



EUROPEAN UNION



GOVERNMENT OF ROMANIA



SERBIAN GOVERNMENT



Structural Funds
2007-2013



Pole of Collaboration in New Functional Alloys

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Romania - Republic of Serbia IPA Cross-border Cooperation Programme



Romania-Serbia

Common borders. Common solutions.

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Partners

Romanian partner (Lead Partner)

Politehnica University of Timisoara, Timisoara, Romania (UPT)



*“A school is not made by its walls,
but by the spirit that reigns inside”*



King Ferdinand I

(1923 – Innauguration of Școala Politehnica din Timișoara)

Serbian partner

Mining and Metallurgy Institute Bor, Bor, Serbia (MMI Bor)



Teams

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Project LOGO

Pole of Collaboration in New Functional Alloys



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UPT Team

Joint project manager: Prof. Corneliu M. Craciunescu

Joint financial manager: Ms. Adriana Szakallas/
Monica Bota

Joint marketing manager: Dr. Ing. Iosif Hulka

Researcher 1: Prof. Ion Mitelea

Researcher 2: Prof. Victor Budau

Researcher 3: Assoc. Prof. Dragos Utu

Researcher 4: MSc. Ing. Lazar Soveja

Teams



IRMB Team

Joint Scientific Advisor: Dr. Ana Kostov

Joint research coordinator: Dr. Aleksandra Milosavljevic

Researcher 1: Dr. Radisa Todorovici

Researcher 2: Dr. Zdenka Stanojevic Simsic

Researcher 3: Dr. Mile Bugarin

Researcher 4: Dr. Milenko Ljubojev

Researcher 5: Dr. Borivoje Stojadinovic

Researcher 6: Dr. Sladan Milenovic

Internal audit coordinator: Vasna Floric

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Goal

- To develop a cross-border network for R&D in New Functional Materials Engineering, adapted to the specific areas of interest (metallurgy) and novel developments (functional, multifunctional and intelligent materials as well as micro and nanoengineering) in the field

Via:

- transfer of knowledge for the beneficiaries looking for continuous education (from their existing aptitudes in metallurgy into novel materials fabrication),
- a base for research and training for students and researchers
- information and connections through collaboration, for beneficiaries looking to develop independent activities in the field of Advanced Materials and Micro/Nanoengineering.

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Objectives

- Creation of POCAL Cross-Border Network
- Development of interconnected innovation clusters
- Joint research in Advanced Functional Materials
- Design of the transfer of knowledge mechanisms
- Promotion activities
- Development
- Preparation for self-support

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Project activities

No.	Activity	Starting date	Completion date	Location (county)	Responsible Partner
1	Design & implementation of POICAL mechanisms	Month 1	Month 3	Timis	UPT
2	Media campaign and POICAL web portal	Month 1	Month 12	Borski and Timis	UPT
3	Focusing meeting	Month 1	Month 3	Borski	MMI Bor
4	Study of regional needs and opportunities	Month 1	Month 3	Borski	MMI Bor
5	Updating the fabrication and functional exploration laboratory	Month 2	Month 10	Timis	UPT
6	Publication in special issue of Journal "Copper" published by MMI Bor (2volumes/year)	Month 3	Month 12	Borski	MMI Bor
7	Set up of the microstructural investigations laboratory with acquisition of specific equipment and training of people	Month 3	Month 10	Borski	MMI Bor
8	Materials development and optimization	Month 1	Month 12	Timis	UPT
9	Materials characterization	Month 1	Month 12	Borski	MMI Bor
10	Demonstrator	Month 9	Month 12	Timis	UPT
11	Joint activities to publish scientific papers	Month 3	Month 12	Borski (and Timis)	MMI Bor
12	Participation on scientific international conferences and/or workshops	Month 3	Month 12	Borski Timis	MMI Bor
13	POICAL ToK Center	Month 10	Month 12	Borski	MMI Bor
14	Open day	Month 6	Month 10	Timis	UPT
15	Workshop	Month 9	Month 12	Borski	MMI Bor
16	Joint applications	Month 9	Month 12	Timis	UPT
17	Preparation for self-support	Month 9	Month 12	Timis	UPT

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POCAL Images

from the Focusing meeting organized in Mining and Metallurgy Institute Bor



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Newsletter

Focus meeting in Bor

Presentation of the partner's institutions: PU Timisoara and MMI Bor.

Forming the Joint Steering Committee.

Discussion about the activities of the project: starting activities, preparing of necessary documents for realization of I project period: Progress Report, JTS/Joint Technical Secretariat, FLC/First Level Control of the Programme and Joint Steering Committee/JSC.

