IGAFA

Scientists connected.

RESEARCH IN ADLERSHOF

Content

The research network IGAFA

The **IGAFA research network** is dedicated to support cooperation between the research institutions as well as with universities and companies in Adlershof.
IGAFA also accomodates international scientific guests in two **International Guest Houses** (IBZ) with approximately 50 apartments that were built by the Alexander von Humboldt Foundation.


(Foto: © IGAFA/Matthias Brandt)

In collaboration with the Humboldt-Universität zu Berlin and WISTA Management GmbH the IGAFA organizes several events every year such as the Presentation of the **Adlershof Thesis Award** (Dissertationspreis Adlershof) or the **Adlershof Research Forum** (Adlershofer Forschungsforum). Together with the Bundesanstalt für Materialforschung und -prüfung (BAM) the **Falling Walls Lab Adlershof** is organized as well.

Cooperations and projects

Funded by the Berlin State Government, IGAFA organizes the **Ladies Network Adlershof (LaNA)**. This network connects female scientists from research institutions and universities with female entrepreneurs and founders aiming at strengthening female careers in sustainable long terms.

International collaborations nowadays are essential for the success of research. The research institutions in Adlershof maintain approximately **800 cooperating relationships** worldwide, such as joint third-party funded projects, agreements for resource sharing or personnel exchange as well as many other research activities. Typical for Adlershof there also is an extensive, immeasurable number of on-site collaborations in the fields of device use and know-how transfer.

With two International Guest Houses, IGAFA offers temporary accommodation for up to 100 scientific guests from all over the world.(Photo: © IGAFA/Matthias Brandt)

IGAFA

Non-university research institutions in Adlershof

Number of research institutions

8

Number of employees

1.851

30% of them female

Number of scientists

815

27% of them female

Shares of financing

Basic funding:

€ 135,8 Mio.

Third party funding:

€ 80,0 Mio.

Number of joint professorships

- HU: **14**
- TU: **25**
- FU: **8**

Institutes introduce themselves

Bundesanstalt für
Materialforschung und -prüfung

German
Aerospace Center

Ferdinand-Braun-Institut, Leibniz-
Institut für Höchstfrequenztechnik

Helmholtz-Zentrum Berlin
für Materialien und Energie

Leibniz-Institut
für Kristallzüchtung

Leibniz-Institut für
Analytische Wissenschaften

Max Born Institute for Nonlinear
Optics and Short Pulse Spectroscopy

Physikalisch-Technische Bundes-
anstalt Braunschweig und Berlin

BAM
Bundesanstalt für Materialforschung und -prüfung

Bundesanstalt für Materialforschung und -prüfung | BAM

We ensure safety in technology and chemistry.

BAM integrates research, assessment and consultation in technology and chemistry under one roof.
In the cutting-edge and key technologies of materials science, materials engineering and chemistry, we make a crucial contribution to the technical safety of products, processes and to people's life and work. For this purpose, we carry out research, perform tests and provide advice based on our technical expertise and many years of experience at the interfaces of science, technology, industry and politics.

Safety makes markets.

BAM is a senior scientific and technical federal institute with responsibility to the Federal Ministry for Economic Affairs and Energy. Within the context of our legal and socio-political responsibilities, we identify needs that will shape safety requirements in technology and chemistry in the future. With our scientific and technical solutions and by sharing our knowledge, we help promote German industry.
BAM's competencies arise from interdisciplinary knowledge and our own high-quality and continuous research. Scientists at BAM collaborate on research topics in chemistry, materials science and materials engineering across different levels of complexity.
We engage in technology transfer in our national and international networks by passing on our own findings. At the same time, we use the expertise and valuable ideas from our networks for our current work.

"BAM conducts research, tests and provides advice to protect people, the environment and property.

Photos: Adlershof branch (top); Research impressions (left) – © BAM

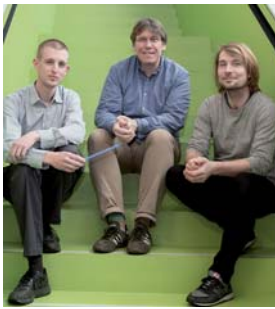
Highlight: Digital Twins in the Process Industry

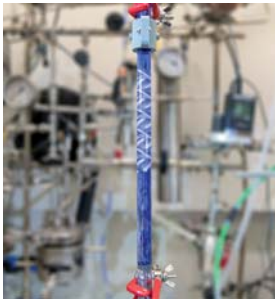
Mini Mixer for Smart Chemical Plants

Traditionally, chemical substances such as pharmaceuticals, varnishes or paints have been manufactured in production plants with fixed installations. BAM researchers are conducting research into new smart production modules with which custom chemical products can be produced quickly and flexibly.

