

# Karlsruhe School of Optics & Photonics

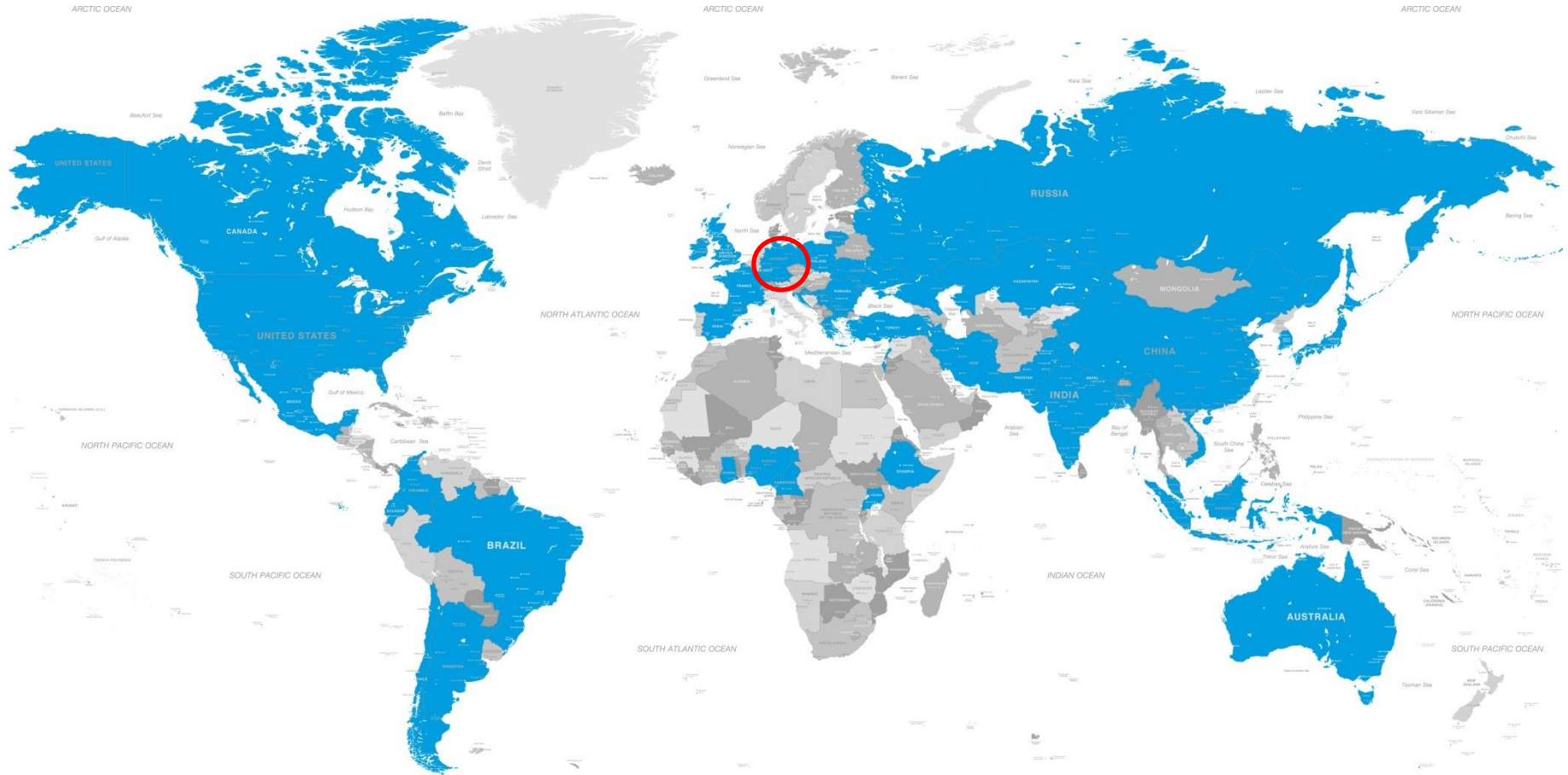
## Afraid of the dark? Study Optics & Photonics in Germany!

