

# Topics

Within the LSC InfectoOptics, **physicists and engineers** develop state of the art optical and photonic technologies to investigate and treat infectious diseases. Methods such as flow cytometry for studying and sorting of fluorescently labelled cells, and the combination of microfluidics with other spectroscopic approaches have an enormous potential for the rapid analysis of cells, for example in blood samples of infected patients. **Natural product researchers and infection biologists** are elucidating the molecular mechanisms of infections and are working on the development of novel active compounds against infections. In joint research projects, the knowledge and methods of the different disciplines are combined and novel research fields explored.

## The vision of InfectoOptics is:

- The development of sophisticated technologies allowing to relate optical/photonic analysis of single cells to molecular analyses.
- The use of these technologies for high impact research.
- The development of innovative technologies of single cell analyses for reliable diagnosis and efficient treatment of infections.
- The deduction of pathogen-specific signatures from immune cells by combining and further developing advanced optical and single cell omics technologies.



The LSC InfectoOptics builds a bridge between the two research foci in Jena **Life Sciences and Infection Biology** as well as **Physics and Photonics**. The interdisciplinary graduate training within the LSC InfectoOptics connects the two profile lines **Life** and **Light** of the Friedrich Schiller University Jena.