For this purpose, a mixer for chemical reactions was modelled and printed in 3D. With a diameter of only five millimetres, the mixer fits into a nuclear resonance spectrometer (NMR spectrometer). The mixer can precisely and reliably analyse chemical reactions in real time. Based on the simulation data and the NMR analyses, the researchers developed a digital twin, which uses mathematical models to virtually map the mixer and NMR, including all processes. This allows them to verify whether the NMR measurements correspond with the models.

At the same time, the models are further improved by continuously taking measurements. This results in reverse optimisations for the structure of the real module (»cyber-physical production systems«) and reduced development times for new products.





Reference:
Martin Bornemann et al., Design and Validation of an Additively Manufactured Flow Cell – Static Mixer Combination for Inline NMR Spectroscopy, Ind. Eng. Chem. Res. 2019, 58, 19562 – 19570

Photos: BAM-Team at Adlershof (above, f. l. t. r.): Dr. Klas Meyer, Dr. Michael Maiwald and Martin Bornemann-Pfeiffer; The mixer – Demonstration with blue ink (below) – © BAM

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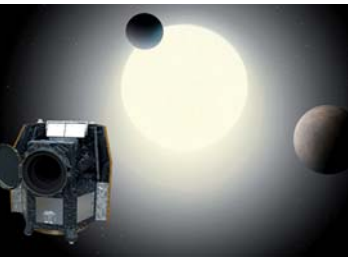
German Aerospace Center | DLR

The German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) is the national aeronautics and space research centre of the Federal Republic of Germany. Its extensive research and development work in aeronautics, space, energy, transport, security and digitalisation is integrated into national and international cooperative ventures.



DLR's mission comprises the exploration of Earth and the Solar System and research for protecting the environment. This includes the development of environment-friendly technologies for energy supply and future mobility, as well as for communications and security. DLR's research portfolio ranges from fundamental research to the development of products for the future. In this way, DLR contributes the scientific and technical expertise that it has acquired to the enhancement of Germany as a location for industry and technology. DLR operates major research facilities for its own projects and as a service for clients and partners. It also fosters the development of the next generation of researchers, provides expert advisory services to government and is a driving force in the regions where its facilities are located.

DLR operates 47 institutes and facilities at 27 sites across Germany. The Berlin site of the German Aerospace Center (DLR) concentrates on space and transport research.

"Research for the knowledge of tomorrow.

Fotos: Site panorama (top, © DLR); Modelling in transport research (© DLR/Markus Steur); Artist's impression of CHEOPS space telescope (© ESA / ATG medialab)

Berlin site Highlights: Space and transport research

Space research at the Berlin site:

The site in the federal capital has made a name for itself, among other things, by participating in large international missions of the Institute for Planetary Research such as Mars Express, the comet mission Rosetta or Mars InSight. In the Institute for Optical Sensor Systems, scientists investigate and develop active and passive optical sensor systems for satellites, flying platforms and robotic systems.

Research for a modern and sustainable transport system:

Making mobility safe, efficient and sustainable – this is what the institutes of Transport Research, Transportation Systems and Vehicle Concepts are doing in Adlershof. As pioneers for an environmentally and socially compatible transport system and management, the scientists and engineers are dedicated to cross-modal concepts and the use of state-of-the-art technologies.

Institutes and Facilities on site:

- Institute of Planetary Research
- Institute of Optical Sensor Systems
- Institute of Transport Research
- Institute of Transportation Systems
- Institute of Vehicle Concepts
- Remote Sensing Technology Institute – Team Optical Remote Sensing of Water
- Institute of Propulsion Technology – Department Engine Acoustics
- Technology Marketing
- DLR_School_Lab

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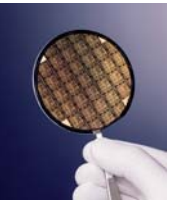
Leibniz Ferdinand Braun Institut

Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik | FBH

The FBH researches electronic and optical components – key enablers for health & nutrition, climate & energy, mobility, security and communications

Excellence in international research – from ideas to prototypes



Photonics

- diode lasers & hybrid laser systems for material proccessing, sensors, measurement technology, medicine ...
- UV LEDs for plant illumination, disinfection ...

