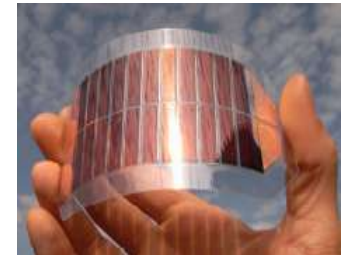
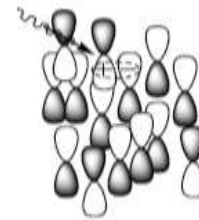


Plastic Optoelectronics in the Upper Rhine Area OPERA Cluster Formation



Dr Carsten Winnewisser
Senior Manager Business Development
CSEM
Neuchâtel, Switzerland
carsten.winnewisser@csem.ch



Plastic Optoelectronics Workshop, Basel, 25.06.10

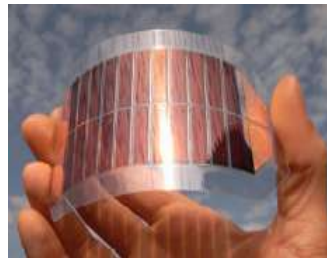
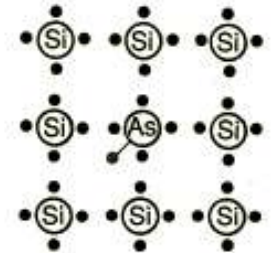
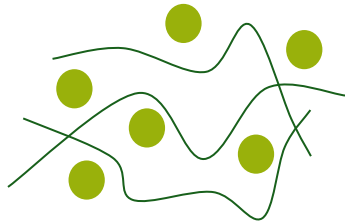
Goals

- “Crosslink” the stakeholders in the domain of “Plastic Optoelectronics” / “Organic and Large Area Electronics (OLAE)” in the border triangle Upper Rhine Area
- Trigger cross-border cooperation along the value chain / foster the potential of this Metropolitan Region
- Trigger the formation of a “Plastic Optoelectronics” Cluster in the Upper Rhine Area

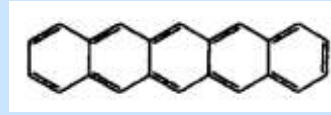
“Definition”

Plastic Optoelectronics / Organic Electronics Printed Electronics / Polytronics / OLAE

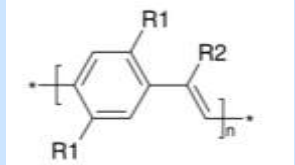
- is a branch of electronics that deals with conductive polymers, plastics, or small molecules. It is called '**organic**' electronics because the polymers and small molecules are carbon-based in contrast to classical silicon-based electronics.



Plastic Optoelectronics

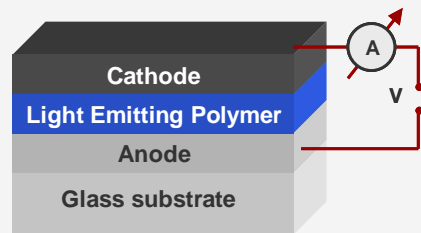
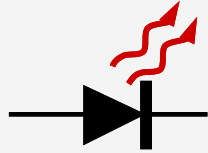


Small Molecules

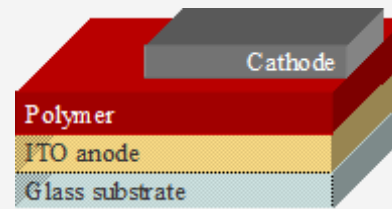
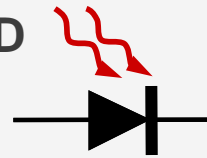


Polymers

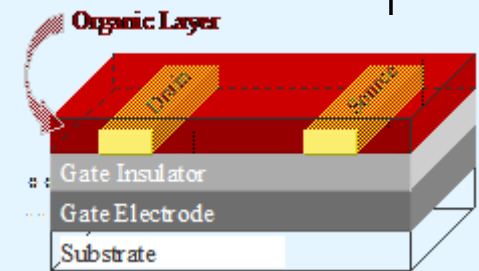
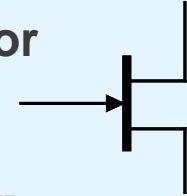
LED



