

**Host organization:** Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences (IICT-BAS); Prof. Dr. Dimitar Karastoyanov - Supervisor

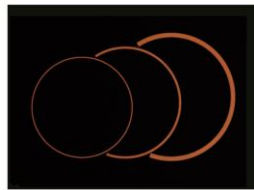
**Country:** Bulgaria

**Organization role:** Coordinator

**Project Acronym:** DeMoMet

**Project start and end date:** 01.11.2018-01.05.2020

**Type of MSC Action, H2020:** MSCA-IF



# DeMoMet

## **Your story:**

### **Project objectives and research field:**

The proposed research plan has two main assignments: firstly, to experimentally obtain optimal processing parameters for producing highly conductive, strengthened copper matrix composites with uniform dispersion of submicron and nano-sized reinforcements; secondly, to create a computational model for mechanical alloying process and for predicting the behavior of MMCs.

### **Tell us why the topic is important and / or how it brings to advancement in your research field:**

Manufacturing costs of MMCs are currently very high mainly due to lack of material design database and limited knowledge related to their behavior in various working conditions. This proposed research aims to improve understanding of the relation between MMCs production parameters and their properties. Powder metallurgy will be used for MMCs production. It is expected that with increasing mechanical alloying time the distribution of reinforcements (in-situ formed during densification process) in metal matrix become more uniform which is a requirement for excellent mechanical properties.

**What are the benefits of participating in a MSC Action?**

Improving the organisation, researcher and supervisor knowledge and expertise.

Connections with world known scientists from different countries in the project area.

Moreover, creating computational models for control of microstructure and process design of MMCs will contribute to a better understanding and predicting the behavior of a wide variety of MMCs. It will provide a cost effective solution in the manufacturing of MMCs which will expand possibilities in the design of new products.

**Did you encounter any challenges during application / implementation and did you get any help?**

The National Contact Points from Bulgaria were very helpful. They had answer and advice to every question.

**Would you recommend others to apply? What useful advice / tips can you give them?**

Yes, we will recommend others to apply, due to the possibilities of MSC Actions for extending the results and relationships between scientists from different countries.

As advice, the applicants must read very carefully the instructions given from the EC, and to fill in all needed areas in the project proposal.

**What strategies did your organization use to attract the fellow/s? Are they in line with national strategies supporting the widening EC policy?**

Our fellow was post doc in a previous successfully finished EU project. The institute was a beneficiary of the AComIn Project, and was awarded as the best project of the year in Bulgaria.