

## DOCTORAL PROGRAM



Photonics is one of the main research fields of the Friedrich-Schiller-Universität Jena and currently more than 150 students are enrolled in our research oriented doctoral program.

We offer:

- ◆ High-end research and education in a world-class scientific environment with intensive mentoring.
- ◆ An international program with modules focused on scientific and technical skills and equipping you with transferable skills.
- ◆ Full financial support by a scholarship program for the best applicants.

## ADMISSION

Master's degree program: Applicants must have obtained or be about to obtain a Bachelor's degree or equivalent qualification in Physics or Engineering.

Doctoral program: Applicants must have obtained or be about to obtain a Master's degree or equivalent qualification in Physics, Optics, Engineering or a related field.

At the Friedrich-Schiller-Universität Jena, no tuition fees are charged except for a minor administration fee (~200 € per semester).



## APPLICATION

All applicants for scholarship programs, including self-funded applicants must use the online application system of the Abbe School of Photonics which is accessible at [www.asp.uni-jena.de](http://www.asp.uni-jena.de)

## PARTNERS

The Abbe School of Photonics is supported by the European Union, the German federal and state governments and a distinct number of German optics and photonics companies.



## CONTACT

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**Abbe School  
of Photonics** | JENA  
Friedrich-Schiller-Universität



## SCHOLARSHIP PROGRAMS FOR

- ◆ INTERNATIONAL MASTER IN PHOTONICS
- ◆ DOCTORATE IN PHOTONICS

Excellent opportunities for academic careers at every stage in Germany

Freistaat  
Thüringen



Federal Ministry  
of Education  
and Research

## OPTICS & PHOTONICS EDUCATION

The photon will be a major driving force for technological advancement in the 21st century, from new light sources to improved renewable energy or to wherever your imagination takes us.

Without photonic technologies, the challenges that we encounter in the fields of energy, environment, society, communication and production will not be solved.

An initiative of the Federal Government of Germany, the state of Thuringia and 20 industrial companies has been launched in order to educate young and dedicated people in the field of Optics & Photonics: The Abbe School of Photonics.

### WE OFFER

- ◆ A top-notch international program solely taught in English.
- ◆ Close cooperation with Germany's photonics industry and academia in terms of internships and master's thesis.
- ◆ A broad education program in science and engineering with practical trainings, lab projects, language courses, and courses in transferable skills.
- ◆ Career services strongly connected to Germany's photonics industry and academia.

## MASTER OF SCIENCE

### B.Sc. in Phys. / Chem. / Eng. / Math.

#### ADJUSTMENT

16 ECTS

Fundamentals of modern optics, Structure of matter, Condensed matter physics

#### FUNDAMENTALS

22 ECTS

Optical metrology, Sensing, Modeling and design, Laser physics, Experimental Optics

#### SPECIALIZATION

24 ECTS

Computational photonics, Micro/nanotechnology, Nanooptics, Image processing, Nonlinear optics, Nanomaterials, Optoelectronics, Photovoltaics, Biophotonics, etc.

#### INTERNSHIP

10 ECTS

Practical training in photonics industry

#### RESEARCH

18 ECTS

Optics training in advanced research labs

#### MASTER'S THESIS

30 ECTS

Research thesis in university laboratories, Industry research departments, Fraunhofer Institute for Applied Optics and Precision Engineering (IOF), Leibniz Institute of Photonic Technology (IPHT) or Helmholtz Institute Jena (HIJ)

### M.Sc. in Photonics $\Sigma$ 4 semesters & 120 ECTS

ECTS = European Credit Transfer System

## MSc SCHOLARSHIPS & EXCHANGE

A scholarship program funded by Germany's optics industry and the state of Thuringia offers full financial support for the most promising foreign students (up to 800 € per month).

Abbe School of Photonics is linked with renowned international universities from all over the world, supported by various programs funded by the European Union. Thus, our students can spend up to one year of their MSc course at one of the partner universities. The long list of these partners includes, but is not limited to, Australian National University Canberra and University of Sydney (both Australia), CREOL – University of Central Florida, University of Arizona, University of Rochester (all USA), University of Toronto, INRS – Université de Recherche in Montréal, Université Laval in Québec City (all Canada), and Massey University in Wellington (New Zealand).

## JENA

Jena is a university city with more than 100,000 residents in the German federal state of Thuringia. Jena has blossomed into an internationally recognized center for education, research and high-tech industries. Jena's history is strongly connected to research and industrial application in the field of optics. It is in Jena, that Ernst Abbe, Carl Zeiss and Otto Schott laid the foundations for economic prosperity with the design and manufacture of superior microscopes and other precision optics, and for optical industries like ZEISS, Jenoptik and SCHOTT Jena.

Optics research is still the major focus of Jena. Beside the Friedrich-Schiller-Universität Jena, excellently equipped Fraunhofer, Leibniz and Helmholtz institutes perform fundamental and applied research in the optical sciences in close cooperation with the local optics industry.

