

# Organic Photonics

## Displays, Lightning and Photovoltaics

Creating Value with Light

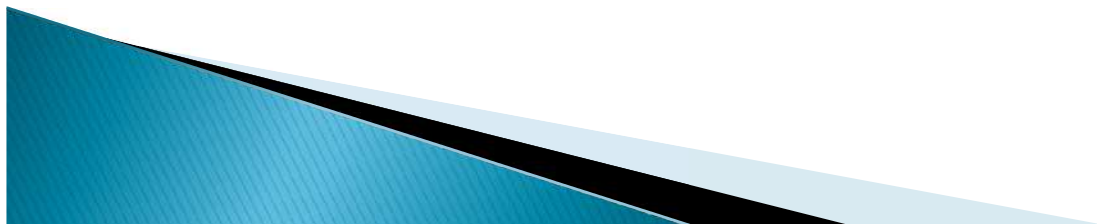
**Dr. Berthold Schmidt**

Member of CTI-Expert Team

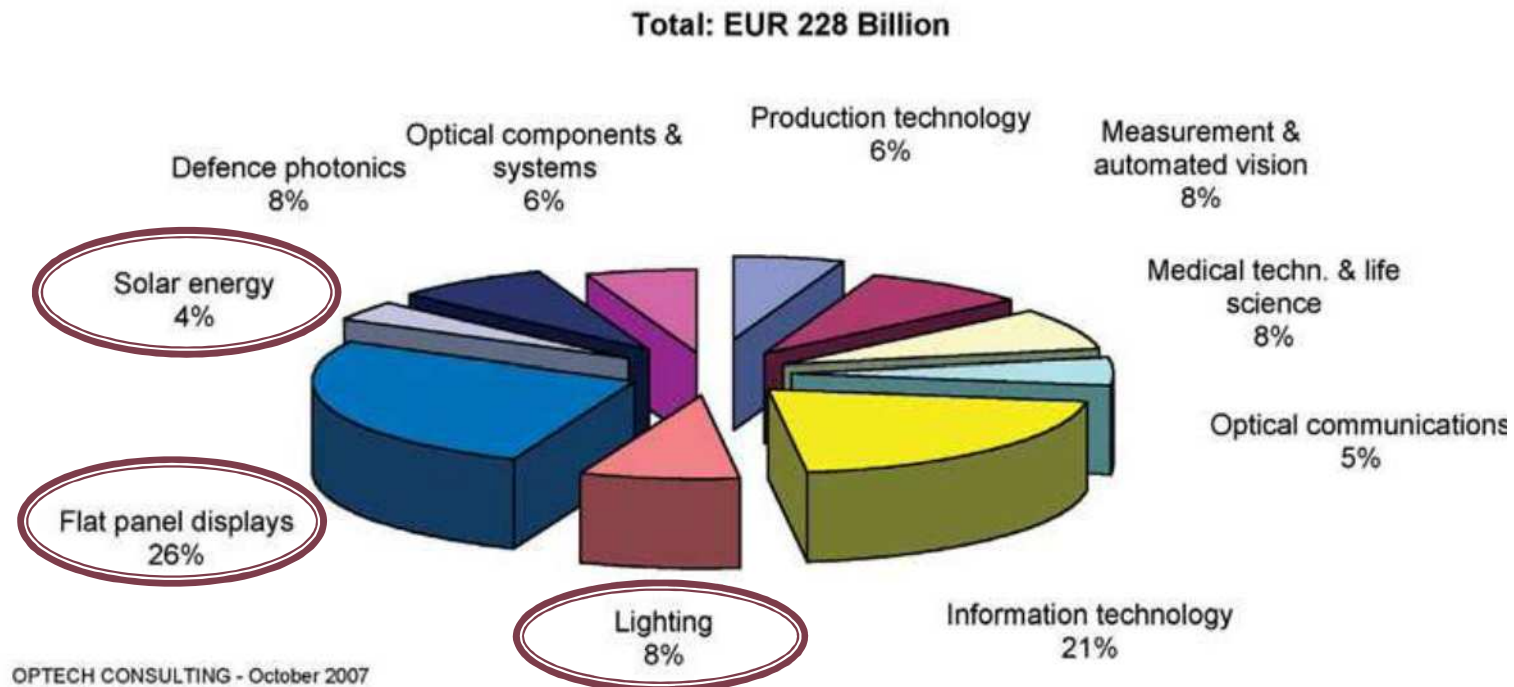
Micro and Nano Technologies

# Overview

- ▶ Motivation for the workshop
  - Industrial attraction and technical challenge
- ▶ Workshop organization and expectations

