

Eol – Expression of Interest  
PARTNER SEARCH

AREA OF INTEREST:  
Answers expected before:

GENERAL INFORMATION		
NAME OF ORGANISATION*: NATIONAL TECHNICAL UNIVERSITY OF UKRAINE “KYIV POLYTECHNIC INSTITUTE”, PUBLISHING AND PRINTING INSTITUTE		
TYPE OF ORGANISATION*: <input type="checkbox"/> Public body (Research organization/university/lab) <input type="checkbox"/> SME/ SME association <input type="checkbox"/> Other private actor <input type="checkbox"/> Not for profit organization <input type="checkbox"/> Regional body/agency <input type="checkbox"/> Other (specify)		
CONTACT PERSON		
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TYPE OF PARTNER SEARCH*:		
<input checked="" type="checkbox"/> FP7 /HORIZON 2020 SPECIFIC CALL <input checked="" type="checkbox"/> NO SPECIFIC CALL/EXPRESSION OF INTEREST (ONLY IF RELEVANT)		
CONSORTIUM*		POSITION WITHIN CONSORTIUM*
<input checked="" type="checkbox"/> Create a new consortium <input checked="" type="checkbox"/> Join an existing consortium		<input checked="" type="checkbox"/> As a Partner
IF FP7 RELEVANT CALL: AREA OF INTEREST		
COOPERATION	CAPACITIES	
<input checked="" type="checkbox"/> 3 – ICT <input checked="" type="checkbox"/> 4 – NMP	<input checked="" type="checkbox"/> Research infrastructures <input checked="" type="checkbox"/> Regions of knowledge <input checked="" type="checkbox"/> Research potential <input checked="" type="checkbox"/> Science in society <input checked="" type="checkbox"/> International cooperation	
PEOPLE	IDEAS	
	<input checked="" type="checkbox"/> Starting Independent research grant	
<input checked="" type="checkbox"/> EURATOM	<input checked="" type="checkbox"/> JRC	
CALL DETAILS		
CALL IDENTIFICATION (according to WP): N/A	DATE OF PUBLICATION: N/A	CLOSURE DATE: N/A
PROJECT INFORMATION		
ACRONYME & TITLE: NanoPackaging “Nanophotonic and nanophotocatalytic composites for printing technology of present-day innovative food packaging”		

**SUMMARY\*:**

**The aim of the project** is to develop nanophotonic and nanophotocatalytic systems and printing technologies for manufacturing novel food packaging (smart packaging).

**Product description**

The project will develop a novel method to inform consumers, producers and distributors about various changes in the food packaging during transportation and storage. Such a technique is designed to provide prolongation of the foodstuff useful properties. The project will allow the use of existing equipment and technological lines of printing companies to produce the new product – smart packaging with nanophotonic and nanophotocatalytic active elements.

Smart food packaging will be able to notify customers whether the product is safe for consumption. This resulted signal is based on the analysis of chemical content – due to the presence of substances which reveal the degradation and aging processes taking place in packaged foodstuffs

The produced packaging will be characterized as multifunctional, e.g. it will be able to monitor current condition of a foodstuff for customers. Furthermore, this packaging can prolong expiration date by protection from UV radiation and avoid of using stabilizers of preservatives). Thus, the functionality and performance of the product will be considerably widened.

**The goals of the project (correlated with the stages):**

- 1) To carry out the synthesis of multicomponent polymer nanocomposites which can be used to detect the processes taking place inside or outside the packaging.
- 2) To study the interaction of the obtained functional components and printed compositions with substances arising in packaged victual during storage.
- 3) To study the application process of the developed printing inks with nanophotonic and nanophotocatalytic components to paper and polymer substrates via different printing techniques.
- 4) To optimize existing and develop new efficient printing techniques of formation of functional elements on a surface and inside multilayer materials of active and intelligent packaging involving different printing methods.
- 5) To work a problem of adjustment of materials properties (substrate parameters, content of compositions and viscosity) and printing process parameters of printed nanophotonic and nanophotocatalytic elements for active and smart food packaging.
- 6) And, finally, to integrate the process of printing production of smart packaging with nanophotonic and nanophotocatalytic elements into existing printing production lines.

As a result, we are looking for partners from EU countries, which are willing to become part of this project and which are able to cooperate during the 3-year period of time in order to successfully deliver this project. And, with the possibility for longer cooperation in order to develop this project into newer one.

**KEYWORDS:**

**Nanophotonics, Nanophotocatalysis, Printing Technology, Intelligent Packaging, Smart Packaging**

**TYPE OF PROJECT Funding scheme:** 100% reimbursement rate.

**PARTNERS ALREADY INVOLVED ( Contact Name, Name of organization, e-mail address):** None

**PARTNER SOUGHT**

**COUNTRY (IES) (if relevant):** European Union

**EXPERTISE REQUESTED\*:**

Expertise in either one of the following fields:

- photochemistry of nanomaterials;
- printing technology (flexographic, gravure, waterless offset, inkjet printing);
- production of printed food packaging.

**ROLE:** V Technology development                      V Research                      V Training  
                   V Dissemination                                      V Demonstration

<b>ORGANISATION TYPE:</b> V <u>Public body (Research organization/university/lab)</u> VV <u>SME/ SME association</u>	
<b>HOW MANY PARTNERS ARE REQUIRED?</b>	2 – 4 partners