Miriam Sonnenbichler | Feb. 1, 2016



# KSOP in the Heart of Europe

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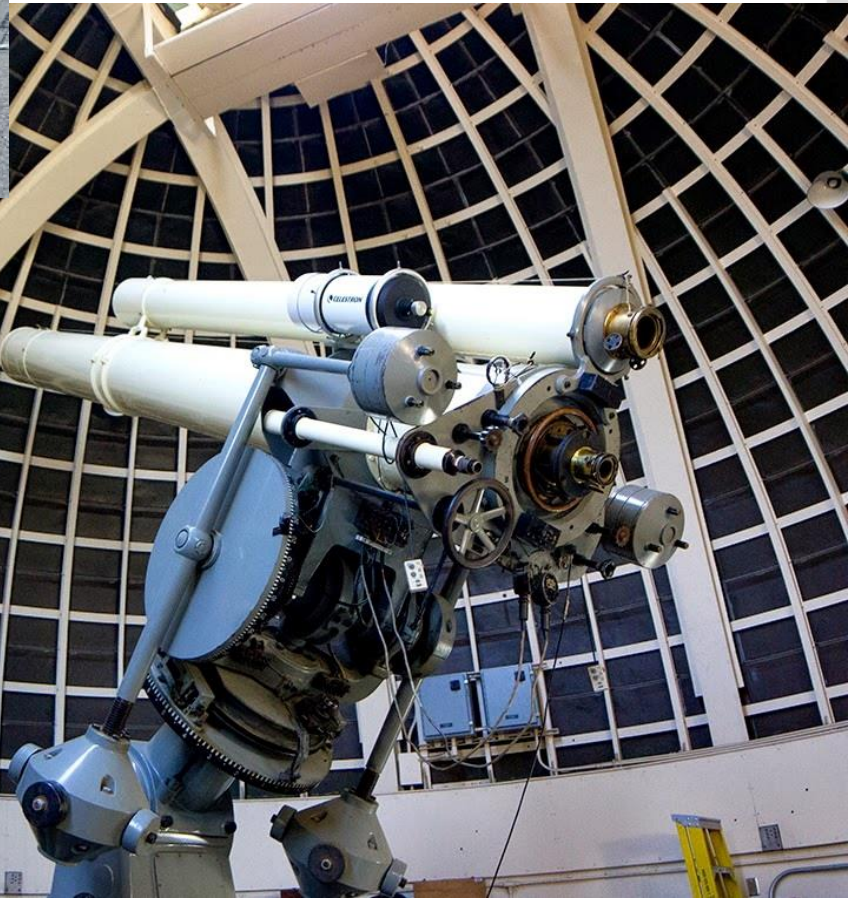














# KSOP in the Heart of Europe

Afraid of the dark? Study Optics & Photonics!



# Karlsruhe Institute of Technology (KIT)

## Overview on Statistics and Subject Areas



Karlsruhe Institute of Technology

24,000

Students

360

Professors

9,200 from which 6,000  
Employees Researchers

KSOP

Karlsruhe School of Optics & Photonics

Physics

Chemistry & Lifesciences

Electrical Engineering and  
Information Technology

Mechanical Engineering

### **Institute of Applied Physics**

Institute of Biomedical Engineering

Institute for Information and Processing Technology

Institute of Inorganic Chemistry

Institute for Measurement and Control Systems

Institute for Meteorology and Climate Research

Institute of Micro- and Nanoelectronic Systems

Institute of Microstructure Technology

Institute of Nanotechnology

Institute of Organic Chemistry

### **Institute of Photonics and Quantum Electronics**

Institute of Physical Chemistry

Institute for Theoretical Solid State Physics

Institute of Toxicology and Genetics

### **Light Technology Institute**

Zoological Institute



## German TU9 University



One of nine excellent, leading Universities in Engineering and Natural Sciences  
High standard education and excellent job perspectives