Discussion and elaboration of the Plan of Project Activities, Budget per Activities, as well as Contracting Plan and starting Procurement activities.

Discussion about the development of the research collaboration: materials to be manufactured and characterized, technologies to be developed, preliminary tests based on existing experience, interconnection of the research activity

Partners on the POCAL project agreed on the following activities to be initiated in the first trimester:

Fabrication of alloys

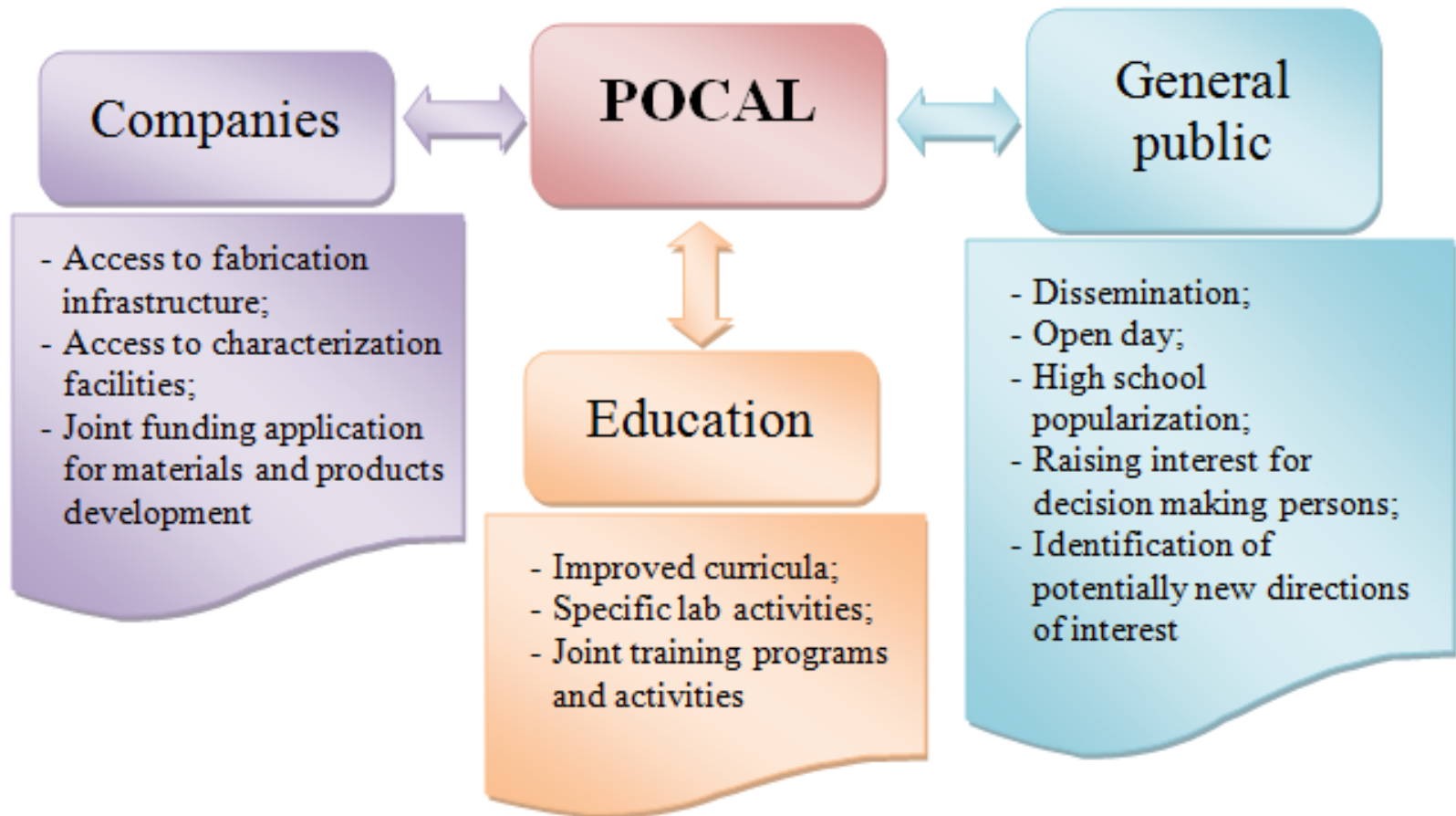
Design of technologies

Design and fabrication of devices for severe plastic deformation

Preliminary tests

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POCAL Project interactions



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New equipment acquired

**High vacuum
microfabrication unit**



Spark plasma sintering unit



X-ray diffraction unit



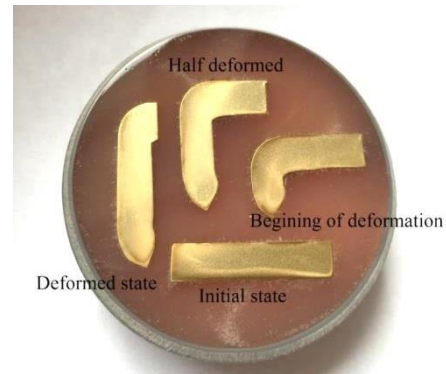
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Materials development