III/V elektronics

- power amplifiers & HF components for energy-efficient mobile communications, sensor technology ...
- compact microwave plasma sources for surface treatment (printing, disinfection ...)

Integrated quantum technology

- quantum sensors based on ultra-cold atoms
- nanostructured diamond systems & materials

High-tech environment

- cleanroom laboratories with industry-compatible process line and excellent technological equipment

Successful transfer & strategic cooperation

- reliable partner for industry, part of Research Fab Microelectronics Germany
- part of value chains for regional companies – securing economic power and jobs
- joint labs with universities
- 11 spin-offs

"Innovations with Microwaves and Light.

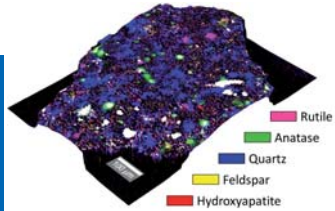
Photos: Institute (top); 800 A LiDAR-module; wafer with monolithic-integrated indium phosphide transistor circuits; UV light-emitting diode in housing – © FBH/schurian.com

Highlight: need-driven nutrient management

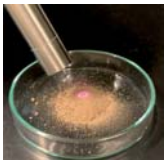
Targeted fertilization – soil investigations with a SERDS measuring system and a 785 nm dual-wavelength diode laser

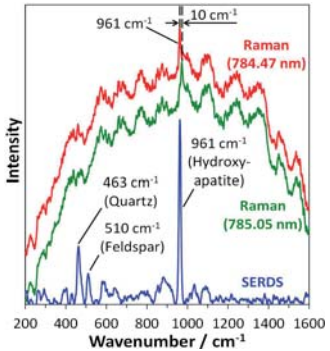
- need-driven **nutrient management** for **precision agriculture**
- SERDS (Shifted Excitation Raman Difference Spectroscopy)
  - enables Raman measurements in real-world environments under daylight conditions
  - physical approach separating Raman signals from background interferences
- **portable SERDS system for in situ field measurements under development**

First step: better understanding of soil composition using confocal Raman microscopy



Second step: investigation of soil samples – identifying soil components, e.g., quartz, feldspar, hydroxyapatite





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HZB Helmholtz Zentrum Berlin

Helmholtz-Zentrum Berlin für Materialien und Energie | HZB

With approximately 1,200 employees, HZB is one of the largest non-university research centres in Berlin. Our research priorities:

- Researching materials that can be utilised for energy conversion in its broadest sense
- Operating BESSY II, an electron storage ring (synchrotron)

We are working on high-efficiency next-generation solar cells such as those that use thin-film technologies and new classes of material like perovskites. To this end, we seek contact and collaborations with industry at an early stage. Our researchers are developing catalysts and materials that use sunlight to generate renewable fuels such as hydrogen and methane. Battery systems and quantum materials for energy-efficient information technology are also being researched at HZB.

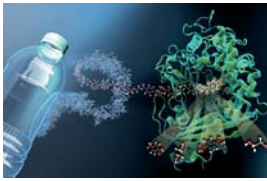
HZB operates the BESSY II electron storage ring to conduct this research. It generates extremely brilliant synchrotron light that is guided to the experiments via 40 beamlines. The facility is optimised to produce and utilise soft X-rays that are especially well-suited for analysing chemical processes and thin layers of materials.

The light is not used just by HZB researchers. BESSY II hosts more than 3,000 visits from guest researchers per year in diverse disciplines: from chemistry and physics to biology, pharmacology, geology, and art history.

"Research to meet current and future challenges.