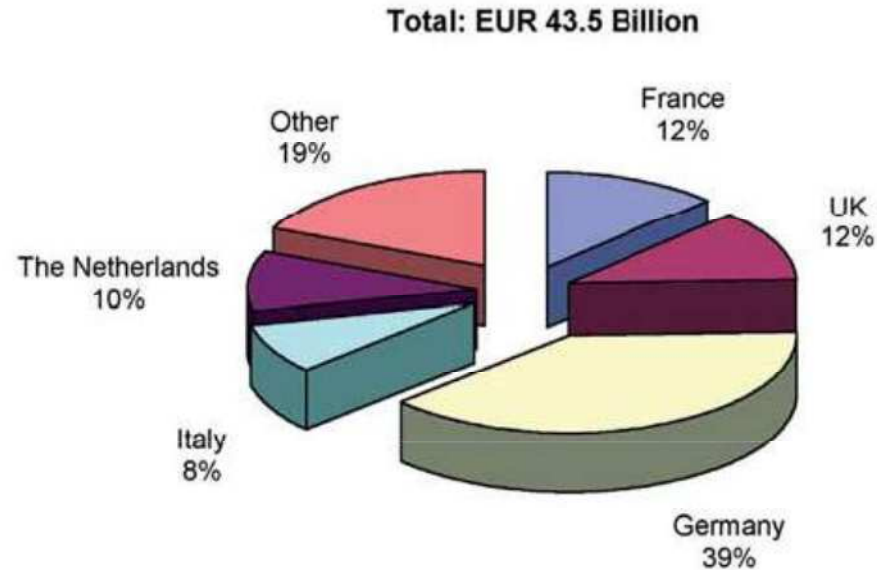


# World Wide Photonics Market



- ▶ TAM of the workshop content is in the order of EURO 86 Billion
- ▶ Expected growth rate in the range of 10-30% per year !

# Europe and Switzerland



OPTECH CONSULTING - October 2007

- ▶ Netherlands followed by Germany and Switzerland have the highest per capita photonics production volume in Europe!
- ▶ With more than **2 Billion Swiss Franc** in revenue Switzerland is rated as one of the eight biggest European countries in terms of photonic production volume. Assumed share as part of the “others” is therefore around 3-4%.

# Organic Photonic Applications

- ▶ ... emitting radiation
  - Organic Light Emitting Diodes (OLEDs)