PV-cell / PD



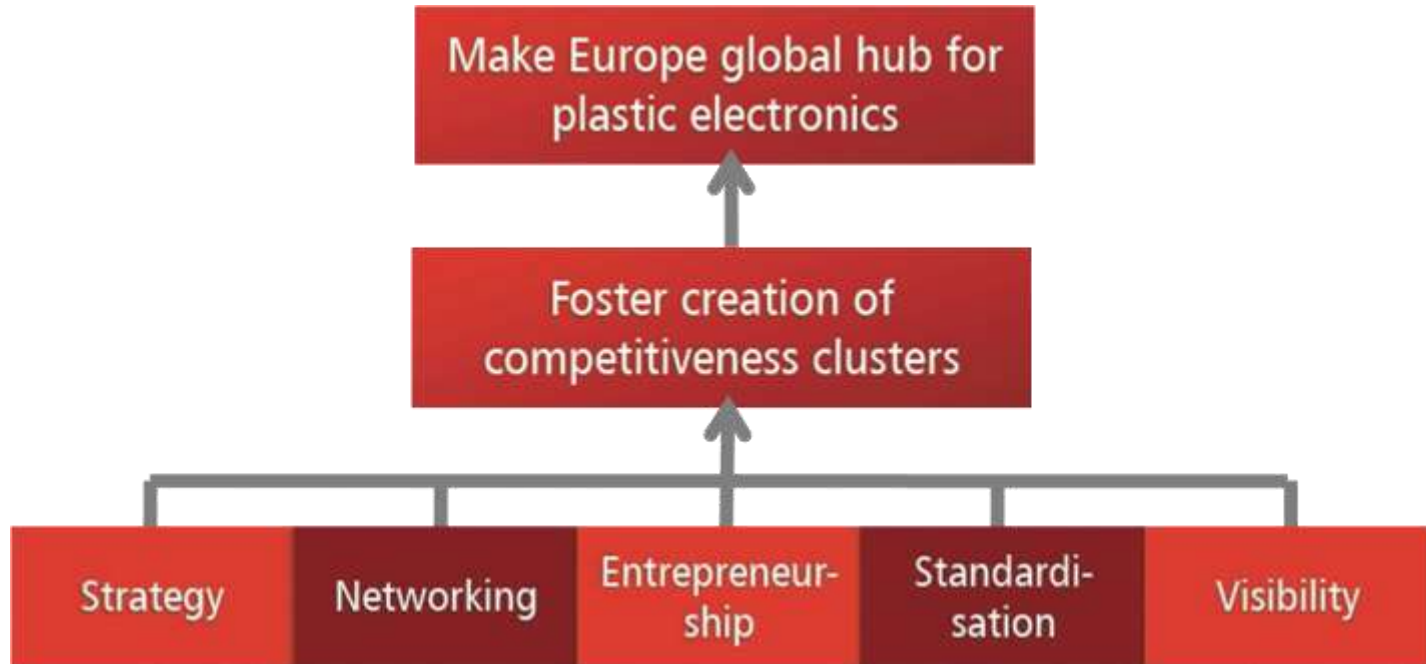
Transistor



Motivation for an European Strategy

- General lack of coherent long-term strategy for OLAE in Europe
- Fragmentation, duplication and discontinuity of research efforts
- Limited coordination of European and national funding activities
- Lack of investments
- Shortcomings in the technology transfer process
- Entrepreneurial training

