ACTMOST
Supporting companies with photonics technology services instead of money

Hugo Thienpont

ACT MOST

Acces to Micro-Optics expertise, Services & technologies

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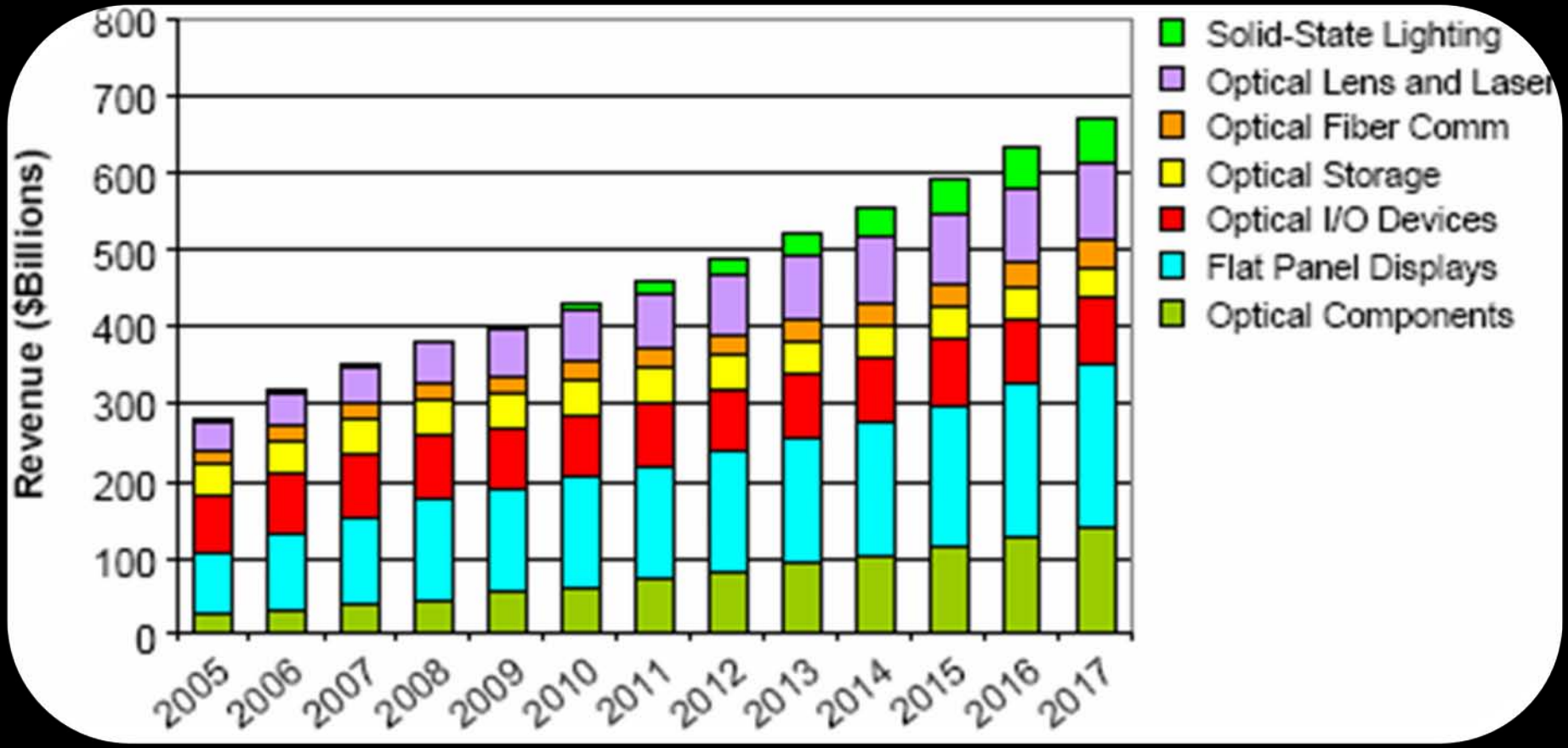
The photonics market worldwide shows a 15% annual growth*

Its growth is mainly innovation driven.



*Source: Optoelectronics Industry Development Association OIDA 2009

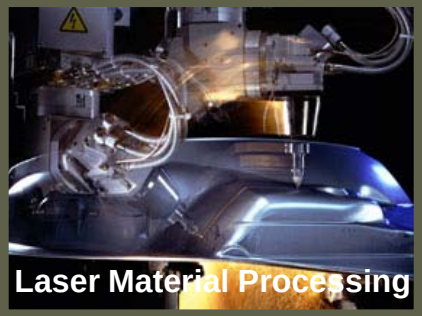
European companies take a considerable share of the photonics world market. 2 out of 3 is a SME.

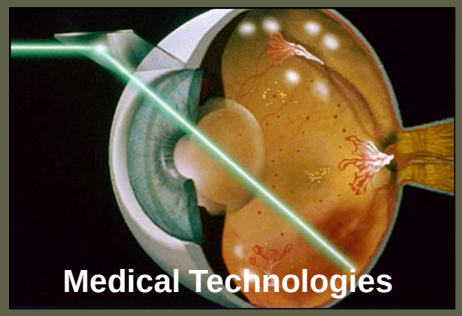
- turnover* > 55 billion €
  (20% of world market € 270 billion)
- entreprises* > 5000
  (2/3 SME's)
- employment* > 300.000
- key-players in Europe

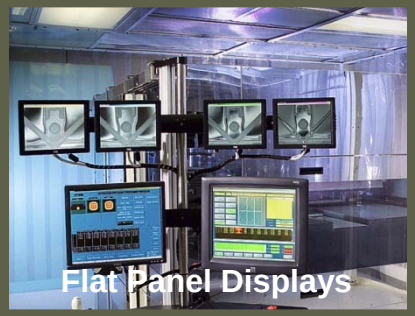
ABB, Alcatel, Agilent, AGFA, Barco, Carl Zeiss, HP, Jenoptik, Leica, Osram,Philips, Umicore, Rofin Sinar, Trumph, TYCO, Melexis, ICOS, ...

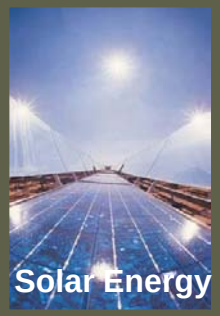
* Source: Photonics 21 Strategic Research Agenda 2010

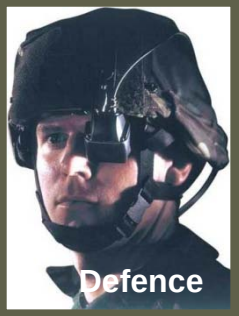
The EC identified 10 key-application domains to support Europe in its innovation endeavours with photonics as key-enabling technology *

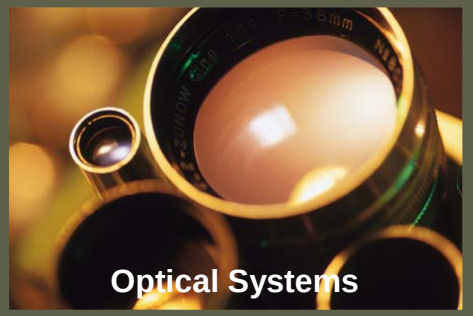










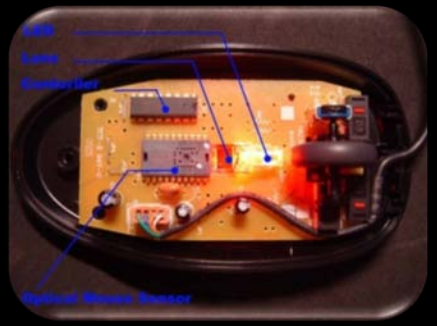


* Source: Photonics 21 Strategic Research Agenda 2010

Two types of companies need photonics expertise and technologies to innovate their products and to enhance their competitiveness

Companies whose core business is the production of photonic components and photonic systems

Companies who can enhance their products with the enabling power of optics or photonics



If European companies want to keep their market share ...
continued product innovation with photonics will be crucial ...