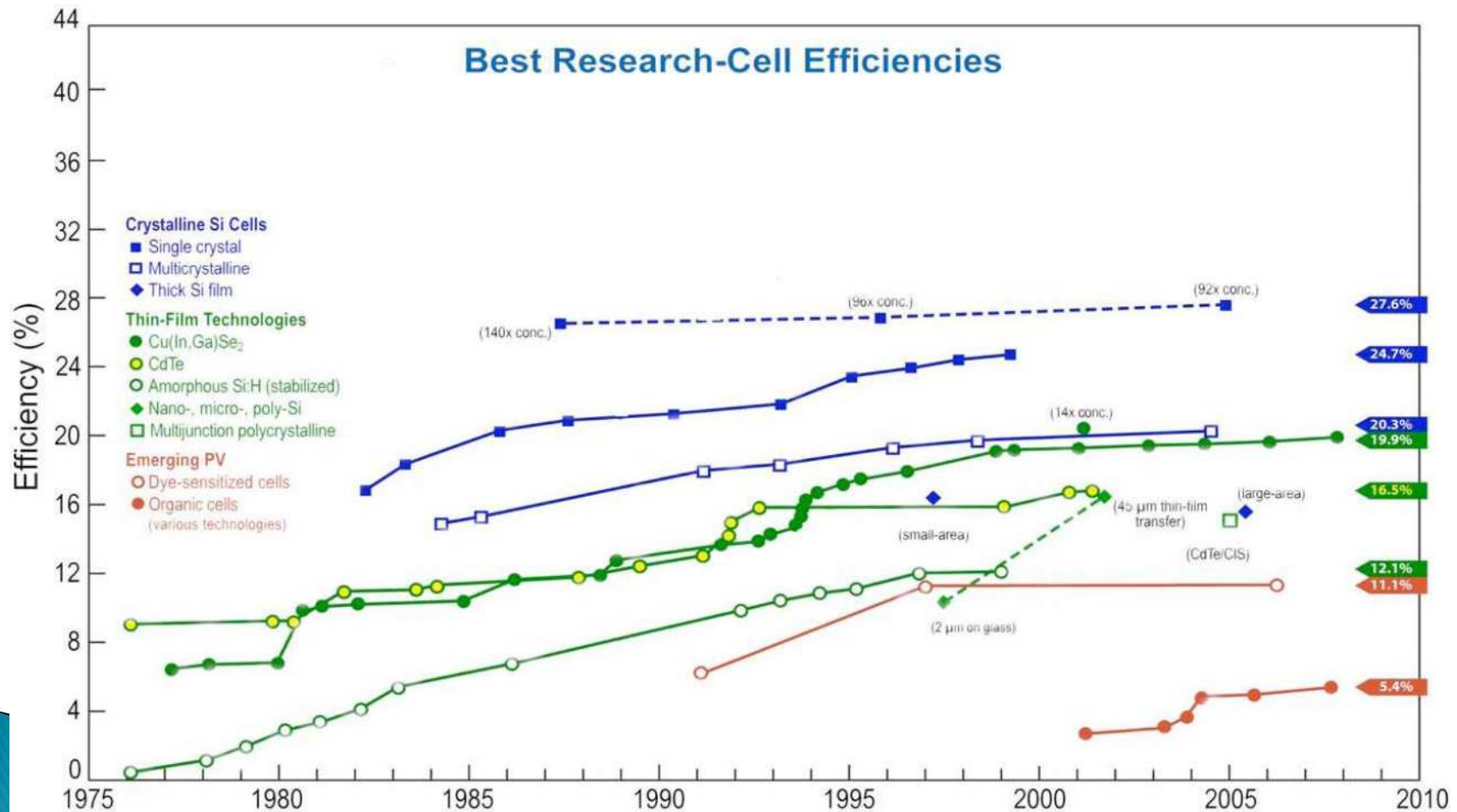
# Organic Photonic Applications

- ▶ ... absorbing radiation
  - Organic Solar Cells, RFIDs, Printed Sensors...
    - Flexible
    - Light weight
    - Low cost



