

Announcement of a RESEARCH GRANT (BI)

Reference: IIA – LIC-3 – Forest 4 Future

Competition is open for the award of a Research Grant, under the project " **Forest 4 Future / F4F** ", Nº Cand Centro-08-5864-FSE-000031, of the Polytechnic Institute of Coimbra, co-financed by the **EAFRD - European Agricultural Fund for Rural Development**, through the Portugal Partnership Agreement 2020, **CENTRO2020 Programme**, under the following conditions:

The activities to be executed are the following:

- 1) Carpophores harvesting and subsequent establishment of mycorrhizae in vitro, nursery and field conditions.
- 2) Micropropagation of selected forest species.
- 3) Establishing field trials in complete and randomized blocks and monitoring the installed trials.
- 4) Carrying out maintenance operations in the nursery and in the laboratory (preparation of culture media, multiplication of cultures and of mycelium from different strains of mycorrhizal fungi);
- 5) Validation of the persistence of mycorrhizal fungi in the field and analysis of the progeny of plant material: field collection of material (roots, leaves), preparation in the laboratory, DNA extraction, analysis of the persistence of mycorrhizal fungi using specific molecular markers and SSR for plants, establishment of qPCR reactions and later, if necessary, analysis in agarose gel.
- 6) Data processing and analysis of results using statistical software.

Generic scientific area: *Bioengineering, Biotechnology and Biochemistry*

Specific scientific area: *Biotechnology*

Admission requirements:

According to Article 3 of the Research Fellowship Regulation of the Polytechnic Institute of Coimbra approved through Dispatch No. 5963/2020, published in "*Diário da República*", 2nd serie of June 1, 2020, candidates must:

- possess the graduated degree in the field of Biotechnology;
- prove that they are enrolled in a master's or in an integrated master's degree in the field Forest Sciences or enrolled in non-conferring courses of academic degree integrated in the educational project of a higher education institution.
- have experience in the Functional Contents of the Operation and Domain in the application of techniques and protocols in both the laboratory and field:
 - a. Carpophores harvesting and subsequent establishment of mycorrhizae in vitro, nursery and field conditions.
 - b. Micropropagation of selected forest species.
 - c. Establishing field trials in complete and randomized blocks and monitoring the installed trials.
 - d. Carrying out maintenance operations in the nursery and in the laboratory (preparation of culture media, multiplication of cultures and of mycelium from different strains of mycorrhizal fungi);
 - e. Validation of the persistence of mycorrhizal fungi in the field and analysis of the progeny of plant material: field collection of material (roots, leaves), preparation in the laboratory, DNA extraction,

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analysis of the persistence of mycorrhizal fungi using specific molecular markers and SSR for plants, establishment of qPCR reactions and later, if necessary, analysis in agarose gel.

- f. Data processing and analysis of results using statistical software.

Work plan:

The work plan will be to develop:

- In the field: collection and transport of plant material and carpophores; set up and monitoring of previously established field trials.
- In the nursery: sowing of selected plant material and subsequent hardening; ex vitro mycorrhization; acclimatization of micropropagated plants; nursery maintenance operations.
- In the micropropagation laboratory: multiplication of cultures of selected clones and mycorrhizal fungi strains; in vitro mycorrhization; preparation and sterilization of culture media.
- In the Valoren laboratory: washing and preparation of vegetal material (roots and leaves); DNA extraction; qPCR reactions, with specific molecular markers (mycorrhizal fungi or SSR, for plants); when necessary, agarose gel set up.
- In the office: analysis and statistical treatment of results; and dissemination of results.

Objectives to be accomplished by the candidate:

- 1) Harvest of carpophores and subsequent establishment of mycorrhizae in vitro conditions, in the nursery and in the field;
- 2) Multiplication of mycorrhizal fungi cultures, for the production of mycorrhized plants (in vitro and ex vitro), more resilient to climate change; Multiplication of selected plants (micropropagation and nursery);
- 3) Monitoring of in vitro, nursery and field trials set up in complete and randomized blocks;
- 4) Validation of the persistence of the mycorrhizae in the field and analysis of the progeny of the plant material by molecular genetic techniques.
- 5) Analysis and statistical treatment of results and dissemination of results.

Duration of the scholarship:

The scholarship will last for 6 months, under exclusivity, according to the Research Grant Regulation of the Polytechnic Institute of Coimbra, through Dispatch No. 5963/2020, published in “*Diário da República*”, 2nd serie of June 1, 2020. The scholarship will last for the period from January 2023 to Jun 30, 2023, not exceeding the end date of the project (June 30, 2023).

Monthly Maintenance Allowance:

The Monthly Maintenance Allowance corresponds to the basic value of 875.98 euros per month, according to the table of grants of FCT, I.P. in the country (Appendix I - Table of monthly maintenance allowances for the FCT I.P. Research Grant Regulation): <http://www.fct.pt/apoios/bolsas/valores>. with the payment being made monthly by bank transfer.

