



## NEXPRESSO Newsletter Winter 2011/12

There is a lot to tell you about the state of the different types of project in which you can engage. (If you do not know the details of the three types of project see the end of this newsletter)

### Type 1 Call 3 is now in progress

From the 1<sup>st</sup> February until 30<sup>th</sup> March 2012 NEXPRESSO welcomes **Companies submitting pre-market components** on which they wish Researchers to conduct a project. To submit components visit the NEXPRESSO web site [www.nexpresso.eu](http://www.nexpresso.eu) under Call for participation. The corresponding Call for **R&D projects** will open on 16<sup>th</sup> April and close on 25<sup>th</sup> May 2012.

### There have been two Type 1 calls already

The first call resulted in four contract awards



Actual AOSD setup at Institut Curie

1. Institut Curie using Adaptive Optics from COSINGO-Imagine Optic Spain S.L.

**Project name:** Adaptive Optics in Spinning Disk microscopy (AOSD) of living samples

**Aim of the project:** It is intended to prospect the potential of adaptive optics (AO) to correct for sample and system induced aberrations. The goal is to integrate AO in fast multi-focal microscopy at very low S/N ratio, on live biological samples for the observation in "medium thick" biological samples.

2. Institute of Photonic Sciences

using a Compact STED CW sources emitting in the yellow range from Solus Technology Ltd

**Project name:** Compact STED CW sources emitting in the yellow range

**Aim of the project:** The aim is to develop a STED microscope using novel semiconductor approach based on quantum dot technology, such as the new generation of the Yellow laser. This approach could be exploited to produce cheap, compact and easy to use high power lasers to be integrated on both commercially available and home-made STED microscope for making the technique attractive and affordable for nano-scale imaging.

3. The Institute of Photonic Sciences using a Super Resolution Multimodal Microscopy with Ytterbium Laser Systems from Time-Bandwidth Products AG

**Project name:** Super Resolution Multimodal Microscopy with Ytterbium Laser Systems

**Aim of the project:** The proposal is to use a widely tuneable ytterbium laser system as a Non-linear source to be used for nonlinear/multiphoton imaging and manipulation capabilities to two top-of-the line commercial microscopes:

- i) a spectral imaging confocal microscope and
- ii) a STED continuous wave (CW) confocal microscope.

4. CNIT using a 1X4 switching matrix based on Mach Zehnder Interferometers from Selex Sistemi Integrati SpA

**Project name:** Super Toward Integrated photoNicaSsisted fully-digital radar transceiver (INSIDE)

**Aim of the project:** The aim of the project is to implement an optical transceiver for a photonic-assisted fully-digital radar system based on optic miniaturized optical devices both for the optical generation of the radiofrequency (RF) signal and for the optical sampling of the received RF signal.

The second Type 1 call resulted in one award

ENSTA Paris Tech using a Multi spectral thermal converter camera from ALPhANOV

**Project:** To perform characterisation measurements in the TeraHertz and Short Wave Infrared (SWIR) spectral domains

There has also been one award in each of Type 2 and Type 3 categories.



Innolight Helios Laser

Type 2: University of Parma submitted a request to NEXPRESSO for a 60W (average power) tuneable pulse-width 10ns-10ps, fibre laser (with fibre exit), wavelength 1030nm, beam quality  $M^2 < 1.2$  and tuneable repetition rate 20kHz-1MHz for high-speed scribing of multi-layer polymeric materials  
NEXPRESSO matched the request with a laser from INNOLIGHT

**Project:** The use of a short-pulse high speed fibre laser for cutting Multi-layer materials

Type 3: HOWEST University, Industrial Design Centre will assess OLED lighting obtained from commercial sources and test them under outdoor conditions for a consortium of 10 companies.

**Project:** OLED lighting applications in outdoor conditions

Description of the different types of call in the NEXPRESSO Project

**Type 1**

This is a continuation of the ACCORD mechanism. Manufacturers register pre-market components on which they would like researchers to conduct experiments. These components are displayed on the NEXPRESSO web site and Researchers are asked to propose projects with a selected component. The proposals are assessed and the best are selected to enter contract negotiations. NEXPRESSO purchase the component and offer it to the researcher to undertake the proposed project.

**Type 2**

Under this mechanism researchers can ask for a component not currently available in the market in order to progress their research. Manufacturers can then propose components nearing market launch. AS IN Type 1 NEXPRESSO will purchase the component and provide it to the researcher.

**TYPE 3**

In this mechanism an "End-User" can suggest a research project using a component not yet in the market. The Researcher and component supplier have to be identified. Once this has been achieved NEXPRESSO buys the component and provides it to the researcher.