

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.*

Contact



The first call for applications for doctoral research positions will open in the beginning of November 2012.

For further information, please visit:

www.analytical-sciences.de

or contact us under

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to measure is to know.
SALSA

School of
Analytical Sciences
Adlershof

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. It was established in 2012 in the framework of the German Excellence Initiative.

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.

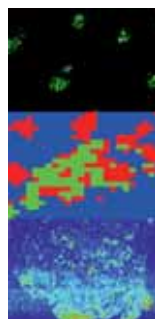


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You can choose your project from six multidisciplinary complexes of topics in two research areas.

A. Biomolecular detection and characterization in complex environments

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



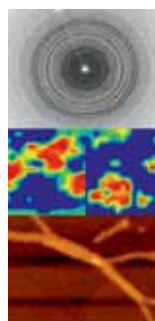
A1: New probes for analytics in biological environments

A2: Localized surface plasmons for bioanalytical applications

A3: Towards quantitative microscopy and bio-imaging

B. Analytics of structures and networks

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



B1: In situ analytics at surfaces and in networks

B2: Multimodal structural and functional analysis of materials

B3: Analytics of internal interfaces in composite materials

Analytical Sciences start from the sample and are inductive by nature. Teaching Analytical Sciences needs an inquiring, socratic approach of using real or simulated stories or real samples and problems.

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 Technical University Berlin, University of Potsdam, and ETH Zurich.

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.

MamBo Lab
Mass Spectrometry Berlin open access Lab