To this amount is added the Voluntary Social Insurance corresponding to the 1st tier, if the applicant chooses to register, and Personal Accident Insurance.

Host institution and scientific supervision:

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The work will be carried out at ESAC – Coimbra Polytechnic Agriculture School, under the scientific supervision of Professor Maria Filomena Figueiredo Nazaré Gomes.

Evaluation criteria:

The evaluation of the applications will focus on the merit of the candidate, by applying the following parameters according to the following formula:

$$\text{Assigned note (from 0 to 100)} = (0.25 * C1 + 0.25 * C2 + 0.25 * C3 + 0.25 * C4) * F1 * F2 * F3$$

C1 - Experience in the establishment of mycorrhizae in vitro and ex vitro conditions (nursery and field);

C2 - Experience in multiplication in vitro conditions of woody species and mycelium; in harvesting plant material, fruit & seed processing and nursery plant production;

C3 - Experience in validating the persistence of mycorrhizae in the field and analyzing the progeny of plant material by molecular genetic techniques, using qPCR.

C4 - Experience in the establishment of field trials in complete and randomized blocks and in the statistical treatment of results.

The weighting factors F1, F2 and F3 are defined as follows:

F1 - Area of Study / Training:

F1 = 1.0 in the areas Degree in the field of Biotechnology

F1 = 0,5 for Graduation in the area of Forest Sciences and Biochemistry

F1 = 0,1 for Graduation in other areas.

F2 - Experience in the application of techniques and protocols of the activities to be performed and mentioned above:

F2 = 1.0 for work experience of more than 24 months;

F2 = 0.5 for work experience over 12 months;

F2 = 0.4 for curricular internship experience equal or superior to 6 months;

F2 = 0.1 for training within the curricular area.

F3 - Driving license and knowledge of the Portuguese language

F3 = 1.0 with driving license and knowledge of the Portuguese language

F3 = 0.3 with knowledge of the Portuguese language, but without a driving license

F3 = 0.1 with a driving license and no knowledge of the Portuguese language

Composition of the Jury:

The Selection Panel is composed by the following elements:

President: Doctor Maria Filomena Figueiredo Nazaré Gomes; Effective members: Doctor Isabel Maria Nunes da Rosa Dias Duarte; Doctor Maria Manuel Balseiro Vidal; Substitute member: Doctor Joaquim Manuel Sande Silva and Doctor Teresa Maria Pinto Coelho Amado Vasconcelos.

Documents to be submitted:

Applications should include the following documents:

- Elements of the National Identity Card/Citizen Card/Passport/Visa/Title of Residence; Tax Identification Number (NIF);

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- Documents proving that the candidate meets the conditions defined in the admission requirements, namely, 1) certificate of qualifications and 2) certificate of enrollment in Masters in Biotechnology or in courses not leading to an academic degree integrated in the educational project from an institution of higher education;
- *Curriculum Vitae* of the candidate, in Portuguese or in English;
- Motivation letter, in Portuguese or in English;
- Letters of reference or recommendation, including the contact details of the authors of the recommendations;
- The above-mentioned documents, to be submitted as an application, must be submitted by the deadline set forth in this announcement.

Deadline for receipt of applications:

The call is open during 10 working days from 28/12/2022 to 10/01/2023 (23:00 – Europe/London).

Applications must be sent exclusively by e-mail to bolsas.investig@ipc.pt, with the subject “**IIA – LIC-3 – Forest 4 Future**”.

Applicable legislation and regulations:

Research Fellowship Holder Statutes, approved by Law No. 40/2004, of August 18 (Statute of the Scientific Research Fellow) amended and republished by Decree-Law No. 202/2012, of August 27, updated by: Decree-Law No. 233/2012, Law No. 12/2013, Decree-Law No. 89/2013, and Decree-Law No. 123/2019; the Regulation of Scholarships and Research of the Foundation for Science and Technology in force (Regulation No. 950/2019, of December 16, amended by Regulation No. 643/2021 of July 14) and the Research Grantee Regulation of the Polytechnic Institute of Coimbra, approved through dispatch No. 5963/2020, published in “*Diário da República*”, 2nd *serie* of June 1, 2020.

Communication of results:

Results of the evaluation will be published no later than 90 working days after the deadline for submission of applications.

Results will be listed by ordered alphabetically, posted in the showcase allocated to ESAC Human Resources, in the building B of Coimbra Polytechnic Agriculture School, all candidates are notified, for the purposes of prior hearing of interested parties, by e-mail.

If the result is unfavorable to the granting of the requested scholarship, the candidates have a period of 10 working days, after the disclosure of results, to give their opinion, wanting, in the pre-hearing of interested parties, in accordance with the provisions of the Code of Administrative Procedure.

Where the number of interested parties to be heard is so high that the prior hearing of interested parties becomes impractical, it is replaced by public consultation, carried out in accordance with the terms and within the time limits set out in Article 37(2) of Decree-Law No. 63/2019 of May 16.

