

Zmluva o poskytnutí finančných prostriedkov na čiastočné pokrytie cestovných a stravných náhrad súvisiacich s výskumno-vzdelávacím pobytom doktorandov

č. 03/STT/2022

medzi

inštitúciou

1. Trenčianska univerzita Alexandra Dubčeka v Trenčíne

Centrum pre funkčné a povrchovo funkcionalizované sklá (FunGlass)

Študentská 2, 911 50 Trenčín

Slovenská republika,

ktorú za účelom podpisu zmluvy zastupuje: doc. Ing. Jozef Habánik, PhD., rektor a vo veci zmluvných podmienok: prof. Ing. Dušan Galusek, DrSc., riaditeľ Centra FunGlass

a

účastníkom (študentom)

2. ERTUGRUL VARLIK

Stupeň vzdelávania: EQF level 8 – doktorandský

Študent s: finančnou podporou inštitúcie JECS Trust

Prehlásenie účastníka o bankovom účte:

Prehlasujem na svoju česť, že držiteľom bankového účtu, na ktorý budú prevedené finančné prostriedky je:

Držiteľ bankového účtu: Ertugrul Varlik

Zmluvné strany sa dohodli na osobitných podmienkach a prílohách, ktoré tvoria neoddeliteľnú súčasť tejto zmluvy.

Popis činnosti:

Predmetom výskumno-vzdelávacieho pobytu doktoranda sú aktivity definované v rámci grantovej zmluvy č. 2022298 uzatvorenej medzi JECS Trust, Gouverneur Cornez 4, 7000 Mons, Belgicko a Centrom FunGlass Trenčianskej univerzity Alexandra Dubčeka v Trenčíne, Študentská 2, 911 50 Trenčín s prílohou č. 1 *Stay of Ertugrul Varlik at EMPA – Boron and Cobalt co-doped 3D scaffolds for bone tissue regeneration based on 45S5 bioactive glass* (ďalej Grantová zmluva č. 2022298).

Pobyt je realizovaný na partnerskej inštitúcii Centra FunGlass:

Názov: EMPA – Swiss Federal Laboratories for Materials Science and Technology

Adresa: Überlandstrasse 129, Dübendorf, 8600 Switzerland

Koordinátor: Gurdial Blugan, Ph.D.

Príloha I Grantová zmluva č. 2022298 uzatvorená medzi JECS Trust a Centrom FunGlass Trenčianskej univerzity Alexandra Dubčeka v Trenčíne, Študentská 2, 911 50 Trenčín s prílohou č. 1 *Stay of Ertugrul Varlik at EMPA – Boron and Cobalt co-doped 3D scaffolds for bone tissue regeneration based on 45S5 bioactive glass*.

OSOBITNÉ PODMIENKY

ČLÁNOK 1 – PREDMET ZMLUVY

- 1.1 Inštitúcia poskytne účastníkovi finančné prostriedky na úhradu cestovných a stravných náhrad súvisiacich s realizáciou mobilného výskumno-vzdelávacieho pobytu v zmysle Prílohy I.
- 1.2 Účastník **súhlasí s podporou** stanovenou v článku 3.1 a **zaväzuje sa realizovať aktivity v súlade s popisom uvedeným v Grantovej zmluve č. 2022298 (Príloha I).**
- 1.3 Akékoľvek dodatky k tejto zmluve, vrátane zmien v dátumoch začiatku a ukončenia pobytu, musia byť vyžiadané a odsúhlasené oboma stranami prostredníctvom oficiálneho oznámenia listom alebo e-mailom.

ČLÁNOK 2 – PLATNOSŤ ZMLUVY A TRVANIE POBYTU

- 2.1 Zmluva medzi účastníkom a TnUAD sa pripravuje na základe platnej Grantovej zmluvy podpísanej všetkými zúčastnenými stranami: inštitúciou JECS Trust, účastníkom a TnUAD.
- 2.2 Táto zmluva nadobúda platnosť a účinnosť dňom jej podpisu poslednou z oboch zmluvných strán.
- 2.3 Pobyt bude realizovaný v zmysle **Grantovej zmluvy č. 2022298 v maximálnej dĺžke 90 dní**. Prípadné zmeny dátumu začiatku a konca mobility účastník konzultuje s inštitúciou JECS Trust.
- 2.4 Účastník **dostane finančnú podporu zo zdrojov inštitúcie JECS Trust**.