## QS World University Rankings (2016)



**47** of 398 in Subject Area **Engineering and Technology**  
**34** of 400 in Subject Area **Natural Sciences**

## Times Higher Education Ranking (2016)



**165** of 401 Universities Worldwide



Dietmar Hopp



Emil von Skoda



Carl Benz



## Karlsruhe School of Optics & Photonics

Founded in 2006 within the German “Excellence Initiative”

Excellence status confirmed by the DFG in 2012



Cooperation of 16 KIT institutes and external partners



~ 100 Ph.D. candidates, ~120 Ph.D. Alumni

> 130 M.Sc. students, > 150 M.Sc. Alumni



# KSOP Mission and Vision

Heading towards brilliant International Alumni



## KSOP aims on:

Excellent graduate education

Multidisciplinary training concept

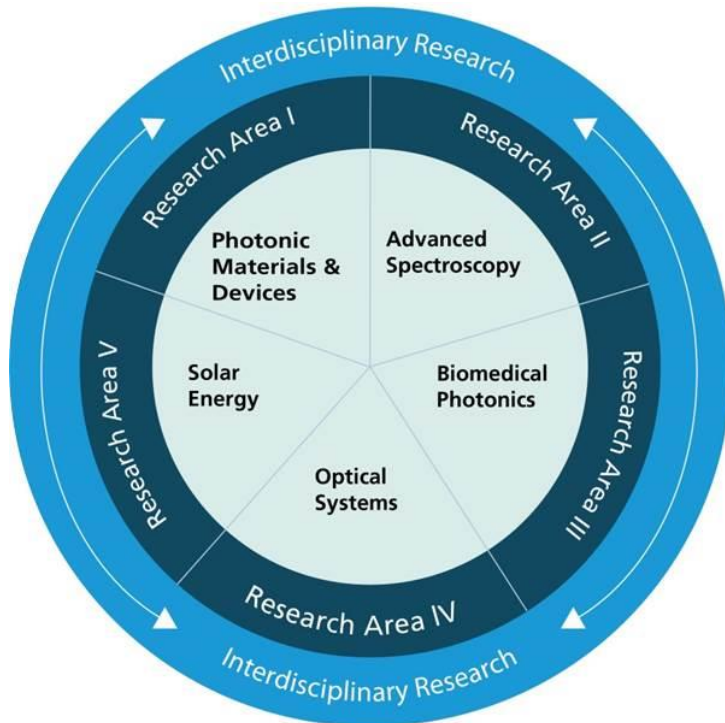
Excellent research through cooperation  
with several institutes und faculties

International visibility of research and teaching

Close cooperation with industry

# KSOP Research Structure

## Covering the most promising Optics Fields



**RA I**

- Metamaterials
- Telecommunication Devices
- Luminescent Nanoparticles

**RA II**

- Micro-photoluminescence Spectroscopy
- Time-resolved Spectroscopy
- Environmental Spectroscopy

**RA III**

- Super-resolution Microscopy
- Optical Biosensing
- Tailored three-dimensional Scaffolds for Cell Culture

**RA IV**

- Autonomous Vehicles
- High Bit-rate Optical Communications
- Lab-on-a-chip Systems