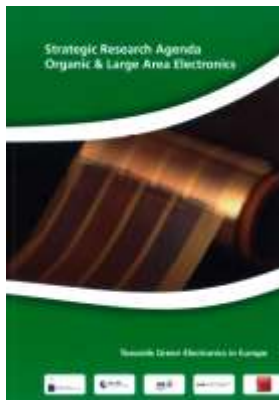
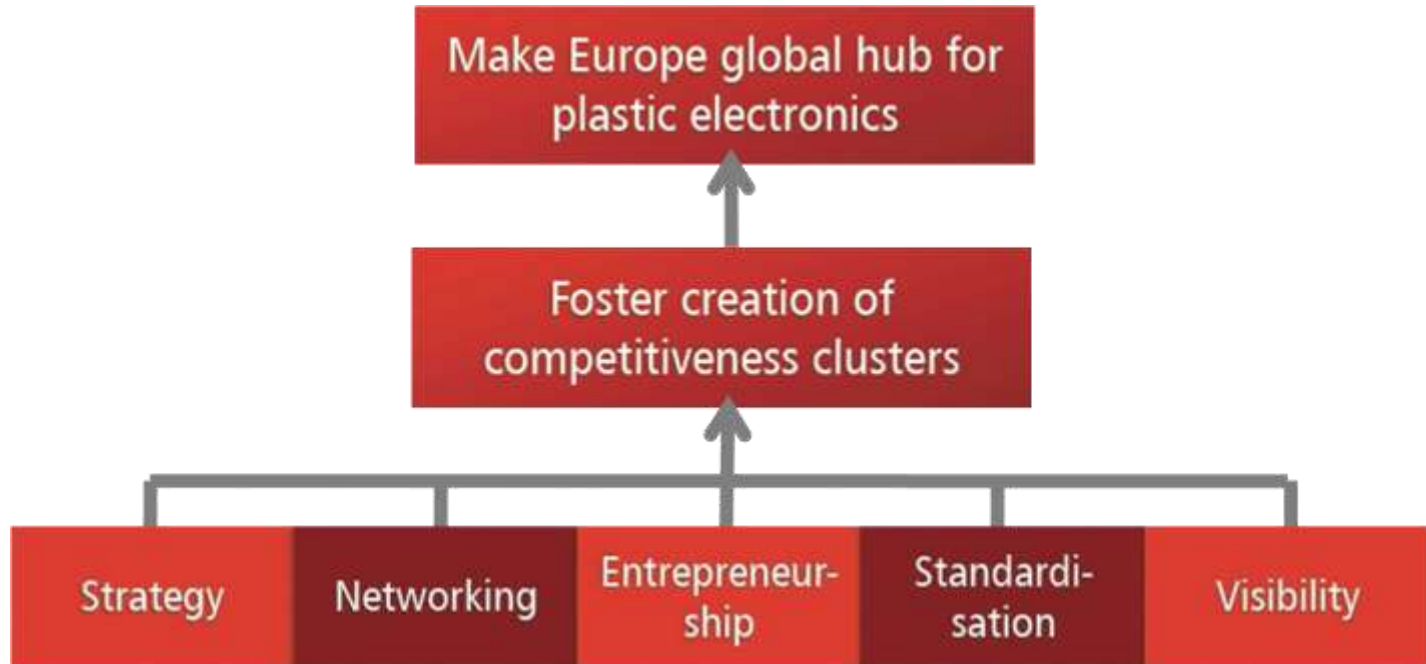
Objectives of OPERA