ČLÁNOK 3 – FINANČNÝ PRÍSPEVOK

- 3.1 Výška finančného príspevku na pobyt je v zmysle Grantovej zmluvy č. 2022298 – **6 500,00 EUR**. Z toho je **1 500, 00 EUR** určených na použitie prístrojového vybavenia a spotrebného materiálu na hosťujúcej inštitúcii; pokrytie cestovných náhrad súvisiacich s realizáciou pobytu je **max. 5 000,00 EUR** a zodpovedá sume **500,00 EUR/cestovné náhrady na pobyt a 50,00 EUR na 1 deň/ stravné náhrady** (celkovo pobyt trvá max. 90 kalendárnych dní). Bližšie informácie – viď Príloha I.
- 3.2 Centrum FunGlass TnUAD v Trenčíne uhradí hosťujúcej inštitúcii príspevok v sume 1 500,00 EUR na použitie prístrojového vybavenia a spotrebného materiálu a príslušnú dokumentáciu o úhrade doloží do *Vyhlásenia o výdavkoch* požadujúceho inštitúciou JECS Trust.
- 3.3 **Podmienky vyplatenia príspevku sú definované v Článku 4 Podmienky platby.**
- 3.4 Centrum FunGlass TnUAD vyplatí účastníkovi príspevok podľa Čl. 4.1 po obdržaní Grantovej zmluvy JECS Trust podpísanej všetkými zúčastnenými stranami a obdržaní preddavku z JECS Trust na účet TnUAD.
- 3.5 V prípade, že **náklady na projekt presiahnu** dohodnutú sumu, účastníkovi **nebude poskytnutý žiadny doplatok**.
- 3.6 V prípade **prerušenia, resp. predčasného ukončenia** pobytu účastníkom, sa účastník a Centrum FunGlass riadi pravidlami financovania mobilného projektu (Príloha I) inštitúcie JECS Trust. V prípade podmienky vrátenia príspevku alebo jeho alikvotnej čiastky, účastník je povinný vrátiť danú čiastku na účet TnUAD do 10 dní od rozhodnutia zo strany Centra FunGlass TnUAD v Trenčíne.

ČLÁNOK 4 – PODMIENKY PLATBY

- 4.1 Inštitúcia vyplatí so súhlasom účastníka jednu splátku vo výške **500,00 EUR na cestovné náhrady a 3 000,00 EUR na stravné náhrady, t. j. spolu 3 500,00 EUR** (čo predstavuje spolu 70% príspevku na uvedený pobyt) účastníkovi najneskôr **do 3. októbra 2022**.
- 4.2 Vyplatenie **doplatku účastníkovi vo výške max. 1 500,00 EUR** (čo predstavuje 30% príspevku na uvedený pobyt) bude uskutočnené **na základe uznania *Vyhlásenia o výdavkoch, Správy a Krátkej správy o mobilnom projekte* inštitúciou JECS Trust tak ako je uvedené v Grantovej zmluve č. 2022298.**
- 4.3 **Účastník dodá požadované dokumenty a doklad k realizovanému pobytu** inštitúcii JECS Trust tak ako je uvedené v Grantovej zmluve č. 2022298.
- 4.4 TnUAD v Trenčíne má 10 pracovných dní na vyplatenie **doplatku účastníkovi** odo dňa doručenia doplatku z inštitúcie JECS Trust na účet TnUAD.
- 4.5 V prípade neuznania *Vyhlásenia o výdavkoch, Správy* alebo *Krátkej správy o mobilnom projekte* inštitúciou JECS Trust sa účastník a Centrum FunGlass TnUAD v Trenčíne riadia usmerneniami inštitúcie JECS Trust.

ČLÁNOK 5 – POISTENIE

- 5.1 Osobou zodpovednou za relevantné poistenie v krajine partnerskej inštitúcie je účastník.
- 5.2 Centrum FunGlass neposkytuje účastníkovi príspevok na poistenie.
- 5.3 Poistenie závisí od právnych a administratívnych ustanovení príslušnej prijímajúcej krajiny a inštitúcie.

ČLÁNOK 6 – JURISDIKCIA A PRÍSLUŠNOSŤ SÚDU

- 6.1 Zmluva o poskytnutí finančnej podpory sa riadi právnym poriadkom Slovenskej republiky a Európskej únie.
- 6.2 O nezhodách medzi inštitúciou a účastníkom, ktoré sa týkajú interpretácie, použitia a platnosti zmluvy a ktoré nie je možné vyriešiť vzájomnou dohodou, rozhoduje príslušný súd v súlade so zákonom.

