

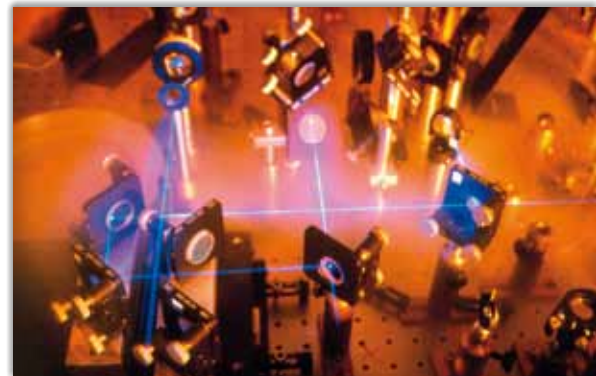
Center for Optics and Material Sciences – OPTIMAS



Optics and material sciences are the two research areas which are combined under the roof of the state research center OPTIMAS of the Technische Universität (TU, University) Kaiserslautern. In addition, optics and material sciences have been pillars of TU Kaiserslautern from the very beginning. It is the purpose of OPTIMAS to further advance their excellent reputation across the borders of the traditional research fields of sciences and engineering. When founded in 2008, OPTIMAS already comprised 15 research groups from the university departments of Physics, Chemistry and Mechanical Engineering/Process Engineering. In addition, the department “Terahertz Measurement and Systems” of the Fraunhofer Institut für Physikalische Messtechnik (Fraunhofer Institute of Physical Measurement Techniques), the Nano + Bio Center of the TU, the Institut für Verbundwerkstoffe (IVW, Institute for Composite Materials), and the Institut für Oberflächen- und Schichtanalytik (IFOS, Institute for Surface and Thin Film Analysis) are members of OPTIMAS.

For further advancing the research areas optics and material sciences, the members of OPTIMAS contribute their expertise in quantum optics, applied optics, magnetism, surface physics, molecular and material sciences. The guiding theme of research of OPTIMAS is “light – spin (magnetism) – matter”. The manifold projects range from basic research all the way to technology-oriented research and are related to physics, chemistry, biology and material sciences. At the cross sections of “light – spin – matter” cutting edge research topics like spintronics, plasmonics, meta materials, Bose Einstein condensates and optical switches are pursued.

The guiding theme of research of OPTIMAS “light – spin – matter” is initially oriented towards basic research, but the areas of optical technologies, nano sciences and material sciences harbour large potential for future technology development. Important field of applied research and transfer of technology are related to magneto electronics and terahertz spectroscopy. Several OPTIMAS members, in particular of the associated research institutes and technology oriented research groups are already collaborating with SMEs and large companies in the area of instrumentation and devices development. The members of OPTIMAS are involved in numerous scientific networks on the national and international level and are participating in many high ranking research programs of the Deutsche Forschungsgemeinschaft (DFG, German Science Foundation), the Bundesministerium für Bildung und Forschung (BMBF, Federal Ministry for Education and Research) and the European Union (EU).



Laser based experiment for analyzing ultrafast surface phenomena

Contact



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Research Areas

- top level research in area of optics and material sciences
- strengthening research infrastructure at TU Kaiserslautern
- transfer of knowledge and technology
- advancement of young researchers

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