Project Partners



Objectives of OPERA



supported by

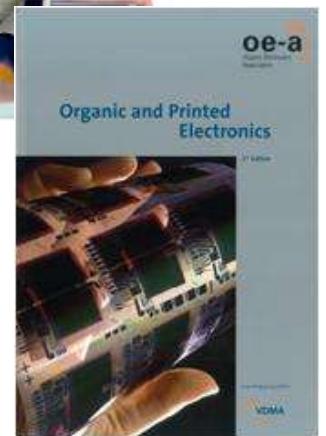


oe-a Roadmaps for Organic & Printed Electronics

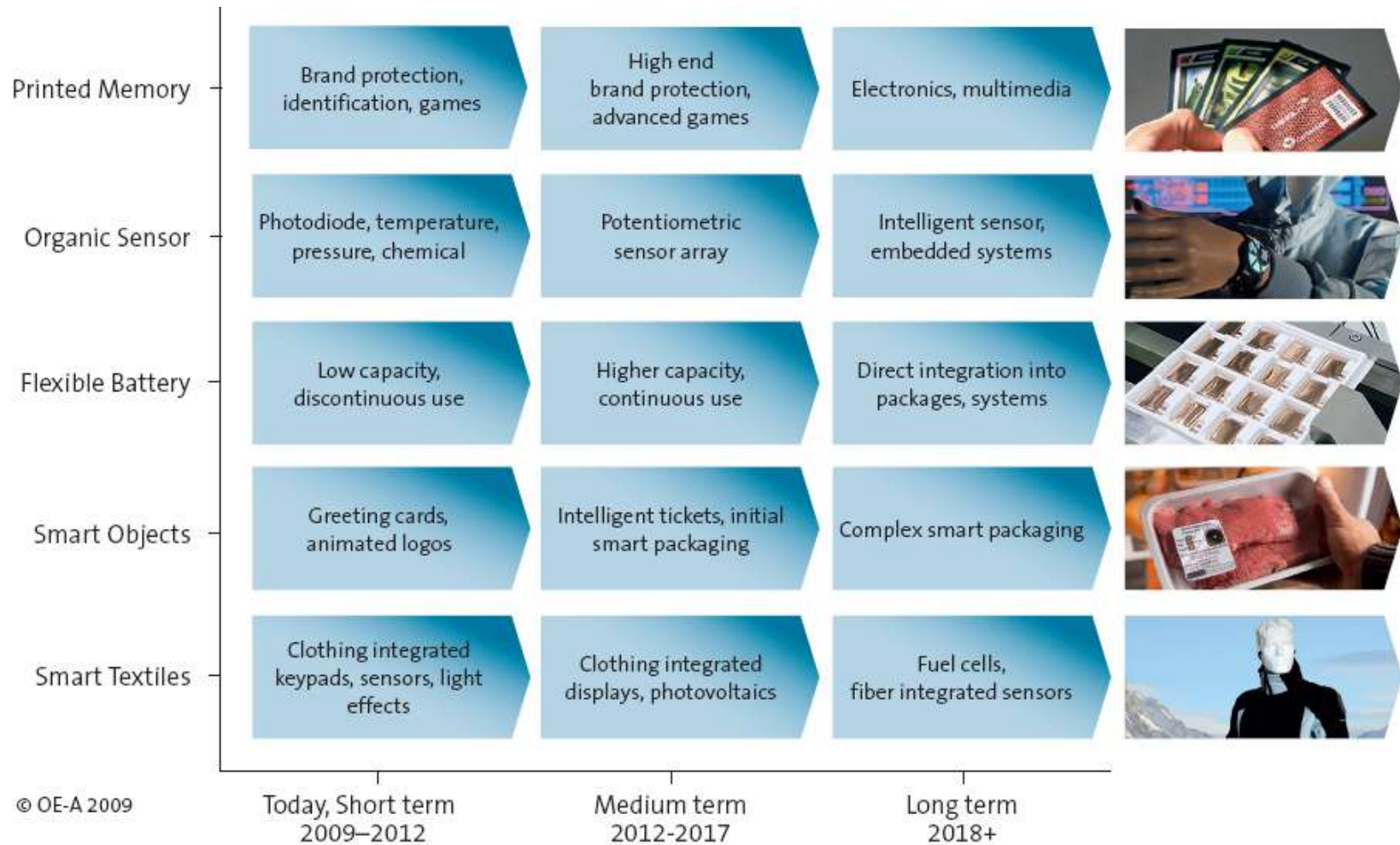


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www.vdma.org/oe-a

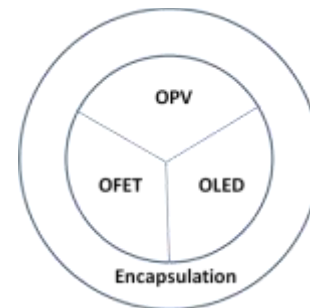
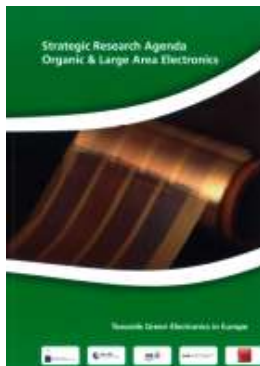
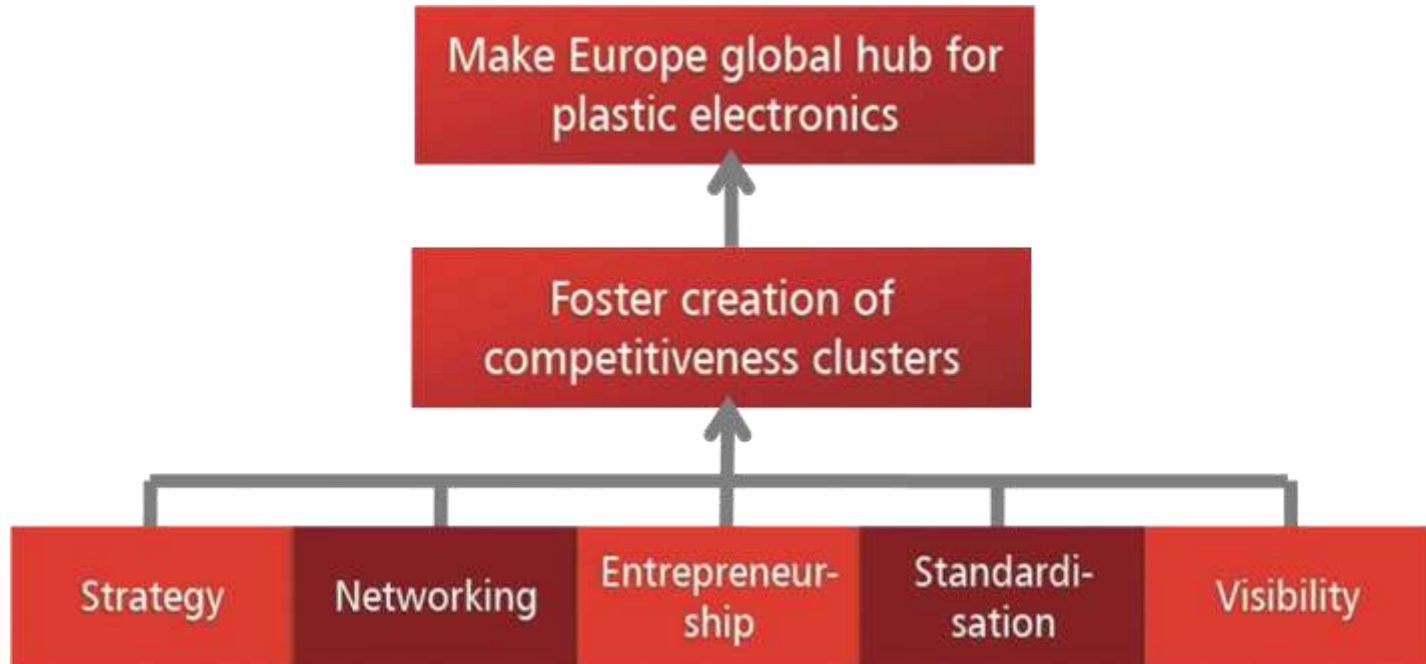


oe-a Roadmaps for Organic & Printed Electronics



© OE-A 2009

Objectives of OPERA



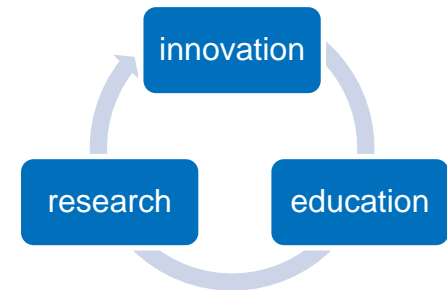
Cluster



A cluster is a geographically proximate group of companies and associated institutions in a particular field, linked by commonalities and complementarities.

- Key components for the emergence of clusters:

- Specific higher education hubs
- Best-of-class academic research groups
- Best-of-class research institutes
- A coherent network of businesses covering the entire value chain



- These factors facilitate and encourage partnerships

Hot Spots for Organic & Printed Electronics in Europe



- Oulu
- Cambridge
- Eindhoven
- Dresden
- Heidelberg
- Basel
- Linz
- Lyon
- Barcelona
- Thessaloniki

further information EU-projects:

