A Turkish SME is looking for a project partner for the Spain-Turkey Eureka call, which aims to develop, produce and characterize aluminum/nickel/white cast iron/steel/high entropy alloy using computational materials engineering methods

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Türkiye**	**RDRTR20250321002**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• Spain**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**21 Mar 2025** **21 Mar 2026**	**24 Mar 2025**

General Information

Short summary

Within the scope of a Turkey-Spain bilateral cooperation project, a Turkish SME is looking for a project partner. The project's targeted material groups include aluminum, nickel, white cast iron, steel, and high-entropy alloys. The main goal is to conduct alloy development activities and especially focus on discovering the suitability of the developed alloys for production with traditional and advanced production technologies. A potential Spanish partner could be the private sector.

Full description

A Turkish SME is developing expertise in alloy development using computational materials engineering technologies and has submitted various national and international project applications in this field. One of the Eureka projects has already been supported by Turkey and additional EU support is expected.

The SME focuses on developing alloys suitable for traditional and advanced manufacturing technologies. In this context, the SME is carrying out alloy development projects suitable for casting and additive manufacturing.

Within the scope of Turkey-Spain bilateral cooperation; it aims to develop aluminum, nickel, white cast iron, steel or high entropy alloys with the potential partner. The SME will calculate the temperature-dependent material properties of the alloy in a computer environment by conducting alloy development activities with computational materials engineering. Data such as temperature-dependent phase fraction, information and amount of phases, critical transformation temperatures, and process parameters will be obtained with simulation results. According to the simulation results, the chemical composition ratios of the alloy to be produced will be determined. The contribution expected from the Spanish project partner is: production (casting or powder), characterization (microstructure or mechanical properties), and plastic forming (hot forging, extrusion, and hot pressing). It can be one or more of the mentioned contributions.

SME will determine the alloy to be developed with the Spanish project partner. The project will consist of three work packages. These are:

WP - 1 : Alloy Development (12 Months)
WP - 2 : Production of Developed Alloys (8 Months)
WP - 3 : Characterization Studies (6 Months)

Advantages and innovations

-The project to be applied with Turkey-Spain bilateral cooperation is expected to provide information and technology transfer between the countries.

-With developing technology, the service conditions expected from engineering components are changing and the demand for new alloys is becoming mandatory. Within the scope of this bilateral cooperation, alloy development studies will be used with Computational Materials Engineering, which is a trending topic in the global market. Thus, cooperation and potential market needs will be analyzed in the studies carried out in the global market.

Technical specification or expertise sought

The Turkish SME is looking for a project partner that will actively participate in production or characterization activities. In this context, priority will be given to partners with infrastructure for casting or laboratory scale powder production. However, in the absence of such production capabilities, cooperation with partners who can undertake comprehensive characterization studies including:
Chemical composition analysis
Microstructural studies (optical and scanning electron microscopy)
Mechanical testing (hardness, tensile strength, wear resistance)
Corrosion testing
The partnership will contribute to the advancement of alloy development through joint R&D efforts within the scope of international cooperation.

Stage of development

Under development

IPR Status

No IPR applied

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**

IPR Notes

Partner Sought

Expected role of the partner

Turkish SME; will decide on the alloy to be developed together with the Spanish project partner.
Turkish SME: will conduct alloy development studies in a numerical modeling environment using computational material engineering technology.
Spanish project partner: is expected to take part in production or characterization work packages. In the production work package, sample production of the alloy developed by casting or powder production will be carried out in line with the infrastructure of the company. The produced samples can then be subjected to hot forging, sintering, or heat treatment processes according to the need for plastic shaping. This process will be decided jointly by the Turkish SME and the Spanish project partner. In the characterization work package, the microstructures and mechanical properties of the produced samples will be examined. In this context, optical and scanning electron microscope, hardness, tensile, and chemical composition measurements should be made. These can be carried out with the Spanish project partner infrastructure or service procurement.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **SME 11-49**
- **SME <=10**
- **Big company**
- **SME 50 - 249**

Call Details

Framework program

Eureka

Call title and identifier

Turkiye-Spain Call

Submission and evaluation scheme

Anticipated project budget

Coordinator required

No

Deadline for EoI

24 Apr 2025

Deadline of the call

24 Apr 2025

Project duration in weeks

Web link to the call

Project title and acronym

Dissemination

Technology keywords

- **02003006 - Prototypes, trials and pilot schemes**

Market keywords

- **08005 - Other Industrial Products (not elsewhere classified)**

Targeted countries

- **Spain**

Sector groups involved

- **Energy-Intensive Industries**