Shape memory alloys
manufactured by arc melting
and meltsuction



Fabrication by severe plastic
deformation



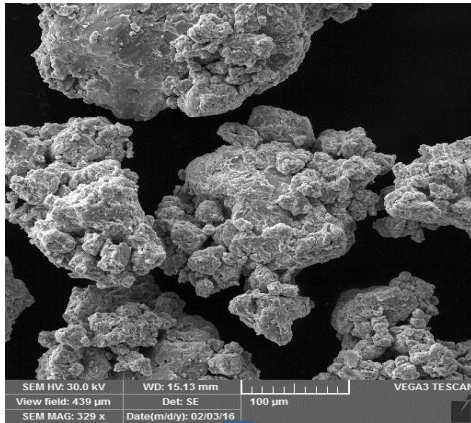
Fabrication by spark
plasma sintering



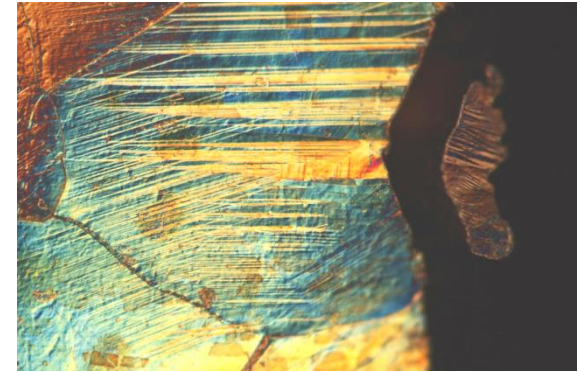
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Materials characterization

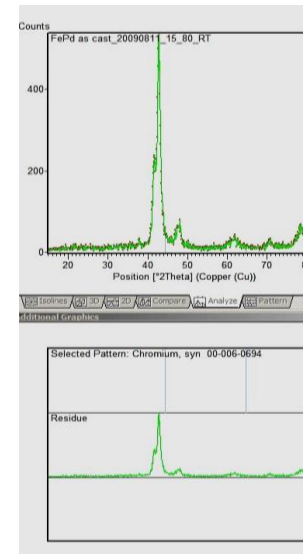
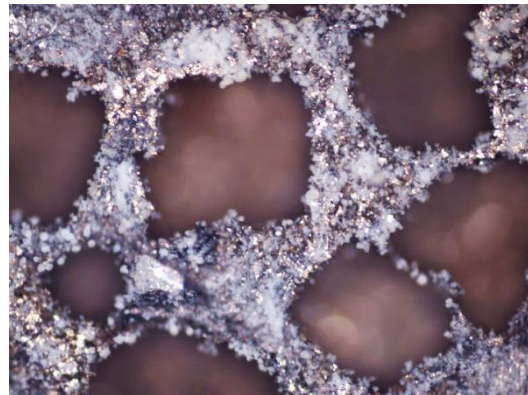
Sintering experiments