Photos: view of BESSY II and the EMIL laboratory (top); the BESSY II circular electron storage ring; in the HZB school laboratory; view in the experimental hall of BESSY II during the *Long Night of the Sciences* – © HZB

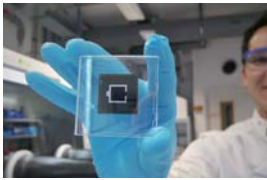
Research highlights from the HZB



100% recycling of plastic waste:

Plastics are versatile and extremely durable materials. But this is also a problem, because plastic particles find their way everywhere – into ground water, into the oceans, and into the air. Researchers at BESSY II have been able to decipher the structure of an important enzyme called MHETase. This was discovered in a bacterium that thrives on bottles made of a common plastic named polyethylene terephthalate (PET). MHETase together with a second enzyme named PETase breaks PET down into its basic chemical building blocks. The mapping of the MHETase structure will help create efficient artificial enzymes for 100% recycling of plastics.

Top: enzymes produced by bacteria are able to break down PET into its basic chemical building blocks. - © HZB
Below: researchers used the BESSY II MX beamlines to map the 3D chemical structure of MHETase, an enzyme that cleaves PET. – © HZB



World record for perovskite tandem solar cells:

The HZB develops high-efficiency tandem solar cells consisting of silicon and perovskite. Such cells can achieve considerably higher efficiencies than individual cells on their own because tandem cells simultaneously convert different parts (»colours«) of sunlight into electric current. Teams from the HZB have now developed a tandem solar cell that converts 29.15 per cent of the incident light into electrical energy. This is a newly certified world record that puts the HZB ahead in the race for ever higher efficiencies (as of January 2020).

Top: The tandem solar cell was realised at a typical laboratory scale of one square centimetre. Scaling up to an industrial level is feasible however.
Below: view into the forge of the world record: the Helmholtz HySPRINT Innovation Lab at the HZB produces perovskite solar cells that achieve the highest efficiencies in the world. – © HZB.

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Leibniz-Institut für Kristallzüchtung | IKZ

The »Leibniz-Institut für Kristallzüchtung (IKZ)« in Berlin-Adlershof is the international state-of-the-art competence center for science & technology as well as service & transfer for innovations in and by crystalline materials. The R&D spectrum thereby ranges from basic over applied research activities up to pre-industrial research tasks. Crystalline materials are key technology enabling components to provide electronic and photonic solution for today´s and future challenges in society like:

- Artificial intelligence
  (communication, sensor technology ...)
- Energy (renewable energies, power conversion ...)
- Health
  (medical diagnosis, modern surgical instruments ...)

The IKZ provides innovations in crystalline materials by its combined in-house expertise on plant engineering, numerical simulations and crystal growth to achieve highest quality crystalline materials with tailored properties. Research on volume crystals is the unique selling point of the institute. Other activities relate to nanostructures and thin films. A further strength of the IKZ is theoretical and experimental materials research.

Together with partners from institutes with technology platforms as well as industry companies, the institute will in future also drive innovations by crystalline materials, namely the reliable evaluation and benchmarking of innovative crystal prototypes for disruptive technology approaches. The aim is to develop exploitation strategies such as technology transfers to established industry partners or setting up IKZ start-ups.

"From basic research up to industry-related technology development.

Photos: Location (top); silicon, germanium, Si/Ge and gallium arsenide crystals – © IKZ

Highlight: New international system of units becomes operative

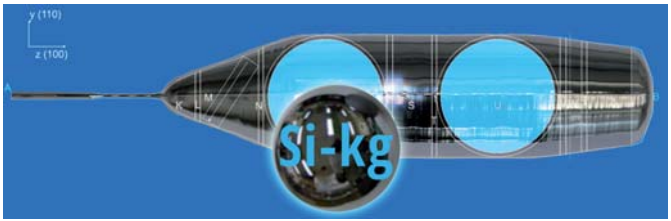
In addition to Ampere, Kelvin und Mol, the kilogram also is now defined by a natural constant. This is made possible by the single crystals grown from the highly enriched isotopic silicon-28 at IKZ. Hereafter, a new definition for the kilogram is valid using the Planck constant and thus this unit is no longer determined through the mass of the »original kilogram«.

The scientific and high-technology communities mostly benefit from this. The IKZ played a decisive role in replacing the almost 130-year-old artificial object of the original kilogram, because the structurally perfect crystals of isotopically-pure silicon-28 (^{28}Si, enrichment up to 99.9995 %) grown at the IKZ form the basis for this redefinition.

The IKZ is the world's only place where this precision in crystal growth was achieved.

Within the framework of the »KILOGRAM« projects led by the Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig, several very precise spheres with shape deviations of less than 20 nm at a diameter of about 94 mm and with a defect-free polished surface were prepared from the ^{28}Si crystals grown at IKZ using the float-zone method (FZ).