But often SME's and large-scale companies encounter show-stoppers and road-blocks...

Some examples of photonics innovation show-stoppers for European companies

in-house experts
and photonics expertise
are missing

supporting an
in-house R&D team
is too expensive

identifying external experts
is often
a shot in the dark

dedicated task forces
for photonic solutions
are almost nonexistent

in-house cutting-edge
photonics technology
is missing

investment risk
is too high or
financially irresponsible

multiple-stop technology
shopping fails
partial solutions
are often incompatible

single-stop shop
technology supply chains
are almost nonexistent

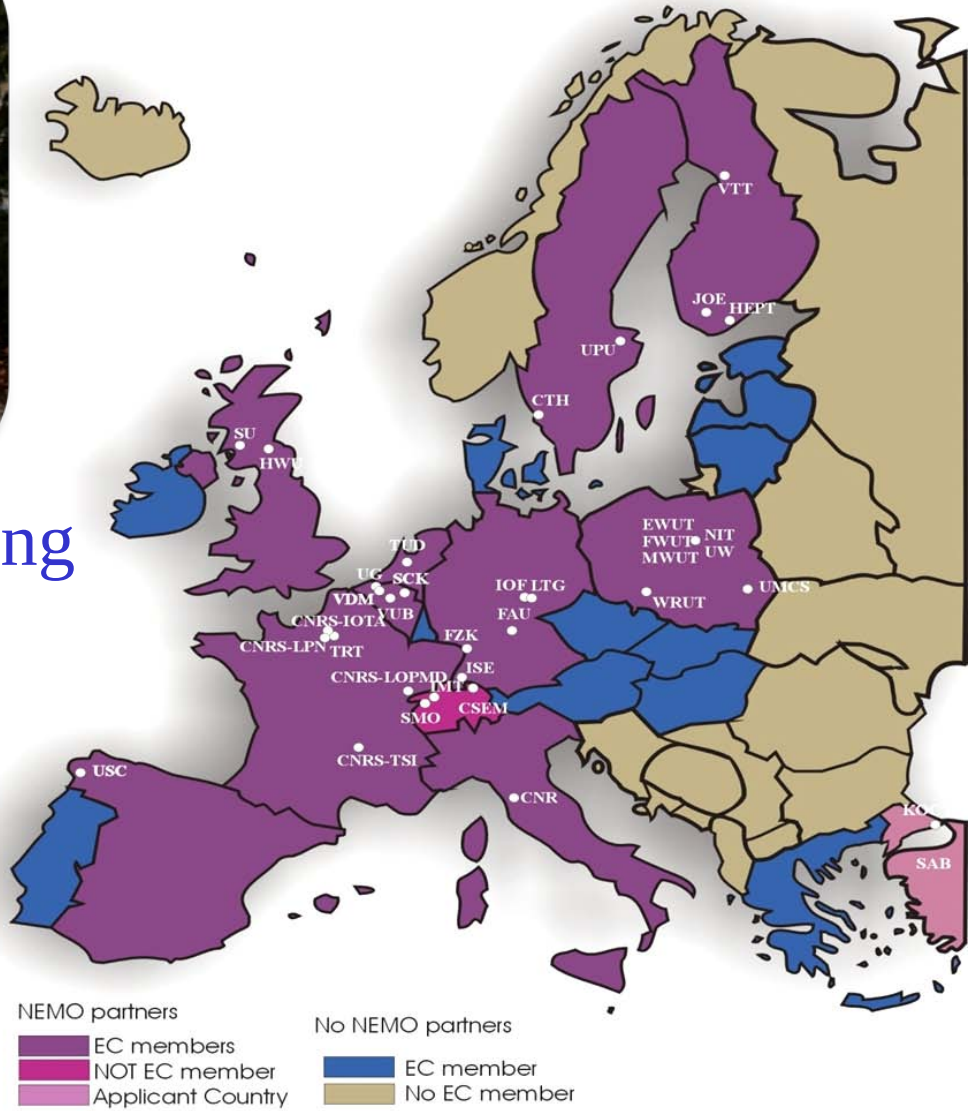
In 2004 we started NEMO
the European Network of Excellence on Micro-Optics
with the goal to tackle these innovation roadblocks

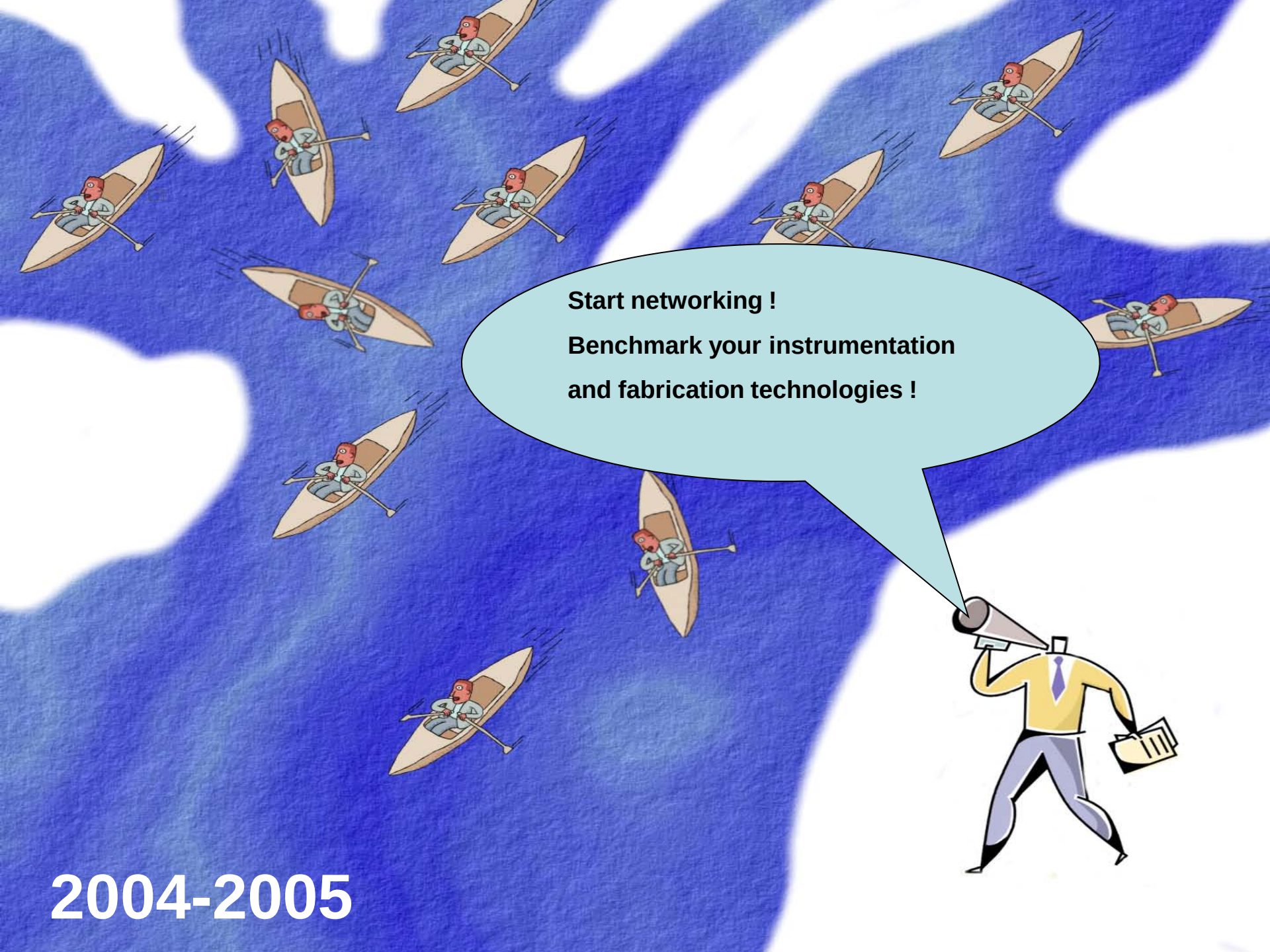
We aimed at structuring and integrating the complete European research scene in micro-optics to support industry