**RA V**

- Thin Film Photovoltaics
- Organic Solar Cells
- Light Management

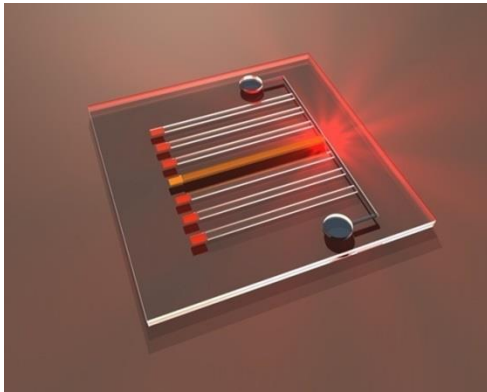


# KSOP Research Structure

Covering the most promising Optics Fields



Autonomous driving



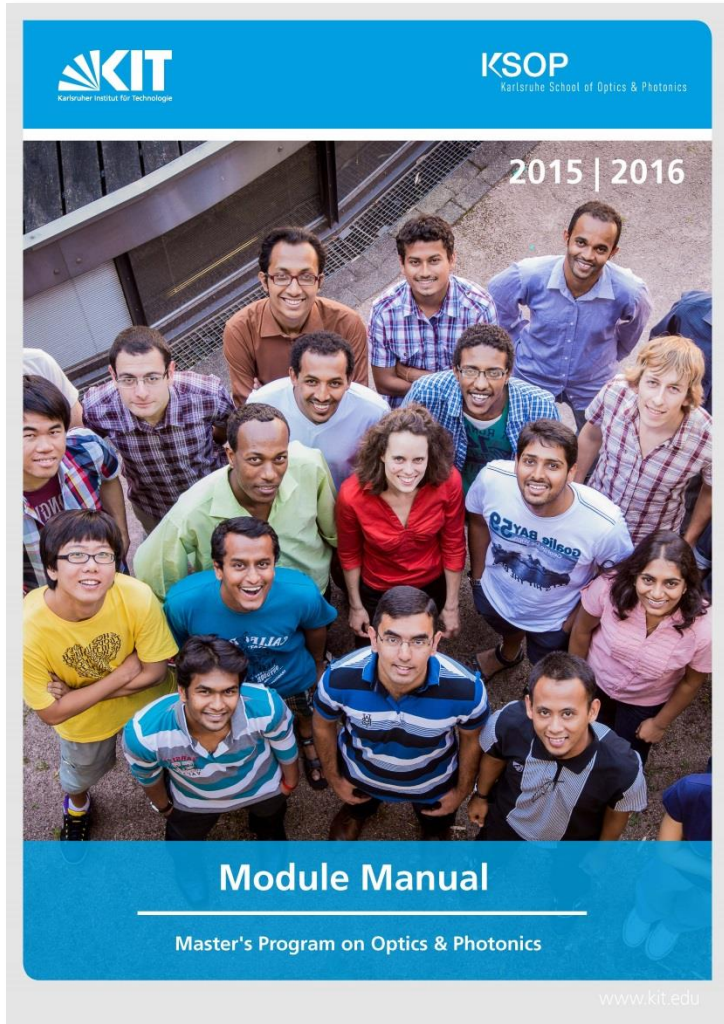
Lab-on-a-chip system for biomedical analysis  
using an organic semiconductor laser