Under these preconditions, PTB succeeded in determining the number of ^{28}Si atoms in a crystal sphere of 1 kilogram total mass, with the required uncertainty of less than 2×10^{-8}.



Photos/illustrations: Prototype of a silicon-28 single crystal after growing in a floating zone facility in the context of the »KILOGRAM« project – © IKZ

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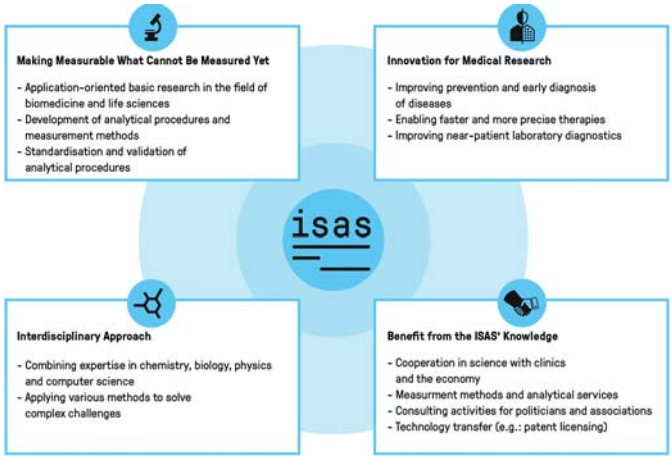
isas

Leibniz-Institut für Analytische Wissenschaften | ISAS – e. V. –

ISAS (Leibniz-Institut für Analytische Wissenschaften – ISAS – e. V.) with locations in Dortmund and Berlin develops fast, accurate, and cost-effective analytical procedures for health research in order to improve capabilities for the prevention, early diagnosis and treatment of diseases. By combining expertise in chemistry, biology, physics and computer science, we make measurable what cannot be measured yet. Our overriding priority is the question: How much of which substance is where at what time?



The main areas of our activity are:

- elucidation of disease mechanisms
- identification of potential drug targets and biomarkers
- development of novel imaging and detection methods for biomolecules

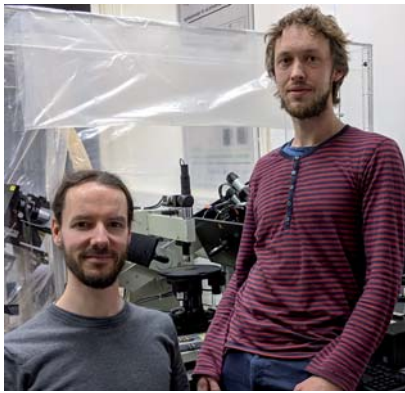
"ISAS is the partner of choice for interdisciplinary research projects.

Photos: ISAS Campus, Dortmund (top); portfolio – © ISAS

Highlight: Unique Possibilities for Hyperspectral Imaging

The fast, contactless and non-destructive hyperspectral imaging of samples is highly relevant for the research as well as the industry in the fields of environment, biomedicine, material and space applications. Laser based methods have the advantage of a high optical throughput capacity. In addition, they are of particular interest for the analysis in laboratory and field applications because of their high spectral, spatial and temporal resolution.

In cooperation with the SENTECH Instruments GmbH and supported through EFRE the ISAS developed an ellipsometric setup for an IR-laser application laboratory (EFRE 1.8/13). This ellipsometer creates beyond classical FTIR spectroscopy unique possibilities for hyperspectral imaging of samples as well as time-resolved measurements of noncyclical processes. (1-3) A tunable quantum cascade laser enables highly resolved spectral (<0.5 cm-1) ellipsometric mapping with spatial resolutions of ≤ 120µm and single shot measurements in the range of µs/ms. The hyperspectral measurements allow a chemical identification through specific absorption signatures for surfaces and especially for thin films as well as interpretations with respect to film thicknesses, molecular structures and interactions, composition and homogenity.



