangjunjian@delongds.cn

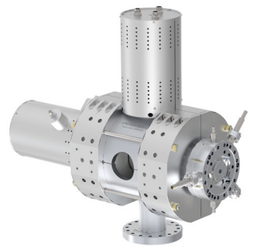
Our Partner in USA and Canada

Themis Scientific, LLC

Dr. Andreas Hieke
1900 South Norfolk Street, Suite 350
San Mateo, California 94403
USA

Phone: +1 650 618 9503
Email: dreebit-info@themis-scientific.com

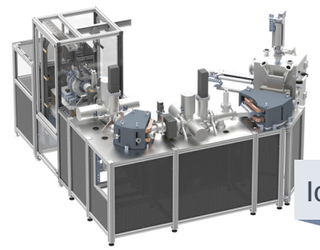
YOUR PARTNER IN **ION BEAM TECHNOLOGY**



Ion sources

Dresden EBIS-A

Ion sources for the production of ion beams with high ion beam currents or high ion charge states



Ion beam facilities

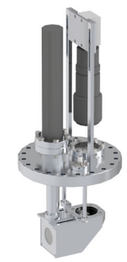
Ion implantation facility

Complete ion beam facilities including ion production, ion acceleration and deceleration, ion beam transport, ion beam diagnostics, charge separation, vacuum system and control system

Ion beam optics

Horizontal beam scanner

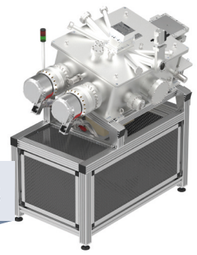
Electrostatic and magnetic optics for ion beam focusing, transport, charge state separation and ion beam deflection



Ion beam diagnostics

Pepperpot emittance meter

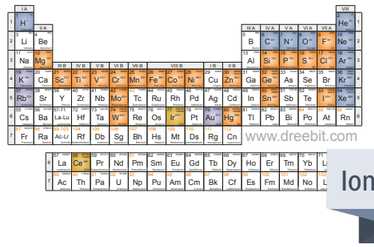
Systems for ion beam imaging and the measurement of the ion beam current, the ion beam emittance, the ion energy and the energy spread in the ion beam



Customer-specific solutions

p-XRF-chamber

Development, modelling, construction and fabrication of customer-specific charged particle beamline sections including experimental and analytical equipment



Ion beam service

Periodic table

In-house laboratories including ion irradiation facilities as well as spectroscopical equipment for contract work and access by guest scientists and engineers

ION SOURCES FOR HIGHLY CHARGED IONS

Electron Beam Ion Sources (EBIS) and Traps (EBIT)

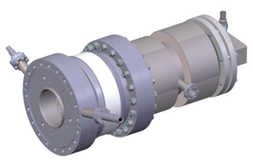
Electron Beam Ion Sources (EBIS / EBIT) are able to produce ions of high charge states of almost all elements of the periodic table. They deliver beams of protons, alpha particles, various highly charged ion species, as well as ions of molecular fragments and clusters.

	Dresden EBIT	Dresden EBIS-A	Dresden EBIS-SC
electron beam current	50 mA	200 mA	600 mA
electron energy	≤ 15 keV	≤ 25 keV	≤ 15 keV
ion trap length	2 cm	6 cm	25 cm
magnetic field	250 mT	600 mT	up to 6 T
magnet	full permanent	full permanent	superconducting
Ar^{16+} / s	4E5	7E6	1E8
Xe^{44+} / s	1E3	4E5	1E7

ION SOURCES FOR HIGH CURRENT ION BEAMS

Dresden ECRIS-2.45M

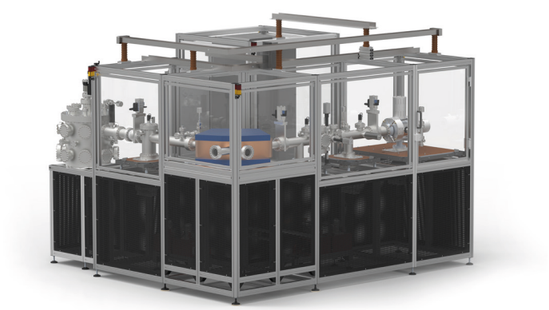
The Dresden ECRIS-2.45M is a 2.45 GHz permanent magnet electron cyclotron resonance ion source designed to produce lowly charged ions in the range of several mA.



microwave power	200 W
source potential	30 kV, 10 mA

Ion Species	Ion current (µA)
H^+	1200
H_2^+	3000
He^+	3000
Ne^+	1200
Ar^+	450
Ar^{2+}	10

ION BEAM FACILITIES



Ion Irradiation Facilities S, M and L

Three adjustable standard ion irradiation facilities of different dimensions and scope of delivery concerning ion optical and diagnostics equipment are available.
All models include an EBIS, EBIT or ECRIS, an ion charge state separation element, a target chamber as well as control hardware and software.
Optionally, the ion beam can be decelerated down to 100 eV·q or accelerated up to 500 keV·q using high voltage platforms.

ION BEAM OPTICS

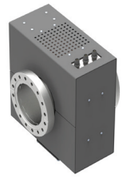
Einzel lenses
Optics with variable dimensions for charged particle focusing

Beam scanner
Ion beam deflection up to several 100 Hz

Quadrupole beam bender
Ion beam bending with an angle of 90°

Deflectors
Electrostatic optics with variable dimensions for charged particle deflection

Neutral particle dump
Separation of neutral particles by deflecting a beam of charged particles in an electric field



Magnetic steerer
Magnetic optics with variable dimensions for charged particle deflection

Ion beam deceleration system
One or two step deceleration system to decelerate ion beams down to several 100 eV per charge state

ION BEAM DIAGNOSTICS

Faraday-Cups

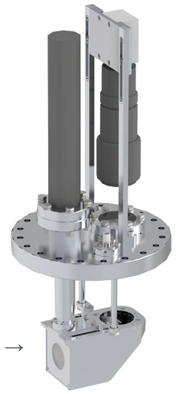
High-sensitive Faraday-Cup
Measurement of ion beam currents down to sub – pA

4-sector Faraday-Cup
Measurement and determination of the ion beam position for ion beam currents from sub – pA to µA

High-power Faraday-Cup
Measurement of ion beam currents from µA up to mA with a beam power of up to 1.5 kW

← High-power Faraday-Cup

Pepperpot Emittance Meter →

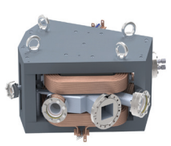


Retarding Field Analyzer
Measurement of ion energy and ion energy spread

Beam Imaging System
Beam shape visualization

Pepperpot Emittance Meter
Determination of ion beam emittance

ION SPECIES SEPARATION



Dipole magnet
Charge-to-mass separation and beam bending with high beam acceptance, special solutions for parallelization of ion beams with a beam width of up to 20 cm

Wienfilter
Velocity filter with crossed electric and magnetic fields as a compact solution for charge-to-mass separation