One **Master of Chemistry**

Four Areas of Specialization

Department für Chemie

Nanochemistry & Functional Materials

This specialization offers conceptual and experimental advancement in the chemistry of nanomaterials.

Starting from fundamental concepts of nanochemistry you will acquire skills in the preparation, investigation and characterization of nano-structured materials using a broad toolset of synthetic and analytical methods. You will experience the importance of materials in many applications and will learn to assess their potential in energy harvesting and storage, catalysis, (gas)sensing, biomedical applications and many more.

Program Advisors:
Prof. Sanjay Mathur
Prof. Uwe Ruschewitz

Advanced and Experimental Modules:
Inorganic and Physical Chemistry
3 Project modules and Master thesis in this area.

Catalysis & Synthesis

This program gives you access to modern concepts in synthesis and catalysis.

The program will provide you with training in the chemical synthesis of organic molecules with an emphasis on metal-, organo- and photo-catalysis. You will learn about key concepts and how to apply modern synthetic (and analytical) methods for the synthesis of relevant compounds, such as bioactive agents, in an efficient, stereoselective and sustainable manner.

Program Advisors:
Prof. Ralf Giernoth
Prof. Albrecht Berkessel

Advanced and Experimental Modules:
Inorganic and Organic Chemistry
3 Project modules and Master thesis in this area.

Photonics & Photochemistry

This program gives you an insight to the exciting world of photonics and photochemistry.

You will be trained in the basics of photochemistry and photophysics of p-conjugated (supra-)molecular and plasmonic systems. You will acquire skills in designing structure-property relations and in using light to control chemical reactions. In addition, you will be involved in the preparation of photonic devices such as light-emitting diodes, solar cells, optical sensors and switches. Finally, you will learn how to use (laser-based) spectroscopic techniques for the in-depth characterization of the above systems.

Program Advisors:
Prof. Klaus Meerholz
Prof. Axel Griesbeck

Advanced and Experimental Modules:
Organic and Physical Chemistry
3 Project modules and Master thesis in this area.

Bioorganic & Biological Chemistry

This program gives you access to the exciting world of bioorganics .

Three modules are offered with a focus on biochemistry and bioorganic chemistry that provides students with a background in biochemistry, new insights into cellular enzymology with clinical aspects, structural biochemistry using X-ray crystallography, peptide synthesis and neuro-biochemistry.

Program Advisors:
Prof. Günter Schwarz
Prof. Hans-Günther Schmalz

Advanced and Experimental Modules:
Biochemistry and Organic Chemistry
3 Project modules and Master thesis in this area.