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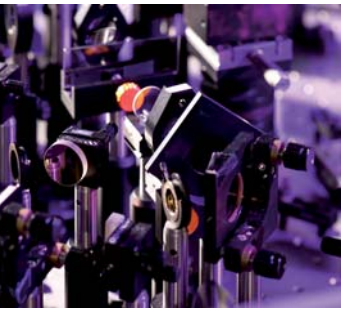
1. *Furchner, A., Kratz, C., Rappich, J., Hinrichs, K. Opt. Lett. 44 (2019) 4893–4896*
2. *Hinrichs, K., Shaykhutdinov, T., Kratz, C., Furchner, A. JVST B 37 (2019) 060801-1*
3. *Furchner A., Kratz C., Hinrichs K., Opt. Lett. 44 (2019) 4387*

Photo: Dr. Andreas Furchner and Dr. Christoph Kratz, who both contributed significantly to the construction of the new single-shot ellipsometer (shown in the background). – © ISAS e. V.

Max-Born-Institut

Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy | MBI



MBI conducts basic research in the field of nonlinear optics and ultrafast dynamics in the interaction of matter with laser light and pursues applications that emerge from this research. It develops and utilizes ultrashort and ultrafast lasers and laser-based short-pulse light sources in a wide spectral range, in conjunction with methods of nonlinear spectroscopy.

Complementary work includes the combination of lasers with x-ray pulses from free electron lasers and synchrotrons. The research program is focused on light-matter interactions in a broad range of prototypical systems, in particular on the optically induced nonlinear response and the observation and control of fast and ultrafast dynamics. Such studies give direct insight in microscopic interactions and structures which determine the physical properties of atoms, molecules, solids, and surfaces.

With its research, MBI fulfills a nationwide mission and is an integral part of the international science community. MBI is involved in numerous research cooperations with universities, other research institutions and industrial partners. It offers its facilities and its scientific know-how also to external researchers within the framework of an active guest program.

"MBI research elucidates ultrafast processes in nature.

Photos: Location (top); Femtosecond-XUV-Spectroscopy Laboratory (left, above); Experimental set-up for nonlinear optical frequency conversions (left, below) – © MBI

Max-Born-Institut

Highlight: Forward or backward?

New pathways for protons in water or methanol

Scientists of the MBI have, together with researchers of MLU Halle-Wittenberg, achieved a pronounced understanding of elementary ionic charge transfer processes. The research teams have investigated the behaviour of a model system (7-hydroxyquinoline in water-methanol mixtures), for which excitation with a short laser light pulse induces proton dissociation from the OH group and proton transfer to the nitrogen atom. The exact chronology of these elementary processes have remained elusive. The observed processes occur on time scales of 1 - 100 picoseconds*, demanding the use of ultrashort laser pulses in these experiments.

The scientists have now demonstrated that the proton release from the OH group is indeed rather fast, but the protonation of the nitrogen atom by the solvent molecules takes place even faster, making the net reaction that of a transport of a proton vacancy, i.e. an OH^--ion.

The elementary reaction steps have been characterized with time-resolved vibrational spectroscopy in the mid-infrared spectral range and detailed quantum chemical calculations.

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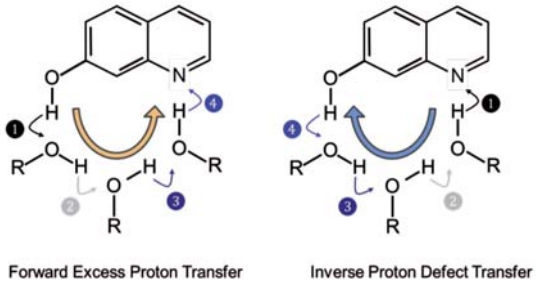

Figure: Proton transport in water, where the H^+ or the OH^- charge moves in steps. The model system 7-hydroxyquinoline defines the direction of charge transfer. – © MBI

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PTB
Physikalisch-Technische Bundesanstalt
Nationales Metrologieinstitut

Physikalisch-Technische Bundesanstalt | PTB

PTB is the national metrology institute with scientific and technical service tasks. Measurements with the highest accuracy and reliability are the core competence. Since 1982 PTB utilises synchrotron radiation for metrological purposes.

At its experimental stations, PTB offers a broad spectrum of services, from calibrations via contract research to comprehensive metrological system solutions realized in cooperation with partners from industry and research. PTB has a worldwide leading position in the use of synchrotron radiation for metrology.

The key activities are:

- metrology for EUV lithography
- radiometric characterization of space-based instrumentation
- materials metrology: chemical and dimensional analysis of nanostructures and thin films.

