nanophotonics for energy efficiency

NANOPHOTONICS FOR ENERGY EFICIENCY
NETWORK OF EXCELLENCE N4E www.n4e.eu

The **Nanophotonics for Energy Efficiency** Network of Excellence (ICT FP7) aims to **re-orient and focus nanophotonics research towards the challenges in energy efficient applications**. The network clusters ***nanophotonics laboratories and research groups*** in Europe, combining their expertise in the development of disruptive approaches to ***lighting and solar cell technology***.

BACKGROUND

Climate change and energy are some of the main challenges that society is facing. Europe aims at a reduction of greenhouse gas emissions by 20%, an increase of the share of renewable energy to 20% and a 20% improvement in energy efficiency by 2020.

Lighting: By replacing the currently predominant incandescent light bulbs by energy efficient alternatives such as LEDs and OLEDs *the overall electricity consumption can be reduced by over 10%*

Energy generation: the Sun sends to the Earth surface the equivalent to the whole yearly human energy consumption in less than one hour. *A huge potential is available for exploitation in solar energy.*

Nanophotonics: Improvements in the **efficiency of light-matter interaction at the nanoscale** can result in important advances in the quality and efficiency of both light-emitting and light-harvesting devices. The better understanding and improvement of nanoscale phenomena can contribute to **improving energy efficiency in photovoltaics and** also the energy efficiency of the reverse process – conversion from electricity to light – **in light emitting devices**.

The activities targeting the improvement of energy efficiency by using nanophotonics would certainly benefit from a **better integration** among the main stakeholders, which should help **bridging the gap between basic and applied research, and also between research and industrialisation**. These are the main objectives of the Nanophotonics for Energy Efficiency NoE.

OBJECTIVES

The project intends to achieve the **overall long-term integration** goal by coordinating three main efforts:

1. **Realising a strategy for successful integration**: creation of new research community and a virtual laboratory network that will lead to the creation of a lasting entity that will exist beyond the duration of this NoE.

2. **Establishing joint research**: foster collaborations among the leading groups in nanophotonics for energy efficiency, interchanging knowledge and best practices, and paving the way towards the establishment of common research agendas.

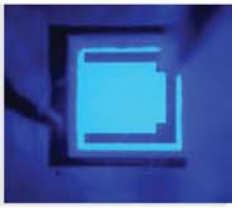
3. **Spreading knowledge**: education and training specially geared towards young researchers and technicians – both on S&T issues as well as on complementary skills like communication, business, entrepreneurial or IPR skills – and dissemination towards the scientific community, industry, and the public in general.

ASSOCIATE MEMBERSHIP

Participation in the Nanophotonics for Energy Network of Excellence is open to all relevant stakeholders through its **Seed Project** and **Associate Membership Schemes**. **What do we offer**?

* Invitations to attend Workshops, Summer Schools and other events
* Reduced fees for all events organized by the Network
* Participation on the Seed Projects scheme
* Presence in the project website www.n4e.eu
* Regular updates on the Network activities

If you are interested in becoming an associate member please join through the Project website: www.n4e.eu



PARTNERS

ICFO Institut de Ciències Fotòniques
TECHNISCHE UNIVERSITÄT DRESDEN
University of Southampton
CEA leti
LENS
CSIC
KTH Royal Institute of Technology
UPC Universitat Politècnica de Catalunya BarcelonaTech

CONTACT

www.n4e.eu

n4e-office@icfo.es

SEVENTH FRAMEWORK PROGRAMME