Flexible photovoltaic module based on  
organic semiconductors

# KSOP Master Program

## An Interdisciplinary Study Program



2-years M.Sc. Course in Optics & Photonics

40 Students per intake

International Flair: Over 30 Nationalities

Completely Taught in English

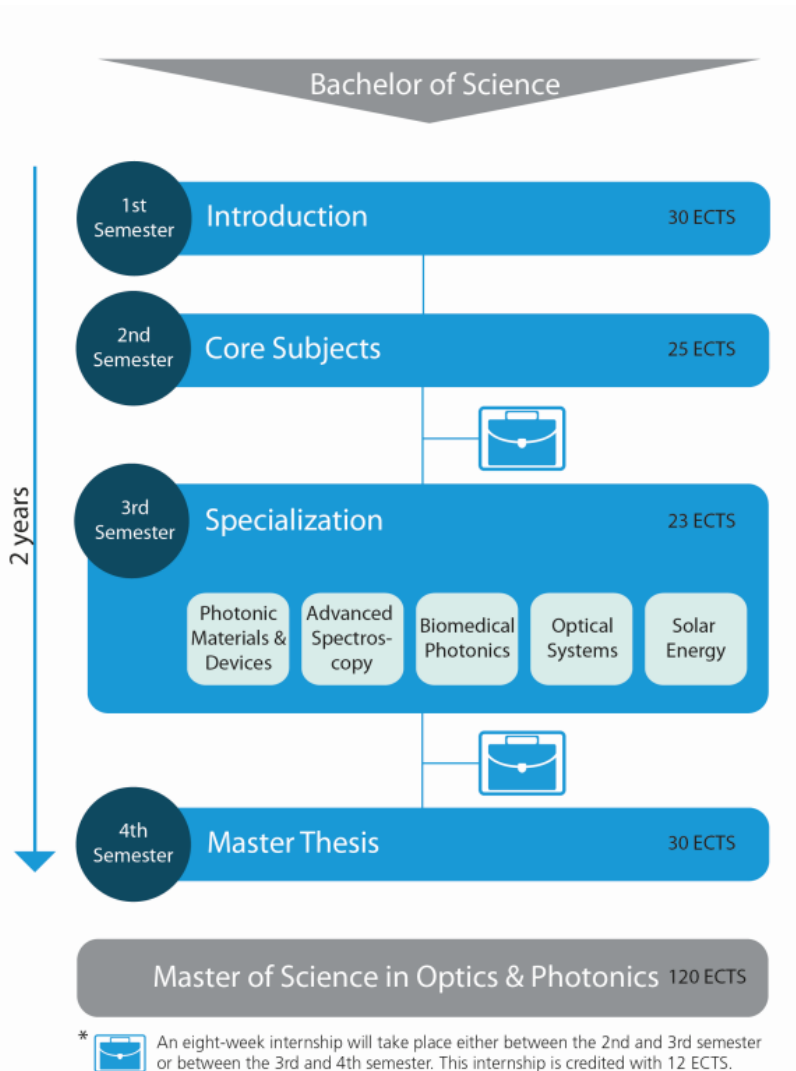
**No** Tuition Fees

Scholarships available



# KSOP Master Program

## An Interdisciplinary Study Program



**Start:** every winter term

**Bachelor degree in natural or engineering sciences:**

- ✓ Physics
- ✓ Chemistry
- ✓ Electrical Engineering
- ✓ Mechanical Engineering
- ✓ Mathematics (with minor in physics)
- ✓ Computer Science (with minor in mathematics)
- ✓ Biology, Biotechnology, Biomedical Engineering (with minor in physics)

Apply until  
**April 30**  
every year

# Scholarship & Industry Internship Program

## Outstanding Scholarship Program

for approx. **five** of the most promising students per year  
**up to 800 €** for a max. duration of two years





## Cooperative Initiative

German Federal Government (BMBF),  
10 companies from the optics & photonics industry

## Objective

**Attract** students to study in the field of O&P  
and **qualify** them in the best way

## Industry Internship Program

 <b>BERLINER GLAS</b> <a href="http://www.berlinglas.de/en/home.p?">http://www.berlinglas.de/en/home.p?</a>	 <b>OSRAM</b> <a href="http://www.osram.com/osram.com/p?">http://www.osram.com/osram.com/p?</a>
 <b>JENOPTIK</b> <a href="http://www.jenoptik.com/en_home.p?">http://www.jenoptik.com/en_home.p?</a>	 <b>Polytec</b> <a href="http://www.polytec.com">www.polytec.com</a>
 <b>STORZ</b> KARL STORZ – ENDOSKOPE <a href="http://www.karlstorz.com/cps/rde/xchg/karlstorz-en/hs.xsl/index.htm.p?">http://www.karlstorz.com/cps/rde/xchg/karlstorz-en/hs.xsl/index.htm.p?</a>	 <b>TRUMPF</b> <a href="http://www.trumpf.com">www.trumpf.com</a>
 <b>novalad</b> <a href="http://www.novalad.com/">http://www.novalad.com/</a>	 <b>ZEISS</b> We make it visible. <a href="http://www.zeiss.de/en">http://www.zeiss.de/en</a>
 <b>Agilent Technologies</b> <a href="http://www.agilent.com">http://www.agilent.com</a>	 <b>SICK</b> Sensor Intelligence. <a href="http://www.sick.com">www.sick.com</a>





