





Memorandum of Understanding

on Academic and Scientific Collaboration

between

Brno University of Technology,

participating department: Faculty of Mechanical Engineering,

Technická 2896/2, 616 69 Brno, Czechia

Institute of Physics of Materials, Czech Academy of Sciences,

Žižkova 513/22, 616 00 Brno, Czechia

and

Slovak University of Technology participating department: Faculty of Chemical and Food Technology Department of Inorganic Materials

Radlinského 9, 812 37 Bratislava, Slovakia in the text below referred to as "Parties"

I. PURPOSE

This memorandum is specifically concluded in order to establish a long-term partnership with the objectives of promoting a mutually beneficial relationship and scientific cooperation with research organisations involved in the "Mechanical Engineering of Biological and Bio-inspired Systems" (MEBioSys) project, CZ.02.01.01/00/22_008/0004634. This project is funded under the Operational Programme Johannes Amos Comenius (OP JAC), Excellent Research Call, administrated by the Ministry of Education, Youth and Sports of the Czech Republic. OP JAC implements the European Regional Development Fund (ERDF). The scope of this project aims to strengthen excellent research teams, enhance internationalisation and develop the institutional environment of research organisations. Exclusively non-economic activities will be carried out within the project. The period of the project implementation is from September 2023 to June 2028.









II. CONTEXT

This Memorandum is made to express common interest in establishing a long-term (multilateral) cooperation between the above-mentioned institutions. Parties conclude this Memorandum with the objectives of promoting and developing both academic and scientific cooperation in the following fields upon principles of equality and reciprocity:

- (1) Exchange of research and academic staff (including students) supporting mobility,
- (2) Scientific knowledge sharing and support of international networking,
- (3) Conducting joint research projects and organizing scientific events,
- (4) Submitting joint project proposals for funding.

III. **SCOPE OF THE MEMORANDUM**

The research agenda of the MEBioSys project consists of:

Research Programme A) Bio-inspired mechatronic systems (divided into three Sub Research Programmes and their Work Packages):

- A.1 Material design based on theoretical approaches and bio-inspiration
 - A.1.1 Theory-driven development of new alloys
 - A.1.2 Bio-inspired additively manufactured metal materials
 - A.1.3 Preparation of functional (multi)materials based on ceramics
- A.2 Biosystem-inspired superlubricity of machine elements
 - A.2.1 Mechanisms of superlubricity in biosystems
 - A.2.2 Bio-inspired lubrication systems with potential for industrial applications
- A.3 Smart material structures and bio-inspired metamaterial systems
 - A.3.1 Printing optimization of complex geometric material structures
 - A.3.2 Metamaterial structures based on a multidisciplinary model

Research Programme B) Mechatronic systems for biomedical applications (divided into three Sub Research Programmes and their Work Packages):

- B.1 Hybrid and composite materials
 - B.1.1 Metal composite materials
 - B.1.2 Polymer-metal hybrid and composite biomaterials
 - B.1.3 Depot biomaterials for local drug release
- B.2 Modification and nanostructuring of biomaterial surfaces
 - B.2.1 Laser-induced micro-/nano-excitation and thermodiagnostics
 - B.2.2 Bioactive functionalization and surface characterization
- B.3 Mechatronic systems for biomedical engineering
 - B.3.1 Mechatronic systems for biomedical engineering

In order to achieve the objectives of this Memorandum, the Parties may take the following actions:

a) Engage in a dialogue on topics of common interest in regard to the project's research agenda in particular in the following selected areas: i) Preparation of functional (multi)materials based on ceramics, ii) Modelling and simulation analysis of (multi)material structures with advanced properties; iii) Additive manufacturing of advanced ceramic and metamaterial structures; iv) Experimental characterization of metamaterials for biomedical engineering.



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- b) Establish a framework to facilitate a cooperative exchange of technical requirements, science and technology information, and promote collaboration between the Parties;
- c) Support the mobility of professionals and students for the purpose of sharing practical knowledge and experience, including support for the preparation of applications in international grant competitions up to the submission of joint scientific projects;
- d) Encourage the exchange of strategic information and good practices, e.g. information on emerging issues, future challenges and opportunities;
- e) Conduct joint scientific events, workshops, and conferences to exchange knowledge;
- f) Participate in the execution of ongoing programs, projects and related activities of mutual interest to the Parties;
- g) Support the training of academic staff through the exchange of personnel;
- h) Identify any other action that they deem appropriate to achieve the objectives of this Memorandum.

IV. CONTACTS

Each Party will appoint a person to serve as the official contact. Should there be any change in the contact person, the Party of change will notify the other Party without delay. The initial appointees of each Party are:

Name	Organization/Party	Email
•••••	Institute of Physics of Materials CAS	
	Brno University of Technology	
	Slovak University of Technology	

V. FINAL PROVISIONS

On the basis of this Memorandum, Parties interested in particular cooperation can conclude specific agreements.

This Memorandum does not give rise to any financial obligation. For the avoidance of doubt, this Memorandum is signed as an expression of interest and commitment of the Parties but is not intended to create any legal obligation between the Parties.

The Parties will extend to each other the most favourable treatment.



This Memorandum is conducted for an indefinite period. The Memorandum shall come into effect upon signature of this document by authorized representatives of the Parties and shall remain in force until terminated by either Party by notification. The notification for termination of the Memorandum shall be made not later than three months prior the termination date.

The present Memorandum is written in English in 6(six) identical and equally valid copies - two for each Party.

Date:

Date:

Assoc. Prof. Jiří Hlinka Dean Faculty of Mechanical Engineering Brno University of Technology Prof. Mgr. Tomáš Kruml, CSc. Director Institute of Physics of Materials Czech Academy of Sciences

Date:

Prof. Anton Gatial, DSc. Dean Faculty of Chemical and Food Technology Slovak University of Technology







