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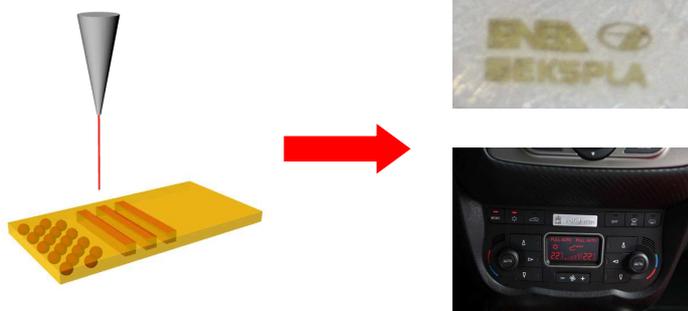
**LASER INDUCED SYNTHESIS OF POLYMERIC NANOCOMPOSITE MATERIALS  
AND DEVELOPMENT OF  
MICRO-PATTERNED HYBRID LIGHT EMITTING DIODES (LED) AND TRANSISTORS (LET)**

The overall goal of the LAMP project is to develop a new method for making light-emitting devices, using laser micro-patterning to generate quantum dots (QDs), giving new high performing materials for organic light-emitting transistors (OLET) and diodes (OLEDs).

Currently OLEDs are made either by depositing, small organic molecules by evaporation through a shadow mask, or by depositing polymers from solution by processes such as inkjet printing. However, these techniques have several drawbacks, e.g. material wasting (evaporation), expensive apparatus (vacuum chambers for evaporation), use of lithographic processes or masks for patterning (inkjet or evaporation).

New methods avoiding or reducing all the aforementioned disadvantages will be of outmost importance for the LED industry.

The LAMP project will demonstrate how OLEDs containing QDs can be produced without the use of any shadow mask or inkjet methodology decreasing the industrial costs and improving the light-emitting efficiency.



The potential impact of the project in scientific and industrial terms is based on the innovation for the production of QD-LEDs. QDs are already used mixed with polymer, but their selective direct formation on the polymer matrix can enhance the efficiency and lifetime of the device. In addition the use of the laser technology will be a real step ahead for industry because it applies laser technology, which is a well established technological platform in industry.



Italian National Agency for New Technologies,  
Energy and Sustainable Economic Development

**SCIENCE**  
and **TECHNOLOGIES**  
applied to  
**MANUFACTURED NANOMATERIALS**  
at  
**ENEA**

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The LAMP consortium gathers 7 groups belonging to five different countries, and it has been built with the scope to cover not only the expertise needed for the project, namely materials synthesis, materials laser processing teams and device developers, but also to recruit research groups actively working in the field of LED research and manufacturing.

[www.lamp-project.eu](http://www.lamp-project.eu)

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