PODPISY

Za účastníka



Ertugrul Varlik

Za TnUAD v Trenčíne



Doc. Ing. Jozef Habánik, PhD.



Secretariat – C/O ECerS
Avenue Gouverneur Cornez, 4
B-7000 MONS (Belgium)

Contract 2022298

This contract is established following the decision of the JECS Trust Board of 9th July 2022. It is entered into by and between:

JECS Trust, a trust incorporated under the laws of Belgium, and having its registered office at avenue Gouverneur Cornez 4, 7000 Mons, Belgium.

and

The **Alexander Dubček University of Trenčín - FunGlass – Centre for Functional and Surface Functionalized Glass** incorporated under the laws of Slovakia, and having its registered office at **Študentská 2, 911 50 Trenčín**.

Purpose of the Contract

The JECS Trust will provide funds in connection with a project “**Stay of Ertuğrul Varlık at EMPA - Boron and Cobalt co-doped 3D scaffolds for bone tissue regeneration based on 45S5 bioactive glass**”, defined in Annex 1 hereto (the "Project").

The JECS Trust and the **Alexander Dubček University of Trenčín - FunGlass – Centre for Functional and Surface Functionalized Glass** are hereinafter referred to as the "Trust" and the "Receiving Party", as the case may be. JECS Trust and the **Alexander Dubček University of Trenčín - FunGlass – Centre for Functional and Surface Functionalized Glass** are hereinafter collectively referred to as the "Parties".

Now, therefore, the Parties agree as follows:

1. Focus

The main objective in the expenditure of Trust money is the promotion of student/young researcher activities, but not exclusively so. For all such activities, the **Journal of the European Ceramic Society (JECS)** or **Open Ceramics** are to be consulted in respect to any plans for publication.

2. Responsibility

The responsibility for the organisation of the project lies with the Receiving Party. Any financial or other claim arising from the project is the concern of the Receiving Party.

3. Advertising

Any paper/advertising/etc. in relation with the project must acknowledge the contribution of the Trust. The logo of the Trust must be displayed or, if no such illustration is possible, a written reference must be made to the Trust contribution.

4. Budget

In the present contract, the maximum amount allowed for the project will be of **6500 €**. This sum is based on the budget defined in Annex 2 as prepared by the Receiving Party and agreed by the Trust.

If the receiving party asks for it, 50 % of that sum can be given in advanced, 4 months before the beginning of the project.

No supplement will be given if the project costs exceed the agreed sum.



5. Expense Statement

At the end of the project, the Receiving Party must complete an Expense Statement. A single table is to be filled out for the entire project and completed with proofs of the actual expenses incurred, which must be within the sums indicated in Annex 2. An Expense Statement that is not signed or that is not accompanied by original documents or, if not, by certified photocopies cannot be accepted.

Funds will be available for only 60 days after the end of the project. It is therefore essential to turn in the Expense Statement in a timely manner. Late submission will result in no reimbursement.

If, for any reason, the project for which the fund is provided can not take place, the sums allowed in advance must be reimbursed as soon as the cancellation is confirmed. Any sum already engaged and not reimbursable by the Receiving Party must be explained in an Expense Statement and agreed by the Trust.

6. Report

In addition to the Expense Statement, the Receiving Party must write a full report presenting the achievements made for the projects. This report must be signed and send with the expense statement, at the end of the project. A short summary following the template available is also required on maximum one A4 page.

7. Publication:

It is a condition of accepting this contract that any papers related to the sponsored project will be submitted to the new ECerS Open Access Journal: Open Ceramics. If the paper is accepted by **Open Ceramics**, then the JECS Trust will pay the Article Publication Charge.

Please use the following sentence to acknowledge the JECS Trust when submitting your paper(s) to **Open Ceramics**: *"The authors are grateful to the JECS Trust for funding [the visit of xx to xx etc.] (Contract No. xx)."*

The determination of whether a paper is compatible with the content of **Open Ceramics** will be made by the Senior/Chief Editor of Open Ceramics. If **Open Ceramics** declines to publish them, the authors are then free to publish them in a different journal of their choice.

8. Decision:

In all cases, the decisions of the Trust shall be final.

9. Disputes

This Contract shall be governed by Belgian law. All disputes arising in connection with this Contract shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by 1 (one) arbitrator appointed in accordance with such Rules. The arbitration shall be held in Mons, Belgium, and shall be conducted in English.

Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction.

In witness whereof, the Parties have executed 2 (two) original copies of this Contract on ____, each Party acknowledging receipt of one original copy.

JECS Trust

By _____
Name: Prof. Jon Binner
Title: President

Alexander Dubček University of Trenčín -
FunGlass – Centre for Functional and Surface
Functionalized Glass _____

By _____
Name: Dušan Galusek / 911 50 Trenčín
Title: Director

Annex 1 – The project

Name: Prof. Anne Leriche
Title: Secretary

Name: Ertuğrul Varlık
Title: Applicant

Stay of Ertuğrul Varlık at EMPA

Boron and Cobalt co-doped 3D scaffolds for bone tissue regeneration based on 45S5 bioactive glass - 01/09/2022 to 30/11/2022 - EMPA, Laboratory of High performance ceramics, Switzerland

This research proposal is focused on the fabrication and characterization of biomedical three-dimensional (3D) scaffolds for bone tissue engineering applications (BTEAs) by Co (cobalt) and B (boron) co-doped 45S5 bioactive glass (BGs) particles. Bone, found in two different types, compact and cancellous in the body, is the second most transplanted tissue worldwide. The current limitations in clinical treatment methods such as infection or transplant rejection have caused the opening of new research lines on BTEAs. The advancement of bioactive glasses in the structure of a three dimensional (3D) scaffold, has been considered a promising way to overcome the limitations mentioned above. BGs have been extensively studied in the last few decades in BTEAs due to their osteoinductive capabilities in tissue adhesion, proliferation, and migration. As opposed, the effect of BGs on mechanical strength and neovascularization (blood vessel growth) in 3D scaffolds is still under investigation. Silicate-based BGs such as 45S5, S53P4, and some of their single or co doped versions are considered well-established glass compositions. They can stimulate and regulate the genes such as vascular endothelial growth factor (VEGF) related to angiogenesis. On one hand, recent studies concluded that Co could generate a hypoxic atmosphere, thus stabilizing hypoxia-inducible factor 1-alpha (HIF-1a), cascading the activation of VEGF. On the other hand, B activates the mitogen-activated protein kinase (MAPK) signalling pathway to enhance the secretion of VEGF, interleukin 6 (IL-6), and the basic-fibroblast growth factor (bFGF), which, as pro-angiogenic cytokines, stimulate the angiogenic response. In addition to all, it was reported that the scaffolds prepared with the B doped BGs showed similar mechanical properties to the human bone. In our previous study, we measured the secretion of VEGF from ST-2 cells to evaluate the synergy of B and Co co-doped 45S5 bioactive glass powder on angiogenesis promotion for bone regeneration. The revealed results verified that the B and Co co-doped BGs, dose-dependently, increase 3 secretion of VEGF from ST-2 cells compared with non-doped and single doped bioactive glass. In the proposed research, B and Co single and co-doped 45S5 BGs will be used in 3D scaffold fabrication, focused on the enhancement of mechanical response and the effect of crystallization occurring during the thermal treatment on the biological activity of the scaffolds. The 3D scaffolds present a suitable backdrop for viable invading cells to colonize easily when the right features are fulfilled. Cell activity within a scaffold is mainly dependent on the chemical compositions and architecture of the scaffold. Therefore, some established scaffold properties such as porosity, pore size and interconnectivity, pore distribution have been considered tremendously critical scaffold parameters on the way to becoming living tissue. For instance, lowered pore size restricts continuous transport of the needed certain nutrients in time to the places where the cell multiplication takes place is crucial. Up to now, many conventional scaffold fabrication techniques have been investigated by researchers such as electrospinning, particle leaching, foaming, and freeze-drying. However, studies stated that scaffolds fabricated with the utilization of additive manufacturing (AM) are found to be more compatible with the human body due to AM's controllable printing parameters.

Annex 2 – Budget in €

(a) Costs associated with the research. Please consult the guidelines before completion.	1.500 €
Use of facilities and consumables at host institution: Maximum 500€/month.	1.500 €
Exceptional costs. Awarded only with full justification.	
(b) Travel/ subsistence costs:	5.000 €
Travel	500 €
Subsistence 50€/day	4.500 €

Total amount allowed by the JECS Trust: 6500 €

Bank account details:

Name of the bank account holder:	Alexander Dubček University of Trenčín
IBAN:	
BIC:	