

Guiding Themes

SALSA will develop its multidisciplinary research approach through three interconnected pairs of guiding themes, which encompass today's fundamental analytical questions: *Limits & Scales*, *Sensitivity & Selectivity*, and *Make & Measure*



The classical analytical term *limits* centers on the extreme frontiers of analytical observation, while the *scales* theme connects our different levels of understanding. Significant improvements regarding *sensitivity* and *selectivity* are the natural driving force of Analytical Sciences. *Make & Measure* not only renounces analytical problem solving solely through instruments but embraces rational design of molecules and structures.

*SALSA embodies a Humboldtian core idea:
The curious individual observing nature through
accurate measurement.*

The multidisciplinary of SALSA projects implants a new perception of Analytical Sciences in the chemical community, to implement „analytical thinking“ as a basic element in all areas of chemical research.

Contact



The third call for applications for doctoral research positions will be opened from October 10th until November 4th, 2013.

For further information, please visit:

www.analytical-sciences.de

or contact us under

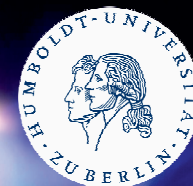
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Speakers

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to measure is to know.

SALSA

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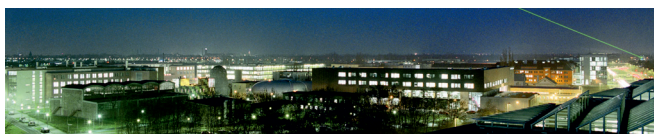
Analytical Sciences are at the core of many of today's fundamental and applied scientific problems and innovations. New insights into atomic and molecular processes in chemistry, soft matter physics, materials, and the life sciences have always been accompanied by new analytical methods and instruments.

More than every second chemist outside the educational system in the world is working in fields connected to Analytical Sciences.

The **School of Analytical Sciences Adlershof, SALSA**, is a new Graduate School at Humboldt-Universität zu Berlin, which was established in 2012 in the framework of the German Excellence Initiative. SALSA is focused on a fundamental renaissance of Analytical Sciences that will simultaneously transform the field itself into a coherent discipline located at the interface of chemistry, biology and physics.



In SALSA, analytical problem solving will be taught and learned using an integrative and multidisciplinary approach in the doctoral research work and the curriculum. As a doctoral student, you will be involved in these teaching and other activities of SALSA on Humboldt-Universität's modern science campus Adlershof.



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Doctoral research at SALSA is focused on two major research areas that present six multidisciplinary complexes of topics:

A. Biomolecular detection and characterization in complex environments

A1	A2	A3
New probes for analytics in biological environments	Localized surface plasmons for bioanalytical applications	Towards quantitative microscopy and bio-imaging

Challenges: Can we modify the surface of nanoparticles for biomolecular sensing in a cell? Can we achieve quantitative imaging of tissues by mass spectrometry?

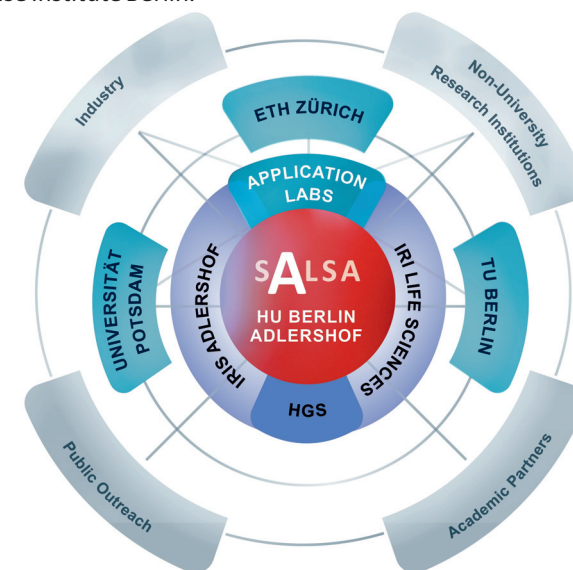
B. Analytics of structures and networks

B1	B2	B3
In situ analytics at surfaces and in networks	Multimodal structural and functional analysis of materials	Analytics of internal interfaces in composite materials

Challenges: Can we achieve multi-scale analysis of hierarchical materials? How do interfaces in materials respond to mechanical stress?

In SALSA's curriculum, *intensified case-based learning*, supported by a dedicated scientific framework will replace traditional learning and teaching patterns and provide you with new and innovative methods of knowledge acquisition.

Your doctoral research is tandem-supervised by scientists of Humboldt-Universität zu Berlin in collaboration with researchers from Technische Universität Berlin, Universität Potsdam, ETH Zurich, BAM Federal Institute for Materials Research and Testing, Helmholtz-Zentrum Berlin, ISAS Leibniz-Institute, Max Planck Institute of Colloids and Interfaces, Physikalisch-Technische Bundesanstalt (PTB) and Zuse Institute Berlin.



SALSA's PIs are scientists from all chemical disciplines, physics, biology, and modeling, they create a new perception of Analytical Sciences, and communicate "analytical thinking" as a basic element in all areas of research.

Doctoral researchers in SALSA have the chance to collaborate with industry through dedicated *Application Labs* for Mass Spectrometry and Photonics, which will interface research groups with local and external business partners, offering a significant added value to graduate education.