International Internship
- Start your first international research project
- Visit one of the world’s top institutes in the fields of molecular sciences, spectroscopy, and simulation
- Publish your first scientific paper together with internationally recognized top researchers
- Gain international experience at a very early stage in your career
- Earn leadership qualities in multicultural, interdisciplinary, high profile research teams
- Your internship will be organized and co-financed by the university

Our excellent Research Network:

University Alliance Ruhr
- Modern cultural, scientific, and technological area
- High standard of living
- Eleven metropolitan cities
- 5.2 million people
- 20 universities
- Enjoy thousands of leisure activities like festivals, concerts, and sports.

Ruhr-Universität Bochum
The Ruhr-Universität Bochum is one of Germany’s leading research universities. It draws its strengths from both the diversity and the proximity of many different scientific disciplines on a single, coherent campus. This highly dynamic setting enables students and researchers to work across traditional boundaries of academic subjects and faculties. The Ruhr-Universität is a vital institution in the Metropolis Ruhr and hosts about 34,000 students and about 4,700 staff.

Main Destinations close by
- Düsseldorf 0.5 hours
- Cologne 1 hour
- Berlin 4 hours
- Amsterdam 3 hours
- Brussels 3 hours
- Luxembourg 3 hours
- Paris 6 hours
- Prague 7 hours
- North Sea 3 hours

Solvation Science @ RUB
Solvation Science @ RUB provides a unifying framework for understanding and predicting solvent processes at Ruhr-Universität Bochum:
www.solvation.de

International Master's Program
Molecular Sciences - Spectroscopy and Simulation
Faculty of Chemistry and Biochemistry
Solvation Science @ RUB
University Alliance Ruhr
www.rub.de/imos
iMOS
International Master Molecular Sciences
iMOS offers you the unique chance to acquire and to apply in practice cutting-edge skills in theoretical and spectroscopic techniques in the fields of molecular chemistry, biochemistry, and physics.

Get ready:
- The Master’s Program takes two years
- The teaching language is English
- Study within a very active, interdisciplinary research environment
- Work together with top researchers in their field
- Early hands-on experience in high profile research
- Spend three months on an international internship
- Qualify for your funded doctoral thesis in Germany
- Fast Track Option for outstanding students: Start your doctoral work after only one year

Apply now:
- Online application: www.ruhr-uni-bochum.de/imos
- Submit your academic certificates
- If you are not a native speaker, file your English language certificate
- DEADLINE FOR APPLICATION: JULY 31
- Talk to us in a skype introductory conversation
- Get your visa
- Course start: October

Who should apply?
Bachelor students in
- Chemistry
- Physics
- Mathematics
- Bio-Chemistry
- related Engineering fields

We are looking for students who have a passion for science and wish to work in an international environment.

What skills should you have?
This is a highly competitive program relying on your skills in quantum mechanics, mathematics, physics, and chemistry. You should have already learned:
- Schrödinger’s equation and wave functions
- Hamilton operator
- real and complex valued vector spaces, matrices
- basis set transformations, partial differentiation
- integration over arbitrary dimensional space
- basic statistical entities like distributions, averages, data regression and hypothesis tests.

Basic knowledge of concepts of classical mechanics and thermodynamics/statistical mechanics is mandatory.

What we offer:
- Comprehensive student support
- Guaranteed housing
- Full-time student benefits
- German and English language courses
- Three-month international internship
- 2nd year: opportunity to apply for paid scientific student jobs
- Possibility to start a paid Ph.D. study after Master
- Active research environment with internationally renowned scientists
- Full assistance in study and research

iMOS Scope
- Earn cutting-edge skills in theoretical and spectroscopic techniques
- Gain deep insights into molecular physics, chemistry, and bio-chemistry
- Acquire the ability to apply the tools to a wide range of interdisciplinary scientific challenges
- Learn how to develop and solve scientific questions by employing suitable theoretical and experimental methods
- Work in international, multicultural, and interdisciplinary teams

iMOS Curriculum (120 CPs*)
1st Semester (28 or 33 CPs)
- Concepts of Quantum Mechanics**
- Statistical Physics and Thermodynamics**
- Dynamics and Simulation (+ Practical)
- Concepts of Spectroscopy 1 (+ Practical)
- Concepts of Molecular Chemistry 1
- Biomolecular Simulation**

2nd Semester (28 or 33 CPs)
- Electronic and Molecular Structure Theory (+ Practical)
- Concepts of Spectroscopy 2 (+ Practical)
- Theoretical Spectroscopy
- Concepts of Molecular Chemistry 2**
- Methods of Structural Analysis**
- Fundamentals of Magnetic Resonance**
- Scientific Programming Methods for Chemists**

3rd Semester (28 CPs)
- Hands-on training in a research group of your choice
- International Course (three-month internship)

4th Semester (30 CPs)
- Master’s Thesis

*: CPs means credit points
**: Three of seven elective courses are required for graduation.

Work Perspectives
Germany is one of the world’s leaders in applied optical technologies, chemistry and pharmacy. There exist excellent opportunities for alumni with a top-level education and training in spectroscopy and microscopy, as well as simulation techniques.