www.quadriga-org.eu
www.opera-project.eu



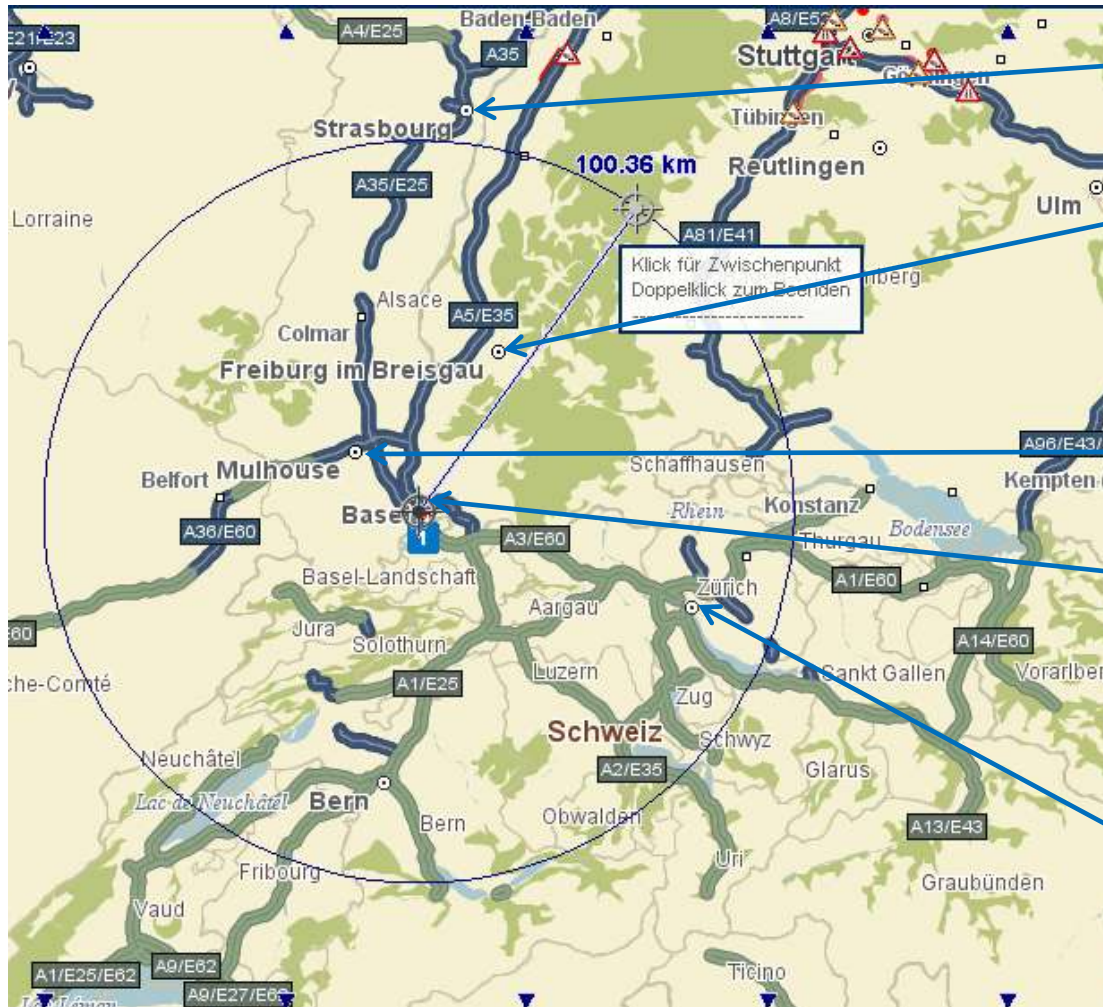


Tri-National Border Triangle “Upper Rhine Area”





Tri-National Border Triangle “Upper Rhine Area”