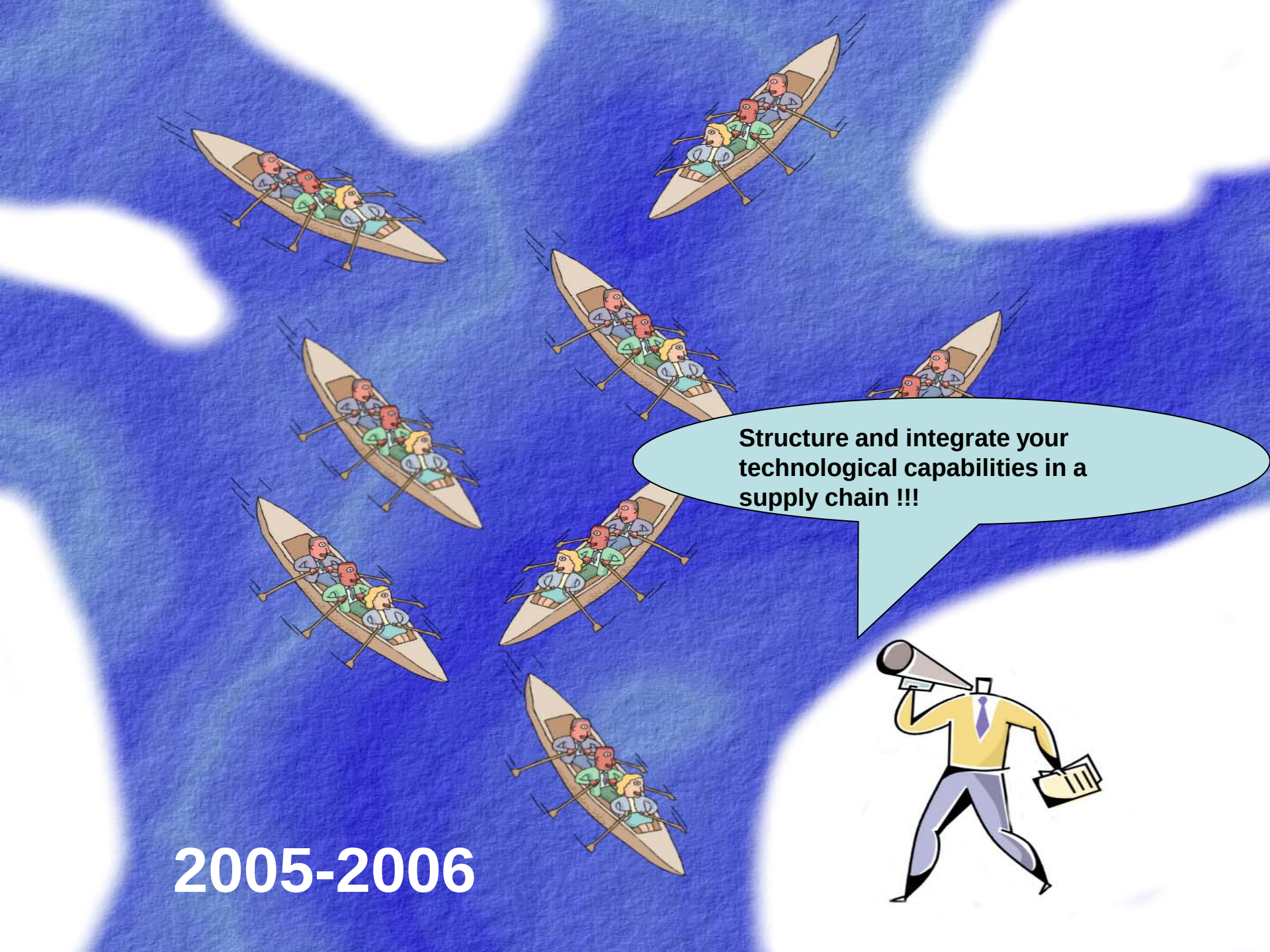
Network of Excellence on Micro-Optics

6,4 M Euro EU Network Funding

12 countries
30 research labs
333 researchers



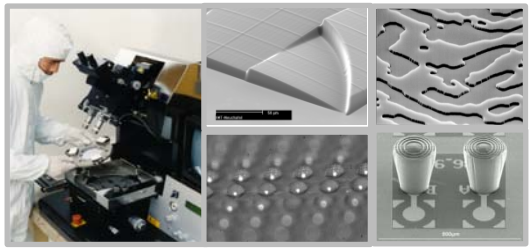

Start networking !
Benchmark your instrumentation
and fabrication technologies !
2004-2005


Structure and integrate your technological capabilities in a supply chain !!!
2005-2006

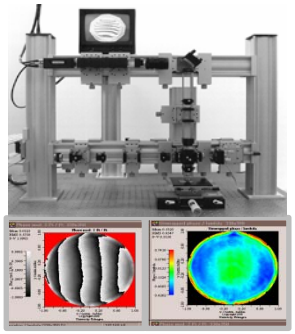

Test your supply chain and expertise in pilot industrial projects
2007-2008

We have turned NEMO in a one-stop-shop solutions provider for micro-optics

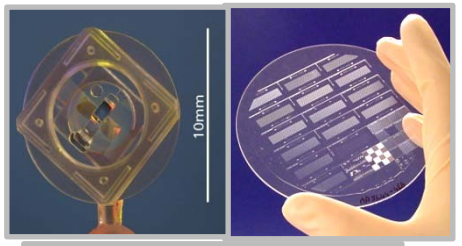
NEMO had demonstrated that with its micro-photonics supply chain it could tackle scientific, technological, and also industrial challenges