# Organic Photonic: Technical Challenges

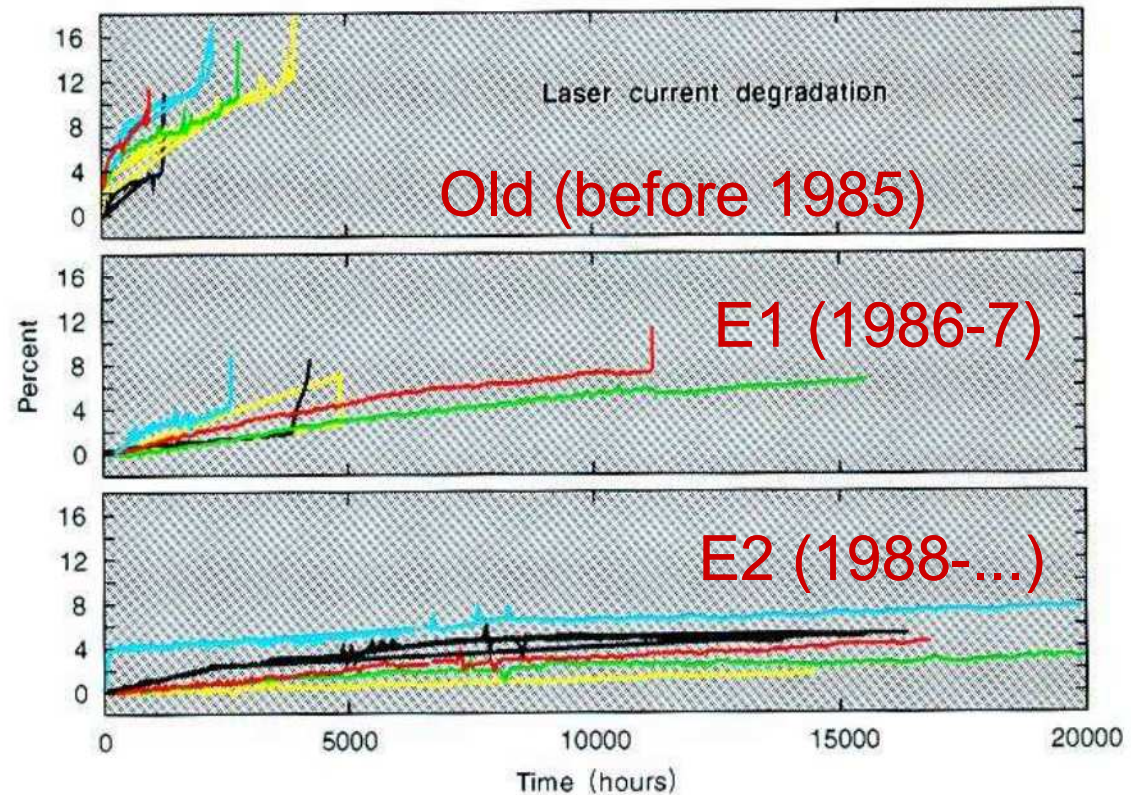
## ► Efficiency enhancement



Source: National Renewable Laboratory

# GaAs laser with similar problems in the past

- ▶ Industry solved it by +10 years of R&D (quantum well, dots, GRICC) for efficiency enhancement (25% → 70% today!)



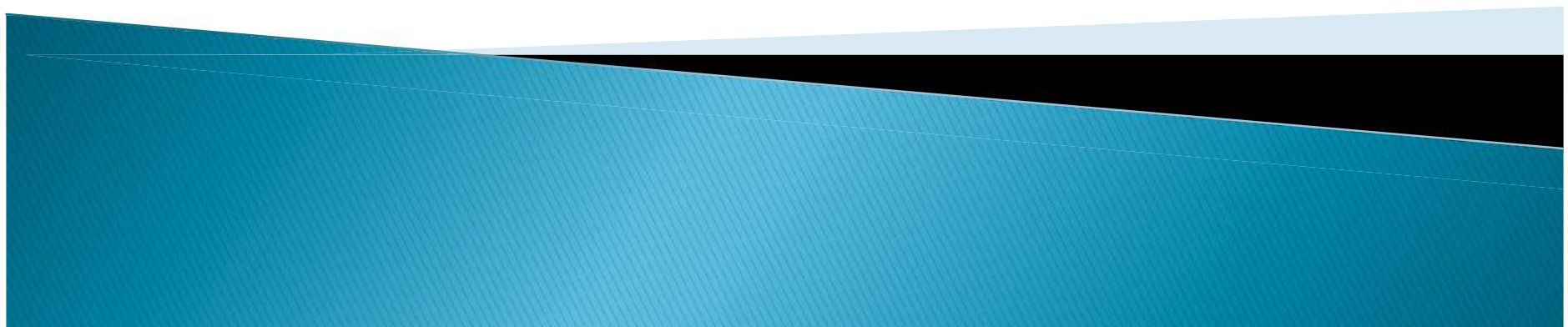
- ▶ and by mirror passivation for 100 years reliability !



# Organic Photonics

## Displays, Lightning and Photovoltaics

Workshop organization



# Program Overview

- ▶ Coffee and introduction
- ▶ Talks from the Industry
- ▶ Break
- ▶ Talks from the research community
- ▶ Workshop and Summary
- ▶ and then...



