

COMMITTED TO LIGHT.

Meeting Photonics Israel, 28 November 2019, Tel Aviv

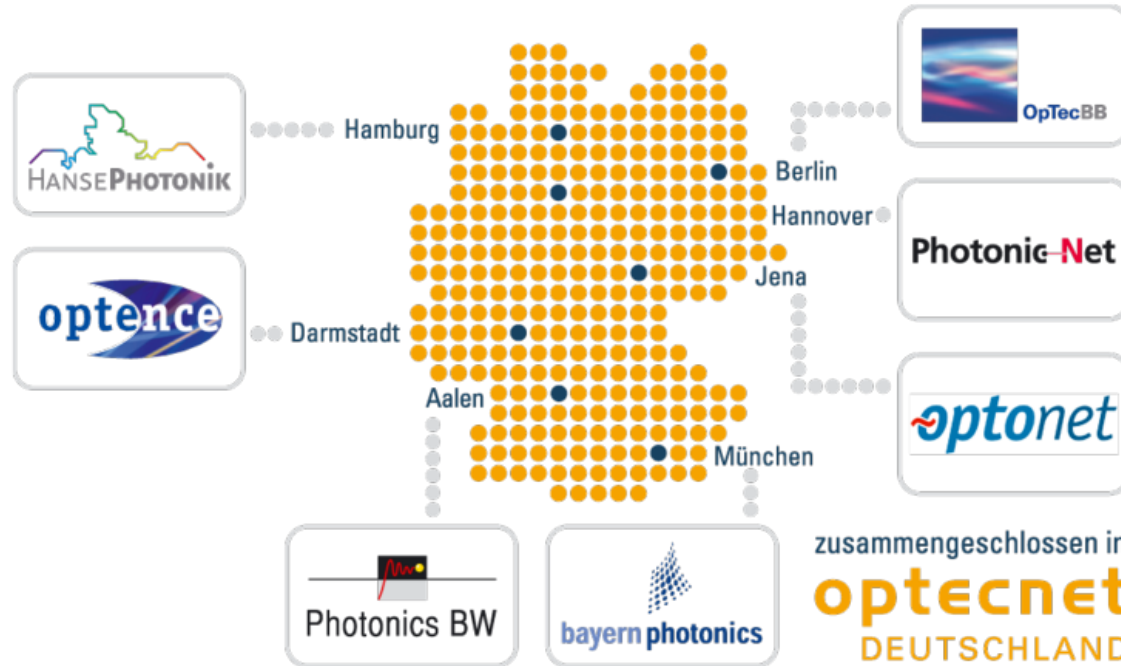
Cluster portrait › Photonics Thuringia
Israeli-German Cooperation in Photonics

Anke Mank, Manager International Affairs, OptoNet e.V.

COMMITTED TO LIGHT.



The German Photonics Community - OptecNet



Meeting Photonics Israel, Tel Aviv, 28 November 2019

The very beginning of the Thuringian photonics cluster – an interdisciplinary cooperation



Carl Zeiss
(1816 – 1888)

Ernst Abbe
(1840 – 1905)

Otto Schott
(1851 – 1935)

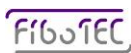
Picture: CARL ZEISS Stiftung, CARL ZEISS Foundation

Today: Germany's Photonics heart –
vivid – innovative – strong



OptoNet – Photonics Network Thuringia

- » **Represents** the interests of 100 players of Thuringia's photonics cluster
- » **Provides** a vivid platform for information and communication
- » **Supports** the national and international visibility of the cluster, its players and competencies
- » **Promotes** young talents and future experts with special career programs
- » **Is involved** in various activities of location marketing of the Photonics region



OptoNet – Photonics Network Thuringia

- » Founded 1999 as a **bottom-up initiative** of 13 companies
- » Founding years: supported and **funded** by the Federal Ministry of Education and Research
- » Since 2011: funding with **membership fees** and earnings from projects and workshops

Board members

Chair:

Dr. Torsten Poßner Grintech

Prof. Dr. Gunther Notni Technical University Ilmenau

Dr. Oliver Falkenstörfer Carl Zeiss Jena

Prof. Dr. Andreas Tünnermann Fraunhofer IOF Jena

Dr. Sebastian Heidrich JENOPTIK

Dr. Fred Grunert ams Sensors Germany

Peggy Bärenklau Heracle

Sabine Gottschaldt LEJ Leistungselektronik Jena

Photonics Region Thuringia

- » diversified Photonics industry with **cutting edge technologies** on international growth markets
- » outstanding **research facilities** with strong connections to industry
- » **universities** with excellent reputation in the field of Photonics
- » distinguished **vocational training** facilities in modern institutions
- » English member directory: <https://www.optonet-jena.de/english-pages/members/>