The Physikalisch-Technische Bundesanstalt is a scientific and technical higher federal authority falling under the competence of the Federal Ministry for Economic Affairs and Energy.

"PTB's core competence is accuracy and reliability in metrology.

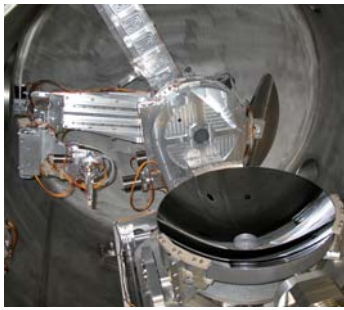
Photos: Site (top); Experimental hall at the Metrology Light Source (MLS); Local clean room and reflectometer for the characterisation of EUV optics – © PTB

Highlight: Metrology with synchrotron radiation for semiconductor manufacturing

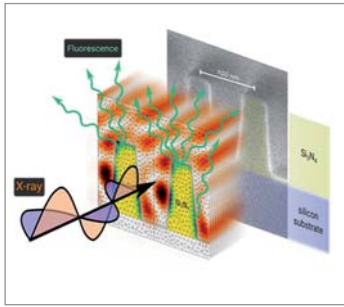
The year 2019 has seen the commercial breakthrough for large-scale semiconductor manufacturing of high-end processors by use of extreme ultraviolet lithography (EUVL).

For more than 20 years PTB supports the development of EUVL projection optics by metrology with synchrotron radiation. Measurements at the working wavelength of 13.5 nm in the extreme ultraviolet spectral range are conducted at the electron storage rings BESSY II and Metrology Light Source MLS in Berlin-Adlershof, mainly in the frame of co-operative work with partners from research and industry.

The steady drive in semiconductor industry towards decreasing structure sizes will lead to further challenges in the development not only for EUV optics but also for new measurement procedures for the characterisation of semiconducting nanostructures. Already at present, synchrotron radiation offers excellent capabilities by e.g. spatially resolved reflectometry, fluorescence spectroscopy and scatterometry in the spectral ranges from EUV to soft X-ray.



These methods have been developed and already applied in the frame of scientific work during the last years at the BESSY II and MLS synchrotron radiation sources.



Photo/Image: Collector optics for EUV high-power sources (above); Scheme: element sensitive reconstruction of semiconducting nanostructures by X-ray fluorescence (below) – © PTB

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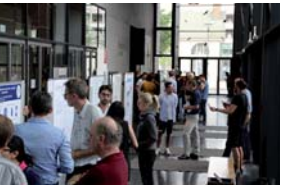
Humboldt-Universität zu Berlin | IRIS Adlershof



With the establishment of IRIS Adlershof in 2009, Humboldt-Universität zu Berlin has created an innovative platform for integrative research in the natural sciences. Today, more than a decade later, IRIS has become an internationally recognized player in the research fields of hybrid systems for optics and electronics, and also for the physics of space, time and matter. This was achieved in particular through large collaborative projects such as collaborative research centers (CRC), ERC- and EU- projects as well as through the organization of international meetings and conferences.

Started with a small office in HU's Department of Physics in the Lise Meitner-Haus, IRIS in its present IRIS Building at Zum Großen Windkanal 6 hosts five theoretically oriented research groups, with more than 80 scientists and students, as well as the branch offices of IRIS Adlershof, of the CRC 951 ›Hybrid Inorganic/Organic Systems for Opto-Electronics (HIOS)‹, and also the ProMINT-Kolleg.

Another 120 scientists and students from experimental IRIS research groups are looking forward to the commissioning of the newly constructed IRIS research building, which is expected to be operational in summer 2020. The federal government, the state of Berlin and Humboldt-Universität zu Berlin are providing a total of more than 50 million euros for this purpose.

"IRIS Adlershof: Cutting-Edge Research on Hybrid Systems for Optics and Electronics.

