

## **Analytical Sciences in Action: The Graduate School SALSA**

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Analytical Sciences are at the core of many of today's fundamental and applied scientific problems and innovations. An atomic or molecular understanding of basic processes in chemistry, soft matter physics, materials and life science is enabled only through new analytical methods and instrumentation. Similar observations can be found for pressing sociopolitical conflicts of the future: A rational discussion of global climate change or new energy sources is only possible with reliable analytical results. Progress in Analytical Sciences is only possible if the underlying interdisciplinary character is acknowledged and valued.

The talk will describe what measures and action the graduate school SALSA has implemented in Adlershof to initiate a fundamental renaissance in Analytical Sciences that will simultaneously transform the field into a coherent discipline located at the interface of chemistry, biology, and physics. Analytical problems solving at tomorrow's level of complexity can only be taught and learned using an approach that is integrative and multidisciplinary with respect to both doctoral work and the accompanying curriculum.

Further, the talk will illustrate the scope of modern Analytical Science through examples from process analysis relevant to modern process intensification and industry 4.0 to bioanalysis with immunoassays and bio-imaging and the use of synchrotron radiation to elucidate fundamental reaction in concrete.