Strasbourg
- Institut Charles Sadron
- Strasbourg cluster on OPV

Freiburg
Uni-FR
-Macromolecular Chemistry
-Polymer Physics
-FhG-ISE
- FhG-IWM

Mulhouse
- Institut de Sciences des Matériaux

Basel
Uni-Basel
-Physics & Chemistry
-CSEM Basel
-BASF
-Huntsman
-Clariant

Zürich
- Amcor
-ZHAW
- ETHZ
- EMPA
- IBM Rüschlikon



Existing Networks in the Upper Rhine Area

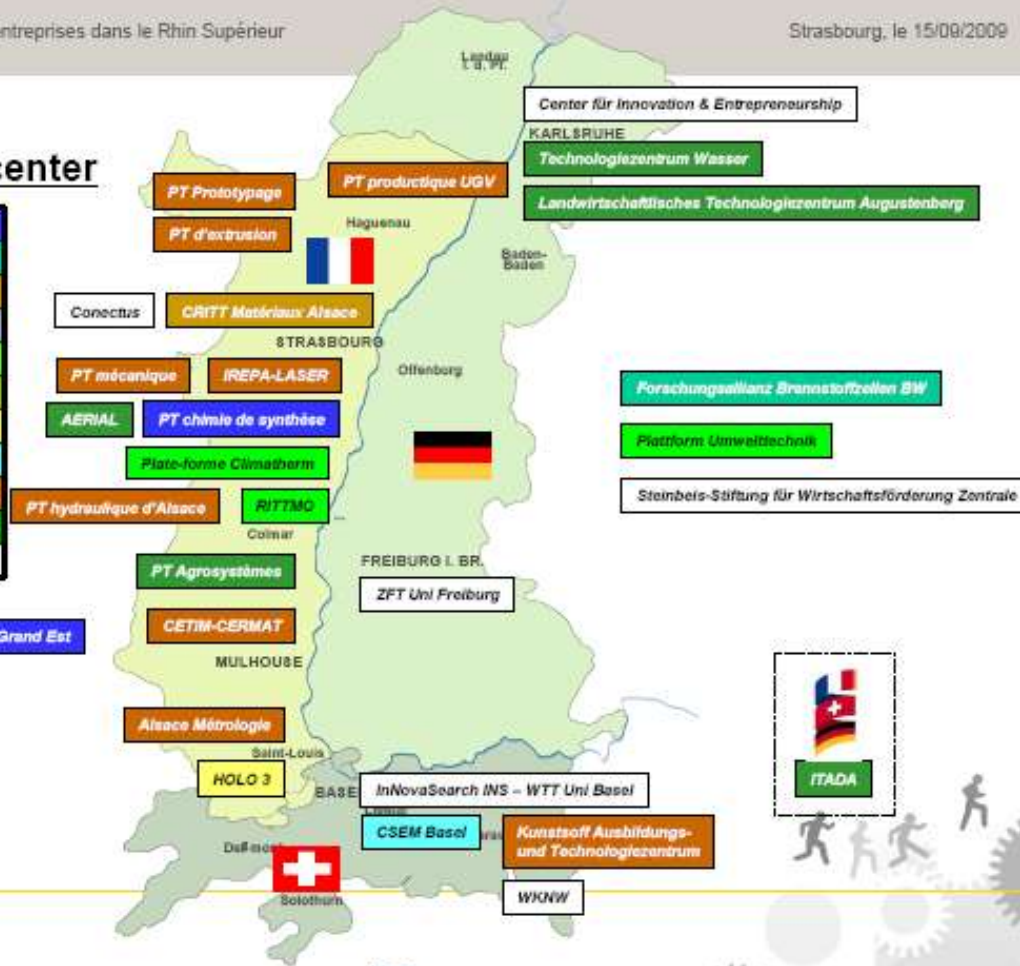
Les clusters et réseaux d'entreprises dans le Rhin Supérieur

Strasbourg, le 15/09/2009

3. Innovation center

- | |
|-----------------------------------|
| 1. Life Sciences / Chimie |
| 2. Automobile / Transport |
| 3. Matériaux / Nanotechnologie |
| 4. TIC / Médias |
| 5. Energie et Environnement |
| 5A. Construction / Aménagement |
| 6. Optique / Photonique |
| 7. Microtechnique / Electronique |
| 8. Ingénierie / Productique |
| 9. Agriculture / Agro-alimentaire |
| Multi-filières |

Canoéropôle du Grand Est



12 / 30

www.adira.com

Announcements

- International Simulation Workshop
“Organic Electronics & Photovoltaics”
30.06. 02.07.2010, Winterthur @ ZHAW (www.isw10.org)
- FSRM-Course:
“Polymer Optoelectronic Technologies and their Applications”
09.09.2010, Basel @ CSEM (www.fsrm.ch)
- OPERA & oe-a workshhop “Towards standards in the OTFT domain”
14.09.2010 in Dresden @ oe-a working group (www.oe-a.org)
- Dreiländerkongress “Bildung, Forschung, und Innovation”
02.12.2010, Basel @ Kongresszentrum (www.regbas.ch)