... in preparation for the main event

*Khalife's Apéro*

**17:30 Uhr**

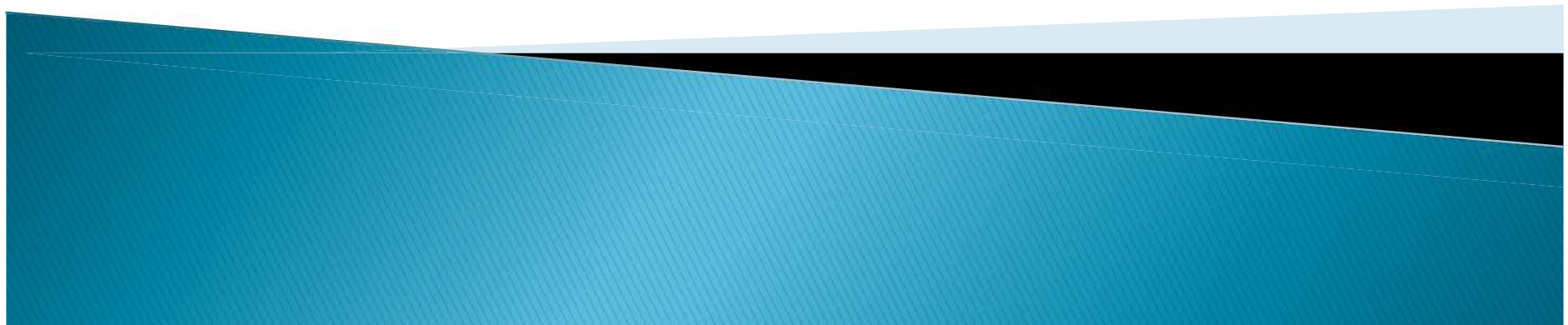
*Orientalische  
Köstlichkeiten*



# Organic Photonics

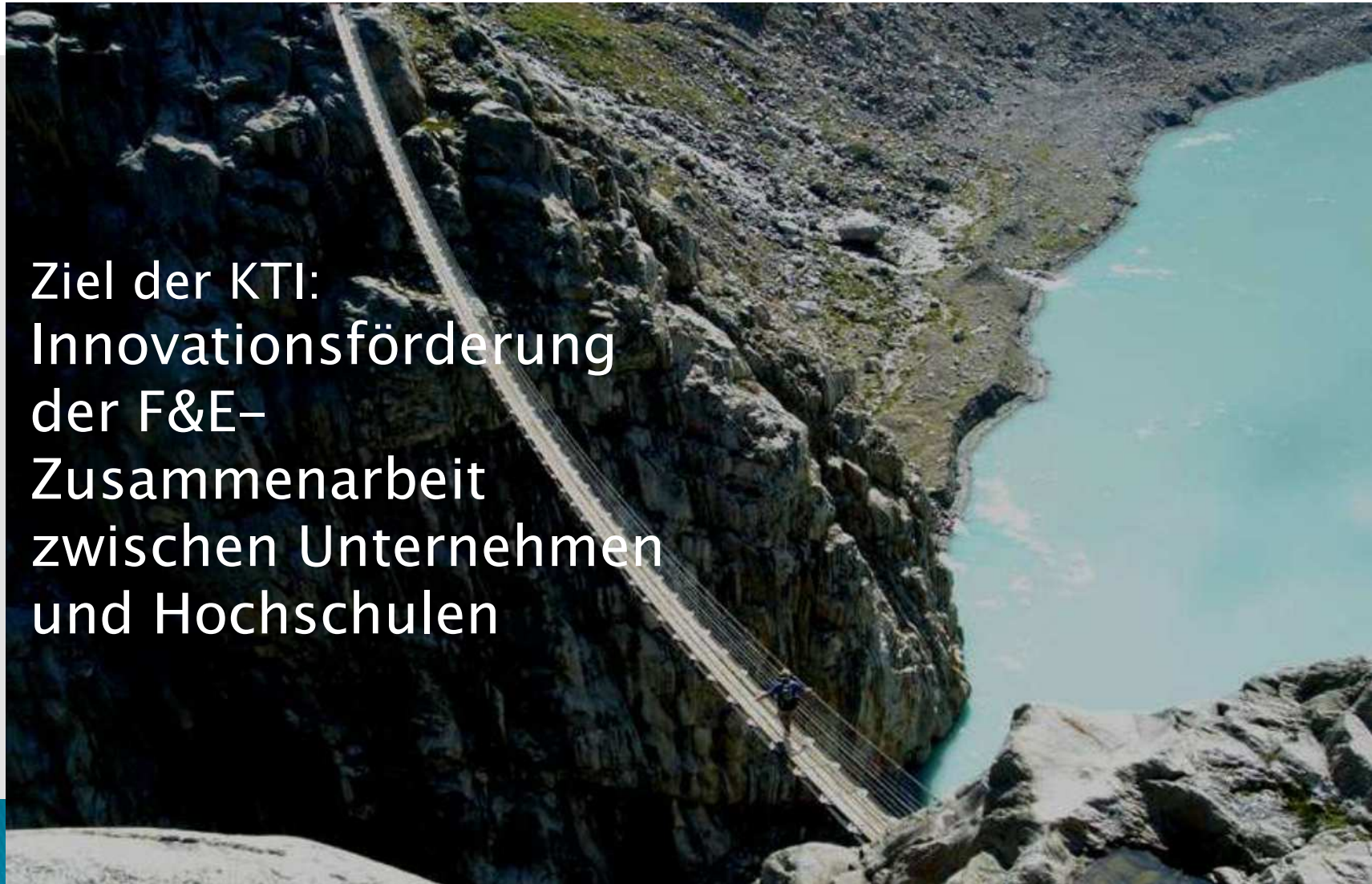
## Displays, Lightning and Photovoltaics

