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Placement Offer Form

SLOVENIA

CMEPIUS, Ob železnici 30 a, 1000 Ljubljana, Slovenia

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EMPLOYER INFORMATION	
Name of organization	Jožef Stefan Institute
Address	Jamova cesta 39
Postal Code	1000
City	Ljubljana
Country	Slovenia
Telephone	+386 1 477 3834
Fax	+386 1 477 3887
E-mail	tadej.rojac@ijs.si
Website	http://www.ijs.si/ijsw/V001/JSI
Number of employees	~900
Year of foundation	1949
Contact person	Asst. Prof. Tadej Rojac
Department / Function	Electronic Ceramics Department K-5
Direct telephone number	+386 1 477 3834
Direct mobile	+386 41 744 212
Direct e-mail address	tadej.rojac@ijs.si
Short Description of the	Jožef Stefan Institute (JSI) is the main research institute in Slovenia. The Institute gathers more than 800 employees within

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Company	<p>several research departments in physics, chemistry, electronics and energetics. JSI has collaborations with national and international companies and universities and it is active both in basic science and research & development projects for industry.</p> <p>The Electronic Ceramics Department K-5 is active in the field of synthesis, properties and applications of ceramic materials for electronics and energetics, including piezoelectrics, ferroelectrics, relaxors and conductive oxides. The studies at the Department are focus on bulk materials, thick and thin films and printed structures prepared from lead-based and lead-free materials.</p>
Other	

PLACEMENT INFORMATION	
Department / Function	<p>Electronic Ceramics Department K-5, Jožef Stefan Institute (JSI)</p> <p>http://www-k5.ijs.si/</p>
Description of activities	<p>The work will be focused on the processing and characterization of complex ceramic oxides with electromechanical (piezoelectric) activity. Guided by a mentor, the student will prepare in the laboratory several compositions using standard solid-state ceramic synthesis and also alternative processing methods, such as mechanochemistry (high-energy milling). The processing will be supported by characterization of the ceramic powders using granulometric analysis, scanning electron microscopy (SEM) and X-ray diffraction (XRD) analysis to assess powder morphology and phase composition. Sintering of powder compacts will be followed by dilatometric analysis. We will also undertake a complete structural and microstructural analysis of the sintered ceramics using XRD and SEM analyses. Some of these analyses will be performed directly by the student, so he/she can learn integrally how to process ceramic compositions and how to analytically follow the different stages of the processing.</p> <p>The obtained ceramic samples will be also characterized functionally by measuring various electrical and electromechanical properties. The student will prepare samples for such characterization, which includes cutting and shaping, polishing and electroding the samples, and will track the correlation between the functional properties and the processing.</p> <p>The study that will be performed is part of a national research</p>

	<p>project that is currently running at the Department.</p> <p>The aim of the student's visit is that the student learns, understands and strengthens the knowledge on ceramic processing and basic characterization of structural, microstructural and functional properties of ceramics with complex chemical compositions.</p>
Duration	at least 4 months; first possible start date: 11 th January 2016
Working hours / Weekly hours	8 hours per day (that is, 40 hours per week)
City	Ljubljana
Help with finding Accommodation	yes
Financial Contribution	no
Other	We expect the student to be motivated and open for gaining new knowledge in the field of ferroelectric and piezoelectric ceramics. JSI will provide all the facilities to run the work and to transfer knowledge.

LANGUAGE REQUIREMENTS¹				
Language	Listening	Reading	Writing	Speaking
English	2	2	2	2
German				
French				
Italian				
Spanish				

ICT REQUIREMENTS	
requirement	Expertise level²

¹ Required language skills are rated from 1 to 3:

- 1 - basic level
- 2 - intermediate level
- 3 - proficient level

² ICT skills are rated with 3 levels of expertise:

- Basic level
- Intermediate level
- Proficient level

Undergraduate student (preferably at the end of the study) or master student of chemistry, chemical engineering and technology or fields related to material science	/
Experiences in chemical laboratory (mandatory)	/
Student from EU countries	
Duration of the visit at least 4 months.	/

OTHER REQUIREMENTS	
Driver's license	Not needed
Other	The applicant needs to be interested in processing and characterization of new ceramic materials and motivated to work on a high scientific level in the field of piezoelectric and ferroelectric ceramic materials. Experiences in a chemical laboratory are mandatory (at least on the level of undergraduate chemical practices). All the training will take place at the host institute.