WORKSHOP Sessions

Workshop Session I

“Stakeholder Survey in the Upper Rhine Area”

Core Topic	Round-Table-Moderator
Materials	Prof. Günter Reiter (University of Freiburg)
Design/Characterization	Prof. Beat Ruhstaller (ZHAW)
OPVs/DSCs (Energy harvesting)	Dr. Frank Nüesch (EMPA)
OTFTs/Molecular (Electronics)	Prof. Bertram Batlogg (ETHZ) / Dr. Paul Seidler (IBM)
OLEDs (Lighting, Displays)	Dr. Tilman Beierlein (CSEM)
Sensors/Integrated Smart Systems	Dr. Carsten Winnewisser (CSEM)
Encapsulation/Substrates	Dr. Emilie Galand (Huntsman)

Stakeholder Survey (Who is Who)

- Applications ↔ Processes
- Value Chain

Workshop Session II

Afternoon

- EU-Objective ICT-2011.3.6
“Flexible, Organic and Large Area Electronics and Photonics”
(G. Nisato)

- Cluster Formation & OPERA-II
(A. Stuck & C. Winnewisser)

Thank you for your attention!

1. Objective

Opera proposes to coordinate the work of academia and industry in organic & large area electronics [OLAE]. The overall objective of this project is to strengthen the position of Europe as the leading force in OLAE in the world.



Europe is in pole position due to a number of factors such as its strengths in research & technology, the strong position in materials & processing, concentrated R&D activities carried out in European academia & research institutes, the first printed electronics factories already established. Europe is also leading in areas like e-paper, printed RFID's, first rollable displays, first printed sensors and first printed interactive games.

The specific objective of the Opera project is to create the conditions for the establishment of a number of coordinated competitive clusters in the EU.

2. Opera Project Partners:

Plastic Electronics Foundation, Eindhoven,
Mr. Ed van den Kieboom
<http://www.plastic-electronics.org/>

Cavendish Laboratory, Cambridge,
Prof. Dr. Sir Richard Friend
<http://www-oe.phy.cam.ac.uk/>

Institute of Applied Photo Physics, Dresden,
Prof. Dr. Karl Leo
<http://www.iapp.de/iapp/index.php?order=4&lan=en>

Holst Centre R&D Institute, Eindhoven,
Mr. Jaap Lombaers Msc
<http://www.holstcentre.com/>

Valtion Teknillinen Tutkimuskeskus, Oulu,
Dr. Arto Maaninen
<http://www.vtt.fi/>

**CSEM, Centre Suisse d'Electronique et de
Microtechnique SA, Basel,**
Dr Carsten Winnewisser
<http://www.csem.ch/>

Organic Electronics Association (OE-A), Frankfurt, Germany
Dr. Klaus Hecker
<http://www.oe-a.org>

Aristotle University of Thessaloniki, Greece
Prof. Dr. Stergios Logothetidis
http://www.auth.gr/home/index_en.html

InnovationLab GmbH, Heidelberg, Germany
Dr. Bernhard Schweizer
<http://www.innovationlab.biz>

Plastipolis, Oyonnax, France
Dr. Patrick Vuillermoz
<http://www.plastipolis.fr>

Oberrhein Region / Upper Rhine

- EU-Förderprogramme (grenzüberschreitende Zusammenarbeit INTERREG, EU-territorialen Zusammenarbit (EtZ))
- INERREG IV A (Oberrhein), Neue Regionalpolitik (NRP), Hr. Köhler, 1.5M Projects, 50% national
 - 25% cantonal, 25% CSEM
 - 4.4MSFr für 2008 bis 2011
 - 1.9MSFr für 2012 und 2013 durch den CH-Bund in Aussicht gestellt
- BS und BL Rahmenkredite von 1.7 und 1.5 MCHF bewilligt
 - <http://www.interreg-oberrhein.eu/>
 - <http://www.oberrheinkonferenz.org/>
 - <http://www.upperhine.com/>
 - <http://www.regiosuisse.ch>
 - <http://www.baselarea.ch/en.html>
 - <http://www.inet-basel.ch/>
 - www.euroinstitut.org