# Erasmus Mundus Europhotonics

Around the World at almost the Speed of Light

Marseille/ France



Karlsruhe/ Germany



Barcelona/ Spain



## European Master Program

2-years study of Optics & Photonics

Studies at three excellent universities in  
Marseille, Karlsruhe and Barcelona

Multiple M.Sc. Degrees possible

Industry Internship Program

Scholarships available

Start: Every Winter Term

Apply until  
**March 1<sup>st</sup>**  
**2016**

[www.europhotonics.org](http://www.europhotonics.org)

# Looking for a bright future?

## Do Research in Optics & Photonics!



3-years Doctorate Program in Optics & Photonics

Scholarship Program

Working Language: English

Mentoring Program

Additional Management, Technical, Scientific & Key Competency Modules, Networking

Optional: MBA Fundamentals Program



## Management Modules

- Entrepreneurship
- Human Resource Management
- Business Strategies

## Technical Modules

- Micro and Nanotechnology Laboratory
- Laser Laboratory Work
- Laser Materials Processing

## Personal Key Competence Modules

- Scientific Writing & Presentation

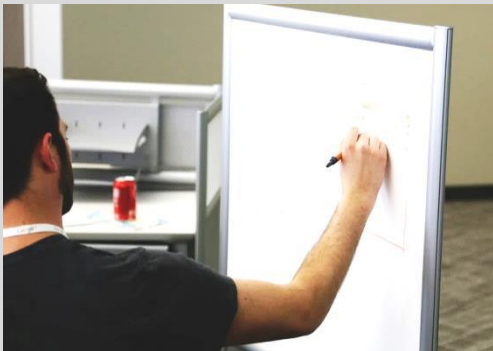
## Scientific Modules

- Summer Schools
- Conferences
- Symposia



# Looking for a bright future?

## Job Perspectives after Graduation at KSOP



### For example, our graduates work as...

Post-docs in academia

Application & Development Engineers

Optical Designers

International Project Managers

Software Developers and System Architects

Quality and Product Managers

Technical Sales & Service Engineers

# KSOP Support for International Students

## Accommodation, Orientation, Consultation



# KSOP Support for International Students

## Accommodation, Orientation, Consultation



### Students support and services include...

Campus Accommodation (rooms, apartments)

Consultation on visa, bank account, insurances, etc.

Company excursions

Application workshops, intercultural trainings

Organized get-togethers



# Active Student Life in Karlsruhe

## Student Networks



[www.optics-karlsruhe.de](http://www.optics-karlsruhe.de)

Part of worldwide network of student chapters  
Optical Society of America (OSA)  
International Society for Optics & Photonics (SPIE)

Optics Students Karlsruhe: OSKar

Support, Networking, Events, Excursions

# Life in Karlsruhe and Germany

## Leisure Time and German Culture





# KSOP in the Heart of Europe

Afraid of the dark? Study Optics & Photonics!





# Life in Karlsruhe and Germany

## Leisure Time and German Culture



## Why KSOP?

Our students & alumni say:



Taught in English  
Excellent Research  
No Tuition Fees • Scholarships  
Strong Link to German Industry

International Environment  
Interdisciplinary  
Excellent Professors  
Awesome Labs  
Internship Program

Apply now for your European experience and  
excellent education in optics & photonics!

Let's keep in touch:





# KSOP Team

Your ontact for everything further.



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<https://www.intl.kit.edu/english/index.php>

**KSOP**  
Karlsruhe School of Optics & Photonics

**KIT**  
Karlsruher Institut für Technologie