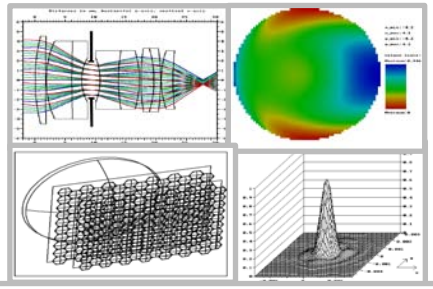
Mastering and Prototyping Technologies



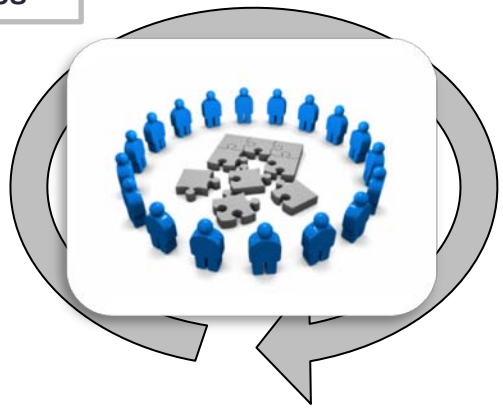
Measurement and Instrumentation

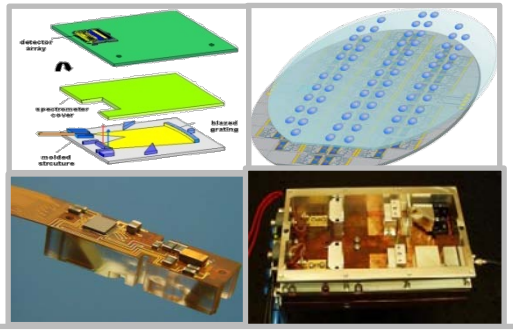


Low-Cost Replication

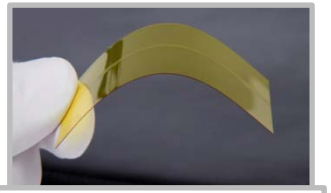


Modeling and Design

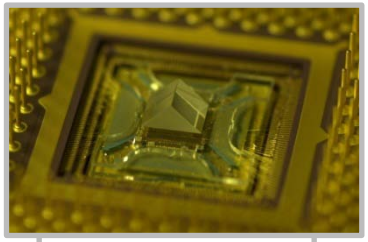




Assembly, Integration and Packaging



Advanced Materials



Demonstrators

We have expanded NEMO into dedicated task forces and a passion for jointly tackling industrial challenges stayed on board

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ACTMOST teams up technology partners most of which have proven their skills in joint collaborative projects

1	Vrije Universiteit Brussel	VUB	Belgium
2	Karlsruhe Institute of Technology	KIT	Germany
3	Politechnika Warszawska	WUT	Poland
4	Centre National de la Recherche Scientifique	CNRS	France
5	Technical Research Centre of Finland	VTT	Finland
6	Max Planck gesellschaft zur foerderung der wissenschaften	MPL	Germany
7	University of Eastern Finland	UEF	Finland
8	Interuniversitair Micro-Electronica Centrum	IMEC	Belgium
9	Stiftelsen SINTEF	SINTEF	Norway
10	Institut für Photonische Technologien	IPHT	Germany
11	Université de Franche Comte	UFC	France
12	Wroclaw University of Technology	WRUT	Poland
13	Maria Curie-Sklodowska University	UMCS	Poland
14	Institute of Electronic Materials Technology	ITME	Poland

ACTMOST Partners serve in different technology centers

ACTMOST partner	Modelling and Design Unit	Measurements and Characterization Unit	Prototyping, Mastering and Replication Unit	Packaging and Integration Unit	Reliability Unit
VUB	X	X	X		X
KIT		X	X	X	
WUT	X	X			X
CNRS	X		X		X
VTT			X	X	
UEF	X		X		
IMEC			X	X	X
SINTEF	X	X	X		
MPL	X	X	X		
IPHT		X	X		X
UFC		X	X		
WRUT	X	X			
UMCS			X		
ITME	X	X	X		

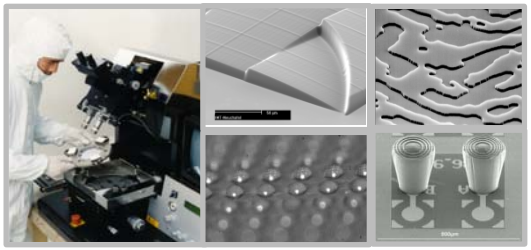
Equipment is benchmarked and second sources are identified

Each technology centre is coordinated by a top expert in the field and a deputy. Together they are managing the complete technology supply-chain.

Name of the S&T Unit	Unit Leader	Deputy
Unit for Modelling and Design	CNRS: P.Chavel	VUB : Y. Meuret
Unit for Measurement and Characterization	WUT: M.Kujawinska	VUB: H. Ottevaere
Unit for Prototyping, Mastering and Replication	KIT : J.Mohr	VUB: C. Debaes
Unit for Packaging and Integration	VTT: P. Karioja	VTT: M. Karppinen
Unit for Reliability	VUB: F. Berghmans	CNRS: S. Eve
	VUB : H. Thienpont	

Executive board

Recently ACTMOST opened its micro-photonics technology supply-chain to European companies for product innovation



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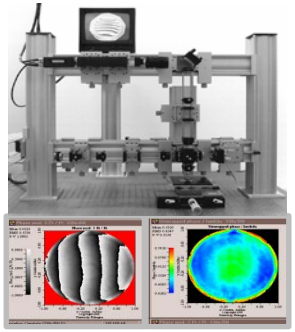

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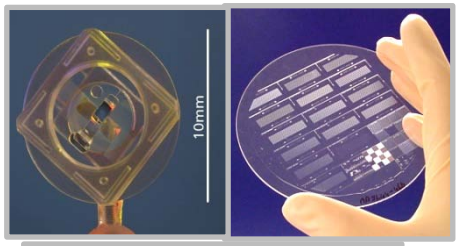

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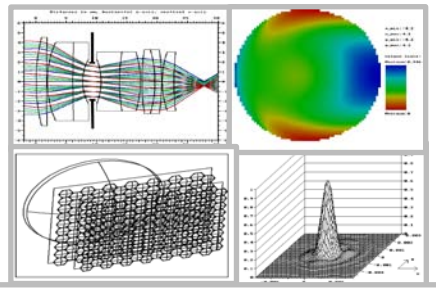
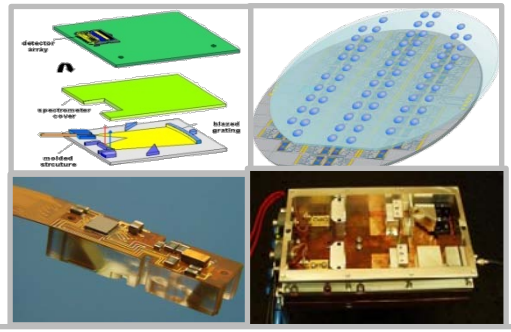
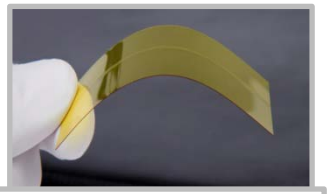