Key Figures of Photonics in Thuringia

Unternehmen Companies	180
Umsatz Sales (in EUR *10⁹)	~3,3
Umsatzanteil für Forschung & Entwicklung R&D quote	12%
Exportanteil am Umsatz Export share of sales	67%
Beschäftigte gesamt (Industrie & Forschung) Total workforce (industry & research)	16.200
Beschäftigte in der Industrie Workforce in industry	14.600
Beschäftigte in Forschungseinrichtungen Workforce in research	1.600
Durchschnittliche Betriebsgröße Average company size	81
Auszubildende Trainees	~ 520
Ausbildungsquote Trainee percentage	3,3 %
Ausbildungsbetriebe Companies with trainees	75

PHOTONIK IN THÜRINGEN

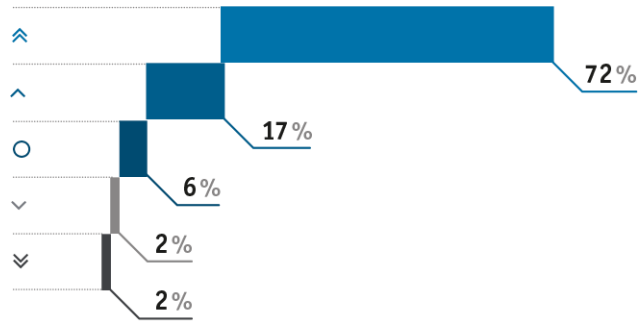
PHOTONICS IN THURINGIA



Meeting Photonics Israel, Tel Aviv, 28 November 2019

Unternehmensgröße	Company size
Beschäftigte in Thüringen	No. of employees in Thuringia
< 10	A
10-49	A
50-249	A
> 250	A

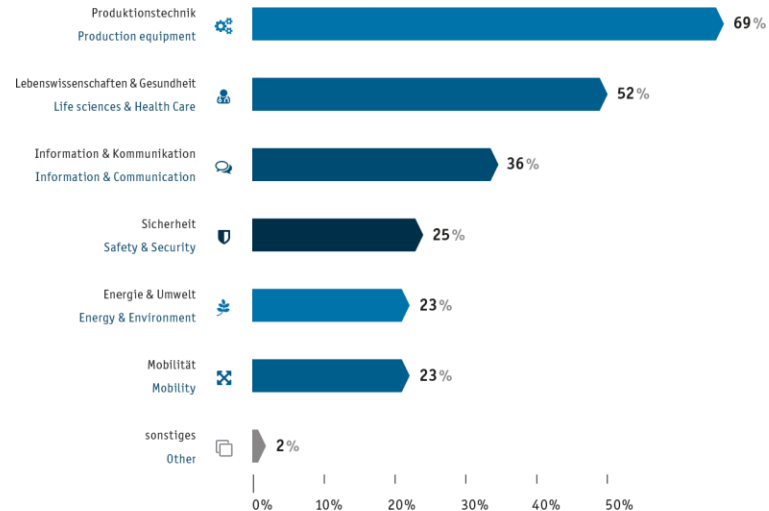
Significance of R&D to Companies



Bedeutung von F&E im Unternehmen

Significance of R&D to companies

Product application areas



Einsatzgebiete der Produkte (Mehrfachnennungen möglich)

Product application areas (multiple answers possible)

Technology

- » Optical Components and Systems, Freeform Optics
- » Ultra Precision Manufacturing (International Workshop in 2020)
- » (Ultra Short Pulse) Laser Technology
- » Optical Materials and Coating
- » Sensing and Metrology
- » Optical Fibers and Fiber Sensors
- » Biophotonics/Microfluidics/Point-of-Care-Technologies

Strategic Technology Development

SPONSORED BY THE

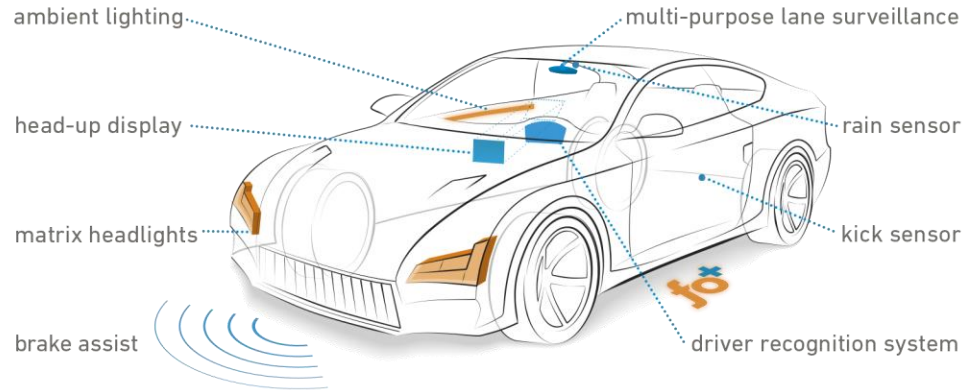


Federal Ministry
of Education
and Research



fo+ [freeform optics plus]

