

## 1. Project Proposal Information

<b>Project Proposal Title</b>	Controlled regulation of structure and phase formation processes in Ni and Cr - base multicomponent systems by high energy sources
<b>Project Proposal Acronym</b>	
<b>Call Identifier</b>	FP7-NMP-2012-CSA-6 FP7-NMP-2012-SME-6 FP7-NMP-2012-LARGE-6 FP7-NMP-2012-SMALL-6
<b>Topic(s)</b>	NMP.2012.2.2-3 Advanced materials for high-temperature power generation
<b>Funding Scheme</b>	Small or medium-sized collaborative projects – Specific International Cooperation Actions (SICA) to promote the participation of emerging economies and developing countries: Eastern partnership countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine). Consortia must include at least two participants from different Eastern Partnership countries.
<b>Keywords</b>	Materials that allow operation at high temperature, materials' in-service properties, corrosion resistance, erosion resistance, radiation resistance, reliability and durability, ionic conductivity and mechanical properties
<b>Abstract (Max. 2000 words)</b>	<p>The purpose is the creation of principals for the surface layers structure control of hot-strength Ni and Cr – base alloys and development on these data of new conceptual resource-saving technology for the surface modification and repair of components and machine parts working in extreme conditions to support high level of service properties which could not be achieved even using of the latest solid construction materials.</p> <p>The application of original coating mixtures and combined high energy treatment technique allows to obtain the coatings with a preassigned type of concentration and phase distributions on the hot-</p>

	<p>strength Ni and Cr – base alloys with controlled regulation of structure from nano- to microsize scale, without surface and inner defects.</p> <p>The increasing alloying elements content in studied alloys in comparison with traditional steels provide high-temperature strength growth up to 1300 K and technological properties enhancement..</p>
<b>Project Description (Main Work Packages)</b>	<p>The application of original coating mixtures and combined high energy treatment technique allows to obtain the coatings with a preassigned type of concentration and phase distributions on the hot-strength Ni and Cr – base alloys with controlled regulation of structure from nano- to microsize scale, without surface and inner defects.</p> <p>The increasing alloying elements content in studied alloys in comparison with traditional steels provide high-temperature strength growth up to 1300 K and technological properties enhancement.</p>
<b>Current Consortium (Partners, Organisation Types)</b>	No
<b>Deadline for Responses</b>	November 2011, January 2012

## 2. Profile of the Partners Sought

<b>Organisation Type</b>	Research or Educational
<b>Required Skills and Expertise</b>	Materials that allow operation at high temperature, materials' in-service properties
<b>Role in the project</b>	Cooperation in investigations
<b>Other Requirements</b>	

### 3. Project Proposer Information

<b>Name of the Organisation</b>	National Technical University of Ukraine "Kiev Polytechnic Institute"
<b>Organisation Type</b>	Education
<b>Country</b>	Ukraine
<b>Fields of Activity</b>	Materials that allow operation at high temperature, materials' in-service properties, such as corrosion resistance, erosion resistance, radiation resistance, reliability and durability, ionic conductivity and mechanical properties
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<b>Previous FP Projects Participated</b>	No