Modeling and Design

Technology Supply Chain



Assembly, Integration and Packaging



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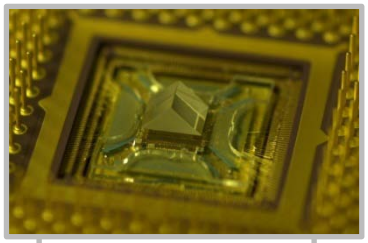
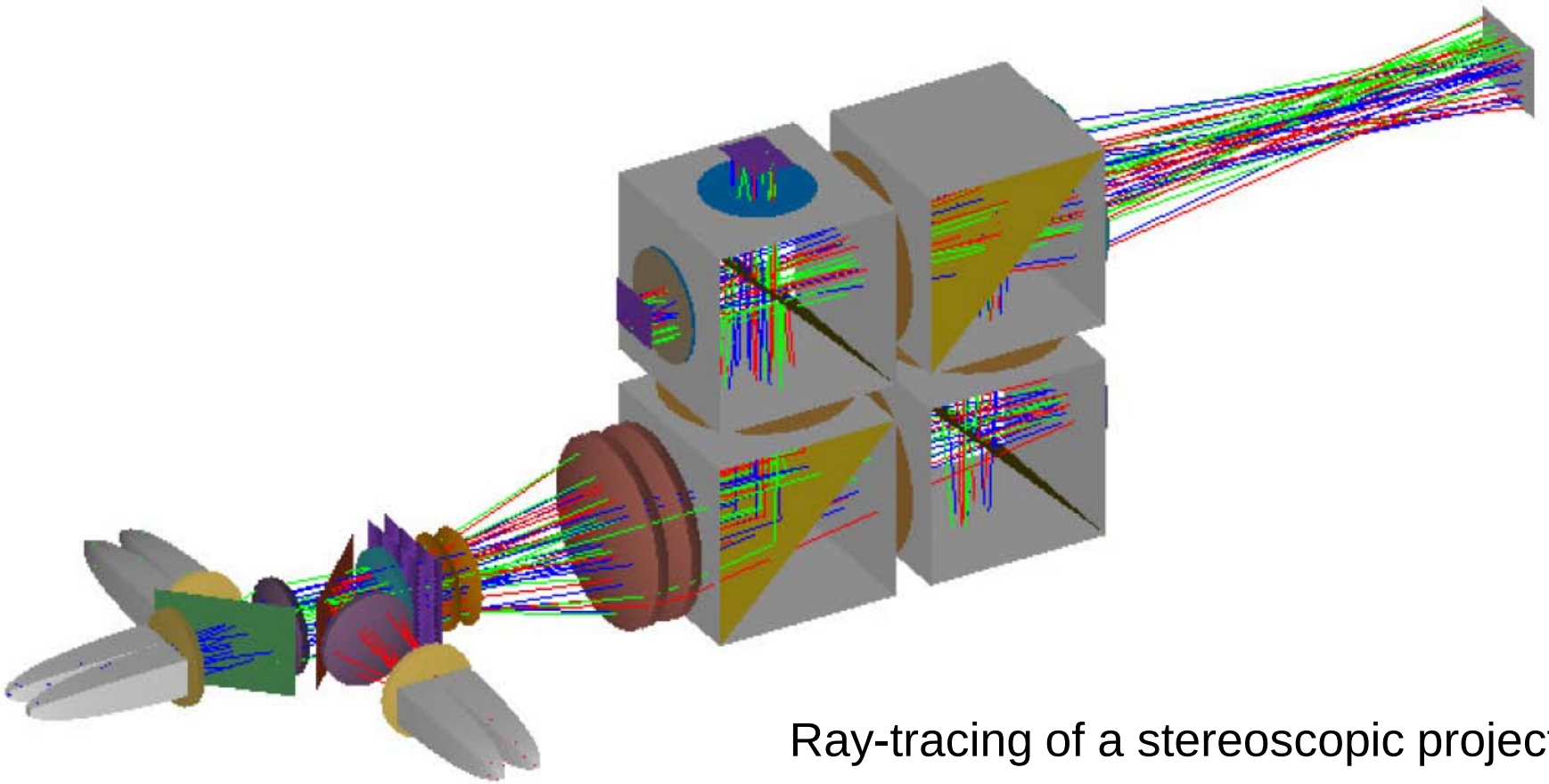


Demonstrators

ACT MOST

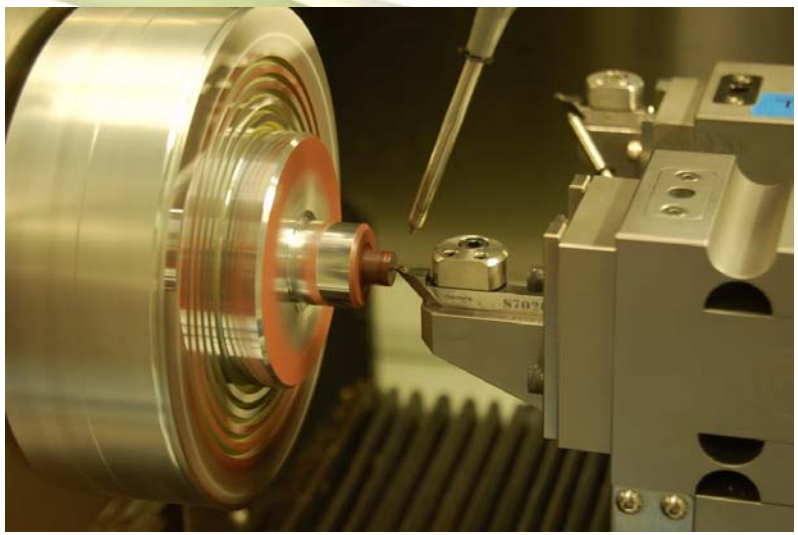
With our infrastructure we can model and develop practical optical and photonic designs