Regional growth core to develop and market innovative freeform optical systems, <https://fo-plus.de/en/>



customizable light shapes + targeted light delivery + less straylight
multispectral + less number of optical elements + reduced weight and space

Connecting points

- » Optical Materials (Optics Balzers, Fraunhofer IOF, Hellma Materials, SCHOTT Advanced Materials, VITRON, Fraunhofer IKTS, Docter Optics,...)
- » (Optical) measurement methods for quality purposes (mahr, OptoTech, Göpel electronic, piezosystem, SIOS, ZEISS,...)
- » High precision optical components (Precision Optics Gera, asphericon, OPTIKRON,...)
- » Coating and surface functionalization (Optics Balzers, ORAFOL, Fraunhofer IKTS, Layertec, Trionplas,...)

Cooperation ideas

- » Addressing the applicational side together – Photonics in Life Sciences, Cosmetics, Automotive, Energy, Mechanical Engineering
- » Israeli and German sales partners
- » Joint (EU, ZIM,..) R&D projects
- » Joint workshops

Career Program › OptoNet MASTER+



- » promotional program with thematically focused excursions and soft skill trainings
- » company visits, specialist lectures and expert panel discussions
- » Cooperation of companies and students at an early stage

Aim: strengthen students' bond to the industry

- » <https://optonet-masterplus.de/>

Networking



- » OptoNet part of **Global Photonics Alliance**
- » A club of dedicated international Photonics Cluster Managers to strengthen the bond of international photonics regions
- » Regular meetings at major events like Photonics West, LASER Munich and others

Israel and Thuringia- committed to photonics



Meeting Photonics Israel, Tel Aviv, 28 November 2019

Working together with the region of Jena and OptoNet...

- » State-of-the-art photonics technology in a technology focused network
- » Enabling applications
- » Cooperative R&D, joint (international) projects
- » Information on and access to events and technology workshops with member conditions and rates
- » Access to international photonics networks and key players
- » ...

Outlook 2020

3rd International Summer School Advanced Lens Design



3rd International Summer School

›**Advanced Lens Design**‹

29 June -3 July 2020, Jena

- › Lecturer Prof. Herbert Gross, Friedrich-Schiller-University Jena, former Head of Optics Design at Carl ZEISS AG



Technologie *Technology*

Workshops · Seminare workshops · seminars

· Weiterbildungen further training

› Ultrakurzpulslaser

› Ultra Precision Manufacturing

Begleitung von Projekten project support

› TOF › fo⁺

Beratung zu Fördermöglichkeiten public funding opportunities

Expertenvermittlung expert recruiting



Networking & Kooperation *Networking & Cooperation*

Plattform › Clustertreffen, platform › cluster meetings

› Mitgliederfrühstück

Statistiken und Analysen surveys and studies

› PHOTONICS REPORT

Vernetzung & networking

Kooperationsanbahnung cooperation initiatives

Social Media linkedIn



Internationales *International affairs*

Messen & Delegationsreisen trade shows & joint missions

USA, Israel, Niederlande USA, Israel, Netherlands

Kooperationsanbahnung partnerships

› OptoNet Summer School

› Advanced Lens Design

Clusteraustausch im Rahmen der cluster cooperation

› Global Photonics Alliance



Nachwuchsförderung & Fachkräftesicherung *Human resources & Talent promotion*

Kostenfreie Stellenbörse job portal

Beratung und Austausch consulting and exchange

› Expertenkreis Moderne Arbeit › expert round Modern work

Branchenmarketing industry marketing

› OptoNet MASTER⁺

Nachwuchsarbeit in Schulen talent scouting

› OptoNet ExtraKlasse



Standortmarketing *Site marketing*

Newsticker, news ticker

Kompetenzdatenbank expertise database

Interessenvertretung bei lobbying

politischen Entscheidern & government relations

Mitarbeit in Verbänden association work

und Gremien

Strategisches Marketing strategic marketing

Office



Thomas Bauer CEO

Anke Mank International Affairs

Nora Kirsten Communication

Peggy Lerner Talent Promotion

Arite Krippendorf Financing & Back office

*Thank you for your
attention.*

OptoNet

Photonics Network Thuringia

Leutragraben 1
07743 Jena

T: +49 (0) 36 41 / 573 36 50

F: +49 (0) 36 41 / 573 36 59

info@optonet-jena.de

www.optonet-jena.de