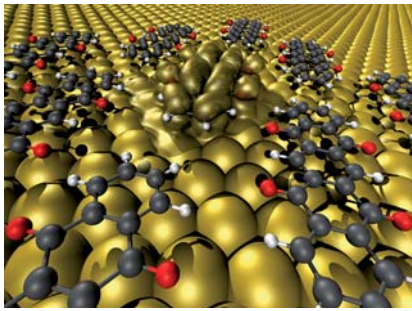
Photos/Figures: Foyer of the new Research Building (Vizualization © Nickl & Partner Architekten AG); Space, Time, Matter; Poster-Session at the Symposium IRIS 2019; Collaborative Lab in the Research Building – © IRIS Adlershof (HU Berlin)

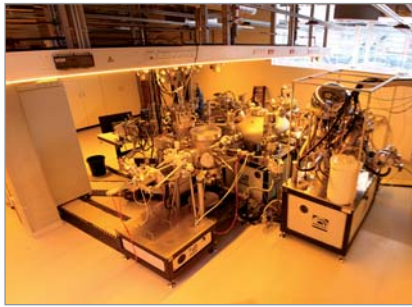
Highlight: HIOS – Hybrid Systems for Optics and Electronics

The CRC 951, funded by the German Research Foundation (DFG), is a central part of the IRIS research area »Hybrid Systems for Optics and Electronics«. The CRC 951 scientists perform cutting-edge research on hybrid systems that unite inorganic semiconductors, conjugated organic materials and metal nanostructures with the aim of realizing substantially improved and potentially novel opto-electronic functionalities not achievable with any of the individual material classes alone.

The CRC elucidated the fundamental chemical, electronic, photonic, and plasmonic interactions arising from the different nature of the components combined in HIOS, and uncovered novel hybridized quantum states and coupled excitations at their interfaces.

The CRC will benefit greatly from one of IRIS Adlershof's most important and prestigous projects: the new IRIS research building, which is about to be completed and will significantly improve the spatial and scientific infrastructure of the IRIS Adlershof and thus offer its outstanding scientists excellent working conditions.





Photos/Figures:Model of a hybrid system consisting of inorganic and organic components;
Schematic View of the CRC 951 HIOS; Collaborative Lab in the Research Building – © IRIS Adlershof (HU Berlin)

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ADLERSHOF
science at work

High-tech location Adlershof | WISTA Management GmbH

Novel vaccines, effective energy storage systems, sophisticated camera robots – these are only some of many things that are »made in Adlershof«.

Adlershof is Germany's most modern science and technology park and Berlin's largest media location – embedded in an overall urban planning concept. Covering an area of 4.2 square kilometres, Adlershof is home to 23,000 people in 1,200 companies and 14 scientific institutes. There are also 6,400 students.

The companies and institutes in Adlershof work across a range of technology fields, including photonics and optics, microsystems and materials, information technology and media, biotechnology and environmental technologies as well as photovoltaics. There are also the institutes of the Humboldt University in Berlin (chemistry, geography, computer science, mathematics, physics, psychology). In addition to the media city with its 189 companies, an ensemble of 454 commercial companies, shops, hotels, restaurants and residential buildings has emerged.

Adlershof has been breathing a unique spirit of innovation for over a hundred years. It was once the cradle of German aviation. The industrial monuments from that time create an inimitable atmosphere of tradition, creativity and innovation.

"Science City Adlershof: Welcome to Berlin's smartest neighbourhood!

Forum Adlershof (top), Light installation on the water tanks of BTB; In the major wind tunnel, look into the ZPV (Centre for Photovoltaics and Renewable Energies) – © WISTA Management GmbH

Science City Adlershof: Facts and Figures

General numbers
- Area: 4.2 km² (1,038 acres)
- Employees: 23,500
- Companies: 1,191
- Scientific Institutions: 14

Science and Technology Park
- Companies: 548
- Employees: 7,945
- New arrivals (2019): 69 companies
- Total revenues: 1,027 million € (excluding subsidies)

Media City
- Companies: 189
- Employees: 2,960 (including freelancers)
- Revenues: 299.3 million € (excluding subsidies)

Commercial business and services
- Companies and facilities: 454
- Employees: 9,764
- Revenues and budgets: 1,006.1 million € (excluding subsidies)

Photo: © WISTA.Plan GmbH/Dirk Laubner

Scientific institutions

Non-university research institutions
- Number: 8
- Employees: 1,851
- Core funding: 135.8 million €
- Third party funding: 80 million €

Humboldt-Universität zu Berlin
- Number of institutes: 6 (Computer Science, Mathematics, Chemistry, Physics, Geography, and Psychology)
- Employees: 980
- Students: 6,458
- Core funding: 56 million €
- Third party funding: 30.6 million €

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