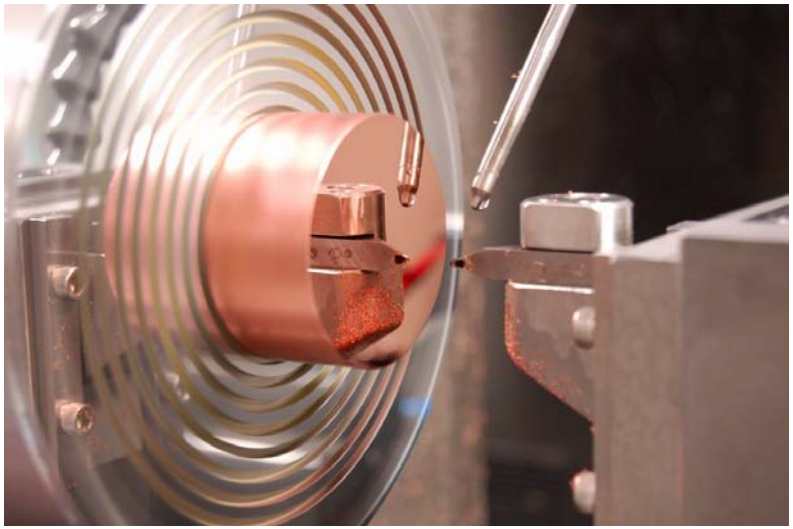


Ray-tracing of a stereoscopic projector

ACT MOST

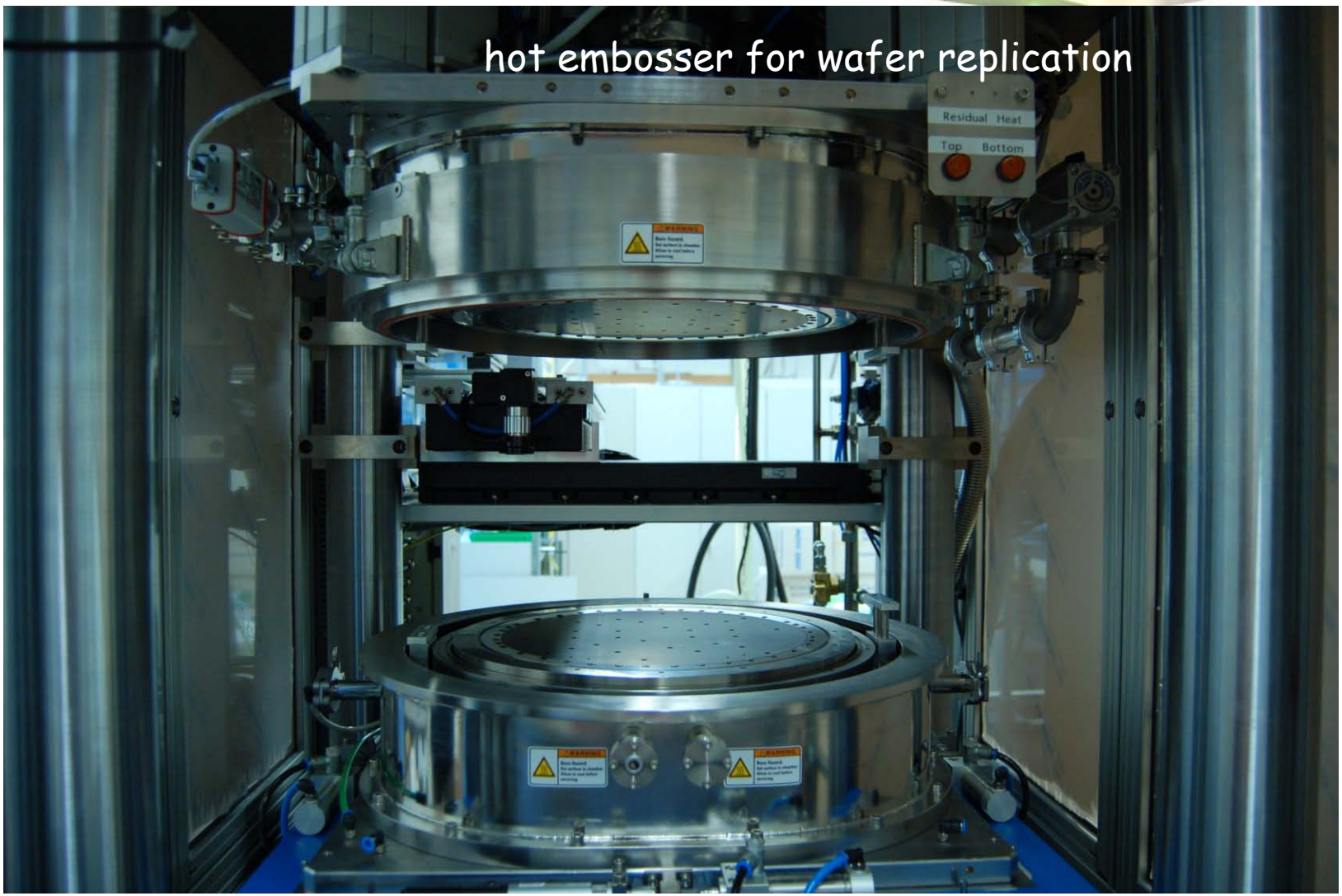
We prototype micro-optic and micro-photonic components with technologies that are compatible with industrial mass-manufacturing