Workshop expectations



# KTI: Brückenschlag zwischen Wirtschaft und Wissenschaft

Ziel der KTI:  
Innovationsförderung  
der F&E-  
Zusammenarbeit  
zwischen Unternehmen  
und Hochschulen



# Letzte Kommentare

- ▶ Bilden Sie Ihr Netzwerk !
- ▶ Forschen und Entwickeln Sie mit den herausragenden Partnern in der Schweiz !
- ▶ Wir würden uns freuen, wenn einige Forschungsprojekte im Rahmen dieses Workshops ihren Anfang nehmen !





Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs FDEA  
Federal Office for Professional Education and Technology OPET  
Innovation Promotion Agency CTI

**SWISSLASER + NET**



SATW Transferkolleg 2008

# Industrial Photonics

## SATW Transferkolleg

- Identifying innovative technologies
- Facilitating academia – industry collaboration
- Developing marketable products

## Call for Proposals

Deadline for Submission: 31 July 2008  
Please send project proposals by e-mail to  
[transferkolleg@satw.ch](mailto:transferkolleg@satw.ch)

### Attractive for Scientists and Commercial Product Developers

«Industrial Photonics» is already the 5th Transferkolleg, following «Industrial Biotechnology» (2007), «Applied Photonics» (2006), «Nano-structured Surfaces» (2005) and «Nano-Biotechnologies» (2004). The Transferkolleg is a collaborative initiative and workshop intended to facilitate the commercial development of innovative ideas.

The workshops' protective framework and confidentiality agreements allow an intensive exchange of knowledge and experience. Workshop topics include intellectual property rights, prospects for securing CTI-funding, and many others. Participants gain easy access to experts in technology transfer and start building networks. They benefit from an open and intellectually stimulating workshop atmosphere. Past Transferkollegs have featured experts such as Thomas Hinderling (Director CSEM), Karl Knop (previously CSEM), Peter Pfluger (evaluator CTI), Louis Schlapbach (Director EMPA), and Hansruedi Zeller (previously evaluator CTI), among others.

### Funded by SATW and CTI

The Swiss Academy of Engineering Sciences (SATW) is a non-commercial, politically independent umbrella organization that brings together institutions, individuals, and specialized companies in Switzerland active in applying and promoting the engineering sciences. Through its Transferkolleg, the SATW aims to encourage contact and collaboration between academic and industrial groups. It thereby furthers many promising developments in their earliest stages.

The Swiss Federal Innovation Promotion Agency (CTI) supports some 400 projects every year, investing a total of nearly 100 million Swiss francs. Its motto «Science to Market» captures its goal of rapidly translating new laboratory discoveries into successful products. The CTI funds a major part of the costs of the Transferkolleg.

### Contacts

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[www.satw.ch](http://www.satw.ch)

## SATW

Schweizerische Akademie der Technischen Wissenschaften  
Académie suisse des sciences techniques  
Accademia svizzera delle scienze tecniche  
Swiss Academy of Engineering Sciences