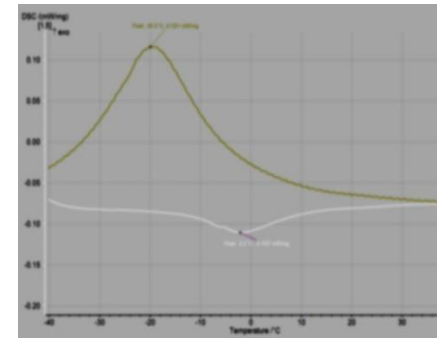
Complex structures



Porous microstructure



Structural and microstructural characterization



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Demonstrators

Shape memory controlled diaphragm

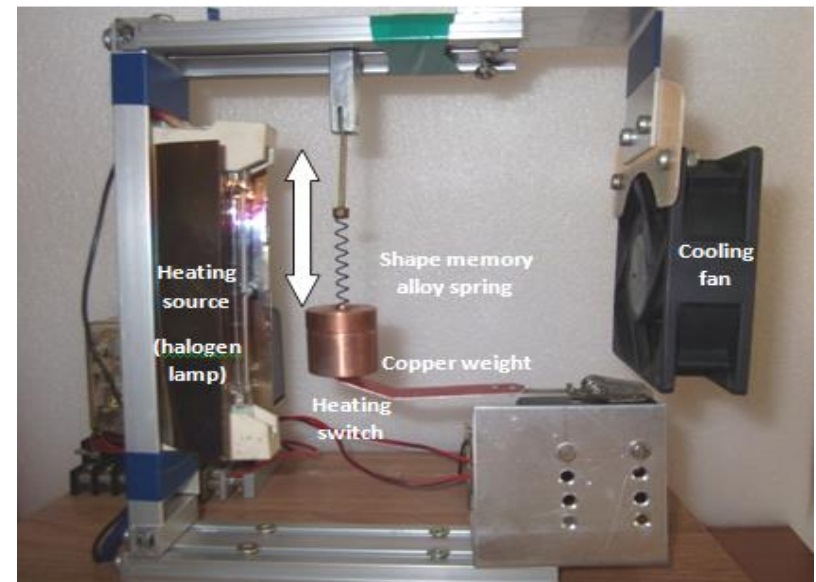


Cold shape



Hot shape

Shape memory alloy demonstrator



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May 31, 2016 Workshop organized in Mining and Metallurgy Institute Bor

Images from the Workshop “Innovation in Functional Alloys”



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Expression of interest

We are looking to submit an application for IPA INTERREG Crossborder Cooperation Programme România-Serbia with the provisional subject Romania-Serbia Cross-Border Center For Increased Access In Highly-Skilled Job Market (ROSE4SKIL)

ROSE4SKIL project plans to enhance the potential of the programme area for an inclusive growth, by promoting increased qualification for the people in the cross border region

The **overall objective of the project** is to create Romania-Serbia Cross-Border Center For Increased Access In Highly-Skilled Job Market center in the field of Advanced Applied Sciences and Technology that would allow people already holding a degree in fields related to applied science to wider their competences by acquiring complementary skills.

Interested partners should contact us using the data shown on the last slide

January 15, 2016

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Joint applications

Interreg - IPA CBC 
Romania - Serbia

Romania-Serbia Cross-Border Center For
Increased Access In Highly-Skilled Job Market
ROSE4SKILL

Leading Partner: National R&D Institute for Welding and Material Testing – ISIM
Timisoara, Romania

Partner: Politehnica University Timisoara, Romania

Partner: Mining and Metallurgy Institute Bor, Republic of Serbia

Partner: Innovation Center of Faculty of Mechanical Engineering, University of
Belgrade, Vrsac Branch office, Republic of Serbia

Partner: Association for development of Kladovo, Republic of Serbia

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Joint actions

Workshop



Open day

Transfer of knowledge



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Collaboration offer

POCAL

Project identification

Project name: Pole of Collaboration in New Functional Alloys

Acronym: POCAL

MISE-TC Code: 1328

Programme: Romania – Republic of Serbia IPA Cross-border Cooperation Programme

Priority Axis: Support increased levels of R&D and innovation in the border region

Partners:

Politehnica University Timișoara
Mining and Metallurgy Institute Bor

Project start date: 23.09.2015

Project duration: one year

POCAL offer

- Joint research in Advanced Functional Materials
- Transfer of knowledge



- Training courses in Advanced Materials



- Collaboration in Funding applications
- Access to research facilities



NEW EQUIPMENT ACQUIRED

Politehnica University Timisoara

X-ray diffraction unit

Arc melter



Spark plasma sintering



Mining and Metallurgy Institute Bor

Scanning electron microscope



DTA-TGA-DSC devices



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Contact and usefull links

Contact data

Romanian Partner

Politehnica University Timisoara

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Phone: +40-0256-403000 Fax: +40-0256-403021

Web: www.upt.ro

Project manager: Prof. Corneliu M. Craciunescu, e-mail: corneliu.craciunescu@upt.ro

Serbian Partner

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Phone+381 30 436826; +381 30 454101 Fax+381 30 435175

Web:www.mininginstitutebor.com

Scientific coordinator: Dr. Ana Kostov, e-mail: ana.kostov@irmbor.co.rs

Usefull links

- Romania-Serbia Programme http://www.romania-serbia.net/?lang=en_GB
- Regional Office for Cross-border Cooperation Timisoara (RO CBC Timisoara) <http://www.brct-timisoara.ro/>
- [Serbian European Integration Bureau](http://www.seio.gov.rs/%D0%BF%D0%BE%D1%87%D0%B5%D1%82%D0%BD%D0%B0.1.html)
<http://www.seio.gov.rs/%D0%BF%D0%BE%D1%87%D0%B5%D1%82%D0%BD%D0%B0.1.html>
- Politehnica University of Timisoara <http://www.upt.ro/>