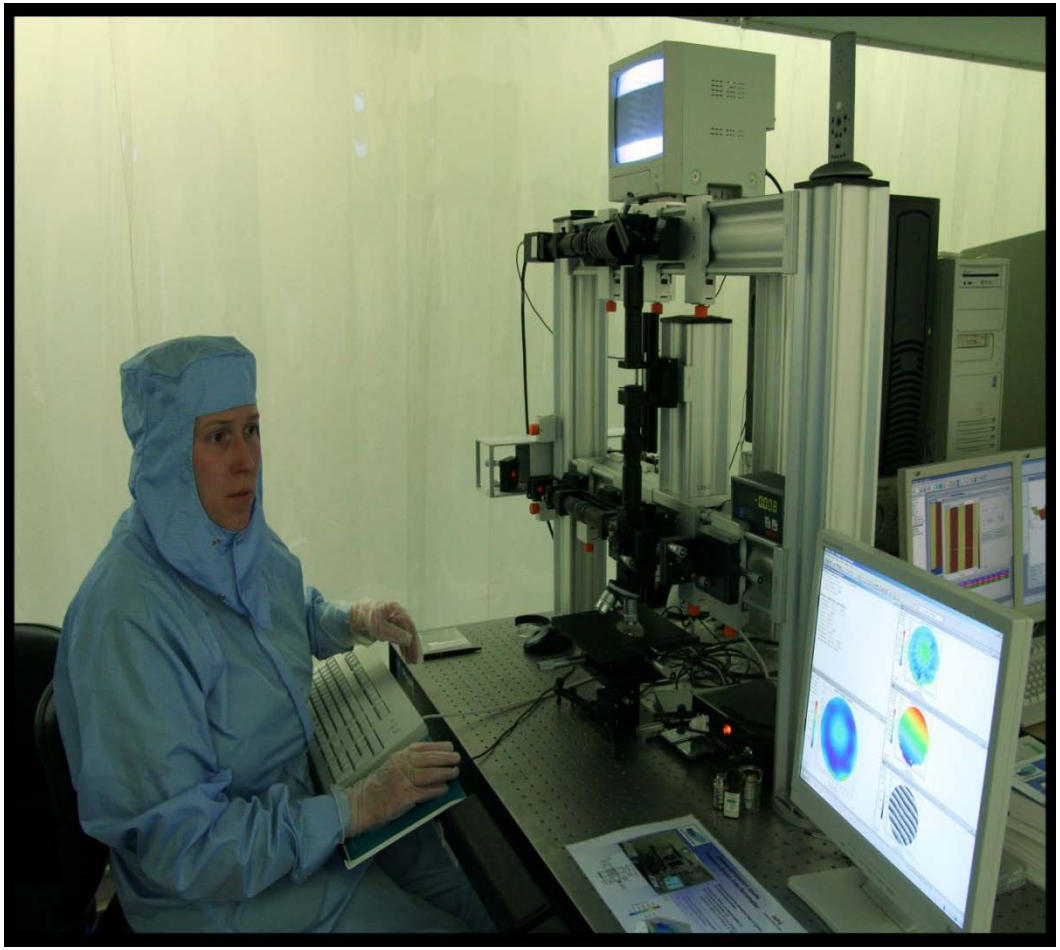


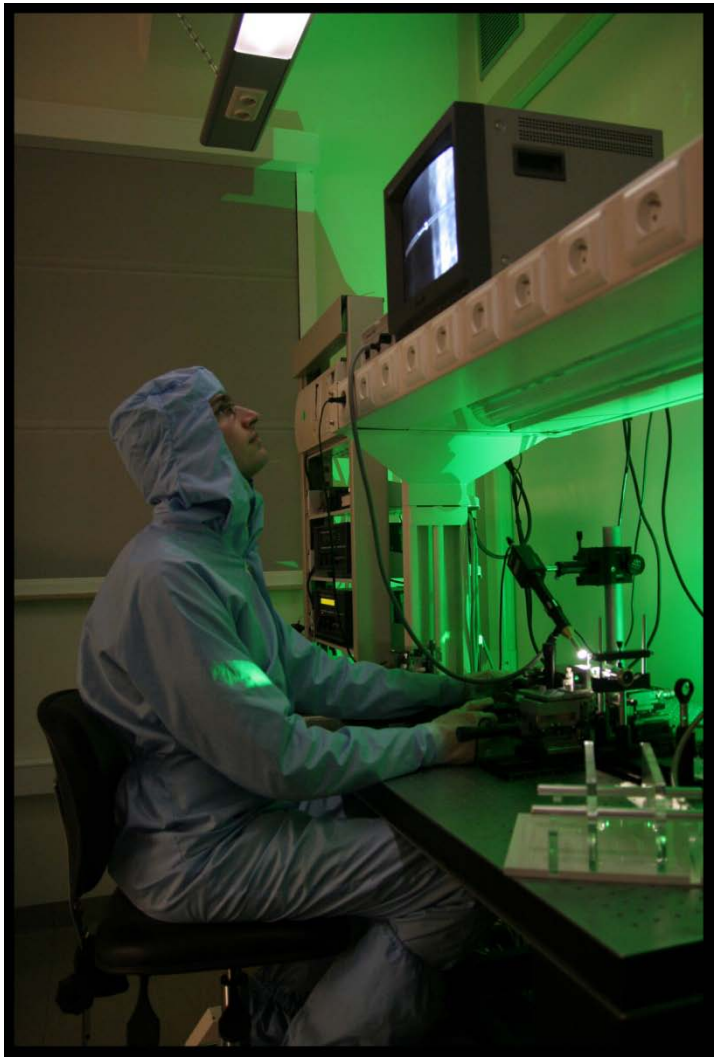
ACT MOST

… we also test mass-manufacturability…



…and we package and characterize components, build proof-of-concept demonstrators and validate prototypes





ACT MOST

With this unique technology supply chain ACTMOST offers European companies innovation support in the form of "user projects" and "trainings"

INNOVATION SUPPORT for INDUSTRY

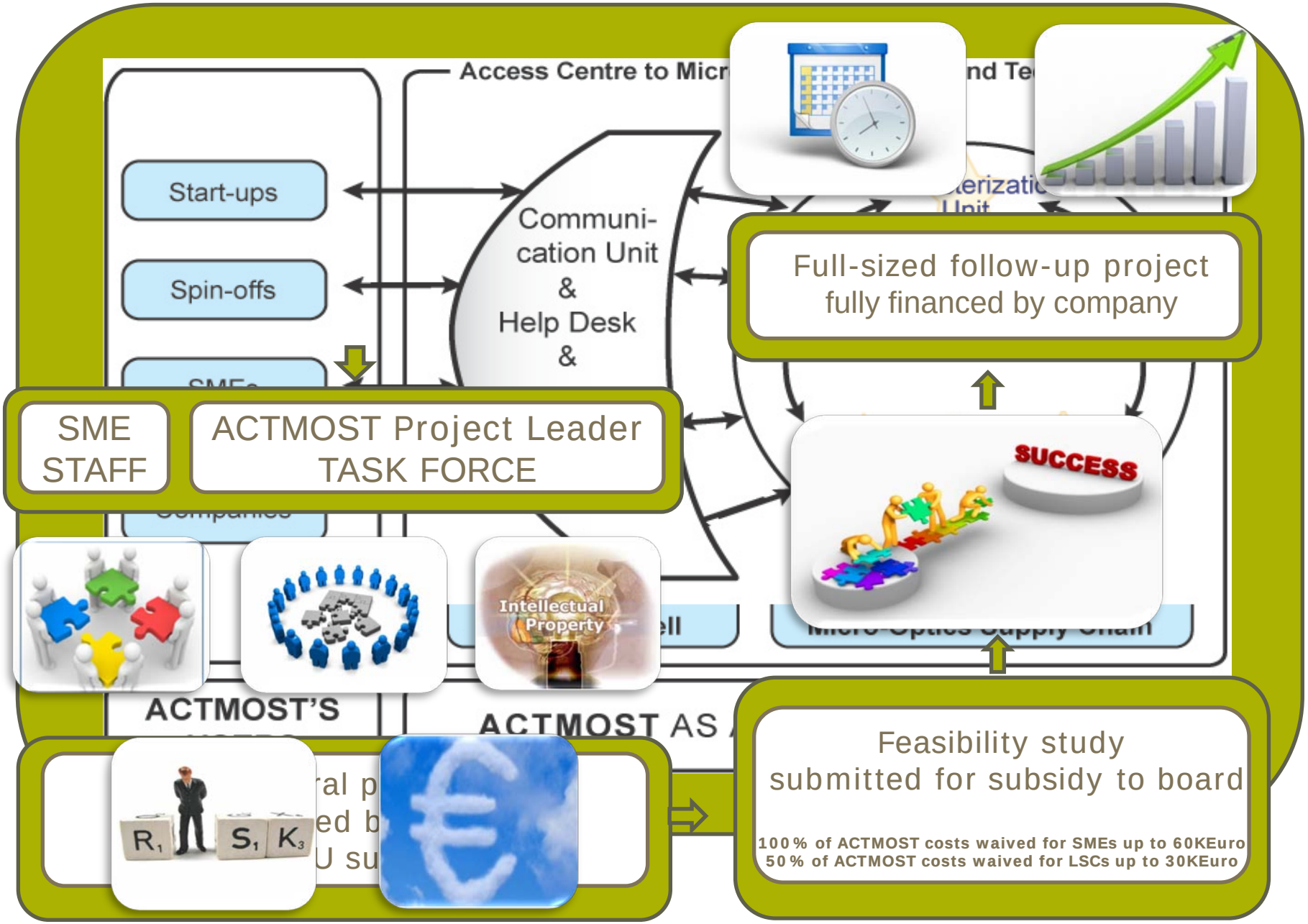
USER PROJECTS

- exploratory studies
- feasibility studies
- proof-of-concept demonstrators

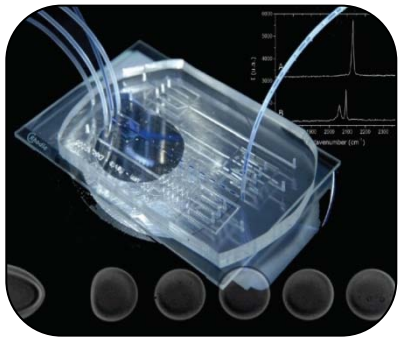
TRAININGS

- personalized
- hands-on
- dedicated

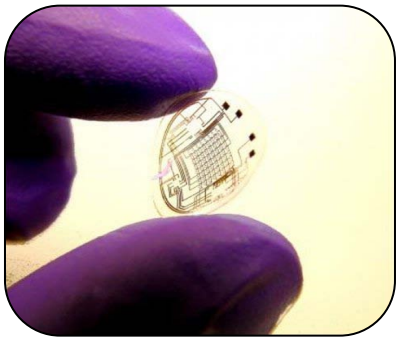
ACT MOST


Start-ups
Spin-offs
Communi-
cation Unit
&
Help Desk
&
Full-sized follow-up project
fully financed by company
SME
STAFF
ACTMOST Project Leader
TASK FORCE
SUCCESS
Intellectual
Property
ACTMOST'S
ACTMOST AS
Feasibility study
submitted for subsidy to board
100 % of ACTMOST costs waived for SMEs up to 60KEuro
50 % of ACTMOST costs waived for LSCs up to 30KEuro

With this "from lab to fab" concept ACTMOST wants to support companies in different key-areas where Europe targets innovation.



