

**Eol – Expression of Interest  
PARTNER SEARCH**

**AREA OF INTEREST:  
Answers expected before:**

GENERAL INFORMATION		
<b>NAME OF ORGANISATION*:</b> NATIONAL TECHNICAL UNIVERSITY OF UKRAINE “KYIV POLYTECHNIC INSTITUTE”, FACULTY OF ELECTRONICS		
<b>TYPE OF ORGANISATION*:</b> University		
<input checked="" type="checkbox"/> Public body (Research organization/university/lab)		
CONTACT PERSON		
<b>NAME*</b>	levgen	
<b>COUNTRY</b>	Verbytskyi	
<b>ADDRESS</b>	16, Polytechnichna str., room 313, 03056, Kyiv, Ukraine	
<b>TEL*</b>	+38 063 616 4535	
<b>FAX</b>	+38 044 236 2117	
<b>E-MAIL*</b>	<a href="mailto:verbitskiy@bigmir.net">verbitskiy@bigmir.net</a>	
TYPE OF PARTNER SEARCH*:		
<input checked="" type="checkbox"/> FP7 /HORIZON 2020 SPECIFIC CALL		
<input 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"/> As a Partner
<input checked="" type="checkbox"/> Join an existing consortium		
IF FP7 RELEVANT CALL: AREA OF INTEREST		
COOPERATION	CAPACITIES	
<input checked="" type="checkbox"/> 3 – ICT	<input checked="" type="checkbox"/> Research infrastructures	
<input checked="" type="checkbox"/> 5 – Energy	<input checked="" type="checkbox"/> Research potential	
	<input checked="" type="checkbox"/> International cooperation	
PEOPLE	IDEAS	
<input checked="" type="checkbox"/> Initial Training networks Networks (ITN)	<input checked="" type="checkbox"/> Starting Independent research grant	
<input type="checkbox"/> EURATOM	<input type="checkbox"/> JRC	
CALL DETAILS		
<b>CALL IDENTIFICATION</b> (according to WP): N/A	<b>DATE OF PUBLICATION:</b> N/A	<b>CLOSURE DATE:</b> N/A
PROJECT INFORMATION		
<b>ACRONYME &amp; TITLE:</b> Micropower electric converters based on thread ZnO nanocrystals		

<b>SUMMARY*:</b>	
<p>This project seeks to solve an important scientific and applied problem of transformation and stabilization of parameters of electricity using semiconductor micropower converters. More specifically, consortium, which will be formed, is aiming to construct the converter used high efficiency devices, which minimizes losses in transformers and provide the necessary parameters of load voltage.</p> <p>In general, Nanogenerators of electric energy is one of the promising areas of micropower supply systems that can be used for power generation in life support systems, power mobile and medical devices, devices for collecting and processing information. The nanogenerator output voltage is unstable and is changing in a wide range. Due to the low (1.5 V) and unstable output voltage at the output must install electricity converters with low voltage drop and power in range from microwatts to several watts.</p> <p>Electric power conversion allows reduce in several times energy loss and increases the efficiency. Reducing the amount of energy loss is achieved by special converter circuit, which will increase the service life of the power supply compared to systems based on chemical power sources several times.</p> <p>Nanogenerator consists of an array of whisker nanocrystals, usually with zinc oxide or other materials that are both semiconductors and piezoelectric. The energy of deformation filamentary nanocrystals transform into electrical form. One of the conversion method deals with special electrode. The frequency of strains can be in a wide range from milihertz to tens of kilohertz. During electrode vibration, the deformation of nanofibers generates electrical energy, which appears on electrodes. The nanogenerator voltage amplitude is in the range of tens of millivolts to several volts. Output capacitor accumulates electrical energy and leads to significant volatility parameters of the output voltage.</p> <p>Therefore, present project, at its current stage has been developed by a dedicated group from Faculty of Electronics of NTUU "KPI" and is seeking for minimum two participating EU countries, which are different from each other. For the sake of the project further formed team are to apply for the grant enough for running and successful completion of the project within 3-4 years.</p>	
<b>KEYWORDS:</b>	
<b>Energy supply system, ZnO nanocrystals, micropower converter</b>	
<b>TYPE OF PROJECT Funding scheme :</b>	
H2020 funding program for the international research cooperation	
<b>PARTNERS ALREADY INVOLVED ( Contact Name, Name of organization, e-mail address):</b> No partners	
<b>PARTNER SOUGHT</b>	
<b>COUNTRY (IES) (if relevant):</b> European Union Countries	
<b>EXPERTISE REQUESTED*:</b>	
<p>According to the aims of the project, the following expertise is required from the partners: electronics, electrical engineering, system design, microprocessor and microcontroller technique, programming. No specific requests on which component should belong to any of the participants. All components can be discussed for further distribution. More specifically, roles are expected to be distributed in the following way:</p> <p><b>KYIV POLYTECHNIC INSTITUTE</b> – R&amp;D of converter prototype.</p> <p><b>First partner</b> – lead partner.</p> <p><b>Second partner</b> – produce industrial tool of converter.</p>	
<b>ROLE:</b> <input checked="" type="checkbox"/> Technology development <input checked="" type="checkbox"/> Research <input checked="" type="checkbox"/> Training <input checked="" type="checkbox"/> Dissemination <input checked="" type="checkbox"/> Demonstration	
<b>ORGANISATION TYPE:</b>	
<input checked="" type="checkbox"/> Public body (Research organization/university/lab)	
<b>HOW MANY PARTNERS ARE REQUIRED?</b>	Two partners