Biophotonic
labs-on-a-chip
Health and Safety



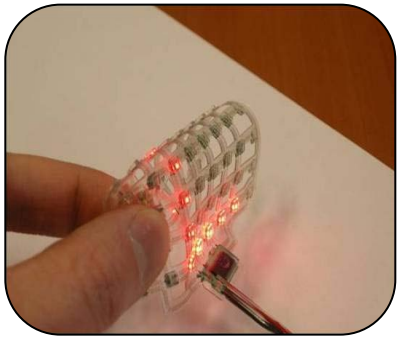
Minimally invasive
biomedical micro-systems

Energy efficient lighting

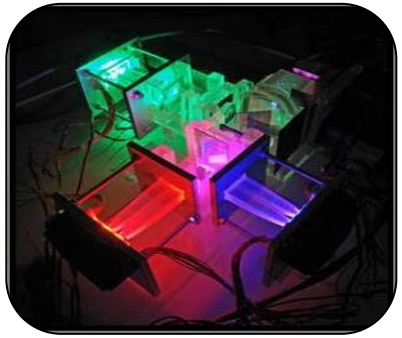
Optical sensor embedded
smart prosthetics
Improving the quality of Life

Solar energy
Fighting global warming

Wearable micro-photonics
Ageing society



Micro-photonic interconnects
Ultrafast datacom



Display and projection
Entertainement

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INNOVATION SUPPORT for INDUSTRY

USER PROJECTS

- exploratory studies
- feasibility studies
- proof-of-concept demonstrators

TRAININGS

- personalized
- hands-on
- dedicated

ACT MOST

ACTMOST offers personalized and dedicated technology trainings to industry staff so that they master the latest top-level equipment

ACT MOST

USER PROJECTS (feasibility studies)

450 000€ EU funding

	Number of Units	Max cost waived
SME's	Multiple	up to 60 k€
LS companies	Multiple	½ of costs up to 30k€

	1 PM for User Projects
Personnel	7 546€
Travel	800€
Consumables	1 000€
Indirect cost	654 €
Total	10 000€

HANDS ON TRAININGS

135.000€

Duration of the Training	Max cost waived	Total trainings waived
1 week	4 500€ (1/2PM)	21
2 weeks	9 000€ (1 PM)	12

	1 PM for training
Personnel	7 411 €
Consumables	1 000€
Indirect cost	589 €
Total	9000€

Critical eligibility and evaluation criteria to user projects or trainings

European identity
project objectives
in line with EC

pre-competitive
character of the request

demonstrable capacity
of ACTMOST
to accomplish the request

level of involvement
of the company

potential impact on
the company's business

quality of the IPR

level of requested subsidy
commensurate with
the support

commitment
in case of success
for a follow-up project

ACTMOST has everything in store to remove innovation roadblocks and support companies that want to invoke micro-photonics for product innovation.

centralized contact point
and guidance

low
administration

the best
European experts
in dedicated task forces

Complete
benchmarked
technology supply chains

subsidy opportunity
no investment risk

ACTMOST is an access centre conceived as a single-stop-shop solutions provider and an innovation facilitator, backed with a novel subsidy model

prioritize
product innovation
with photonics

open or maintain
the windows of opportunity
of the new markets

decrease
the time-to-market

grow business
in Europe

create jobs

ACTMOST partners invite you to the free ACTMOST lunch from 12h45 – 13h45 in Room A32

EUMINA*fab*

Integrating European research infrastructures for micro-nano fabrication of functional structures and devices out of a knowledge-based multimaterials' repertoire

ACT MOST

Access to Micro-Optics Expertise, Services & Technologies

INVITATION

Please discuss your research and innovation challenges with experts of **ACTMOST** and **EUMINA*fab*** during a **FREE LUNCH** on 25 May 2011 from 12H45-13H45 in Room A32 at Laser Photonics Munich (see map below).

Please bring this invitation card with you.

For more information

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ACT MOST

Acces to
Micro-Optics
expertise,
Services &
technologies

Summary and Conclusion

• we believe ACTMOST can work as a new model to support companies that want to innovate with micro-photonic technologies

the key-ingredients of this new model are

• centralized excellent information and guidance
• quick and efficient links to a professional distributed access centre staffed with top-experts
• access to a complete food chain with pre-production scale manufacturing
• possibilities to subsidize feasibility studies
• possibilities to provide individual trainings on top-level equipment in our facilities
• low level of administrative overhead and fast response
• a focus on results, competitiveness of the company and time-to-market

• we think that this subsidy model is well adapted to the needs of companies, in particular SME's, where innovation is crucial
• in addition it is a real instrument to enhance the collaboration between universities and companies

ACT MOST

Eligibility criteria for user projects (must be fulfilled if you want to apply for ACTMOST subsidies)

- the **European identity** of the potential user
- the **pre-competitive character** of the request
- the suitability of the request as **pilot project** for ACTMOST
- the type of support activity (dedicated training, user project involving one or more units of the food-chain, etc)
- the demonstrable **capacity of ACTMOST** to accomplish the request
- the appropriateness of the proposed coordinator, partners and consortium to take on the request and bring it to a successful ending
- the requested **financial support** and whether it is commensurate with the request
- the conformity of the request with the **general objectives of the EC Photonics Unit**

Evaluation criteria for user projects (will determine whether and to what level your project will be granted)

- the **type** and **size** of the **company** (start-up, SME, large-scale company, etc.)
- the **added value** for ACTMOST as showcase for the subsidy model (user project/training)
- the added value of the request for the user in the format of a **business plan (**including a market analysis clearly highlighting the future market potential and the expected positive impacts on the company), in particular:
    - the **market description** and its **potential evolution**
    - **competitors** and **competing products**
    - the **unique selling point** of the product to be developed (including IPR)
    - the **expected return on investment** (ROI) and financial perspectives
- the likelihood and **prospect for a follow up project** -fully financed by the user- after a successful first user project and the commitment of the user to such follow up project in the proposal in order to reach ACTMOST's sustainability
- the (additional**) financial contribution** of the potential user (commitment)
- the level of **involvement** and effort (technology, man power, material, etc) brought in by the potential user as a measure for its commitment to the user project
- the quality, value and merit of the **IPR** conditions for the potential user and ACTMOST
- did the potential user receive **support** on a **previous** occasion (priority goes to users that have not received support before)
- the level of potential support to young and dynamic entrepreneurs in Europe

The time line of ACTMOST project deadlines

	2010	2011	2012	2013
Jan		M5	M17 : First review meeting	M29 Consortium meeting
February		M6	M18	M30
March		M7 Project deadline	M19 Project deadline	
April		M8	M20	
May		M9	M21	M33 : Final review meeting
June		M10 : Second Industry access workshop and consortium meeting Project deadline	M22 : Fourth Industry access workshop and consortium meeting Project deadline	
July		M11	M23	
August		M12	M24	
September	M1 : Kick-off	M13 Project deadline	M25 Project deadline	
October	M2	M14	M26	
November	M3: Project Leader Training	M15 : Third Industry access workshop and consortium meeting	M27	
December	M4 : First Industry access workshop First project deadline	M16 Project deadline	M28 Project deadline	