The final decision shall be taken no later than 60 working days after the conclusion of the prior hearing of interested parties or public consultation.

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The final decision can be contested, having 15 working days for this purpose, by sending to the President of the Jury the corresponding claim or appeal to the President of the IPC within 30 working days, both after notification.

For more information contact: the President of the Jury, by e-mail: fgomes@esac.pt.

The following annexes contain the models of the grant contract and the final reports to be drawn up by the grantee and the scientific advisor in accordance with the IPC Regulation (DR, No. 106 of 1 June 2020).

Coimbra, December 12th, 2022

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ANNEX I - Contrato de bolsa de investigação

Entre as partes abaixo designadas:

1.º Instituto Politécnico de Coimbra (IPC), com sede na Rua da Misericórdia, Lagar dos Cortiços — S. Martinho do Bispo, 3045-093 Coimbra, com o número de identificação de pessoa coletiva 600027350, representada neste ato por ..., na qualidade de Presidente, adiante designada por primeiro outorgante; e

2.º ... (nome do bolseiro), com o ... (documento de identificação) n.º ..., válido até ..., contribuinte n.º ..., beneficiário da Segurança Social n.º ... (se aplicável), residente em ..., adiante designado por segundo outorgante;

É celebrado de boa-fé, e reciprocamente aceite, o presente contrato de bolsa de investigação, ao abrigo do Regulamento de Bolseiro de Investigação do IPC, que se rege pelas cláusulas seguintes:

Cláusula 1.ª

O primeiro outorgante compromete-se a conceder ao segundo outorgante uma bolsa de investigação de (BII, BI e BPD) com a referência... pelo período de... meses, eventualmente renovável nos termos previsto no Regulamento de Bolseiro de Investigação do IPC.

Cláusula 2.ª

O segundo outorgante obriga-se a realizar o plano de atividades, conforme descrito no processo de candidatura, a partir da data de início nele referida e em regime de dedicação exclusiva, nos termos do artigo 19.º do Regulamento de Bolseiro de Investigação do IPC.

Cláusula 3.ª

O segundo outorgante realiza os trabalhos na ... (UO/UOI), que funciona como entidade acolhedora/entidade financiadora, tendo como orientador (a) científico o Doutor (a) ...

Cláusula 4.ª

O montante da bolsa é de... € mensais, a pagar pelo 1.º outorgante por transferência bancária.

Cláusula 5.ª

O primeiro outorgante poderá rescindir o presente contrato nos casos a seguir indicados:

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- a) Incumprimento grave e reiterado dos deveres do segundo outorgante, por causa que lhe seja imputável, designadamente não atingir os objetivos estabelecidos no plano de atividades aprovado;
- b) Quando se verificar que o bolsheiro prestou falsas declarações.

Cláusula 6.ª

Sem prejuízo do disposto na cláusula anterior, este contrato cessa automaticamente com a conclusão do plano de atividades, com o decurso do prazo pelo qual a bolsa é atribuída, com a revogação por mútuo acordo ou alteração das circunstâncias, com a constituição de relação jurídico-laboral com a entidade acolhedora.

Cláusula 7.ª

O bolsheiro tem de apresentar até 60 dias após o termo da bolsa um relatório final das atividades desenvolvidas, incluindo as eventuais comunicações e publicações resultantes da atividade como bolsheiro.

Cláusula 8.ª

É subsidiariamente aplicável o Estatuto de Bolsheiro de Investigação, aprovado pela Lei n.º 40/2004, de 18 de agosto, na sua atual redação, e o Regulamento de Bolsas de Investigação do IPC.

Cláusula 9.ª

Convenciona-se, por acordo entre as partes, que em caso de necessidade e para dirimir todas as questões emergentes do presente contrato será competente o Tribunal da Comarca de Coimbra, com expressa renúncia a qualquer outro.

Cláusula 10.ª

Qualquer alteração a introduzir no contrato no decurso da sua execução ou prorrogação do mesmo será objeto de acordo prévio.

Cláusula 11.ª

As partes outorgantes declaram estar de acordo com o clausulado neste contrato, que é feito em duplicado, todas as cópias valendo como originais, ficando um exemplar na posse de cada um dos outorgantes.

Coimbra, ... de ... de ...

O Primeiro Outorgante, ...

O Segundo Outorgante, ...

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ANNEX II - Final report to be prepared by the grantee

Exmo. Sr. Presidente do Politécnico de Coimbra

... (nome completo do Bolseiro), com o ... (documento de identificação) n.o ..., vem, de acordo com o artigo 25.o do Regulamento de Bolseiro de Investigação do Instituto Politécnico de Coimbra, apresentar o seu Relatório Final referente à Bolsa de ... (identificação do tipo de Bolsa), na área de ... (identificação da área da Bolsa), cujos trabalhos foram desenvolvidos no (a) ... (entidade acolhedora onde foram desenvolvidos os trabalhos), e tendo sido coordenado pelo Ex. Prof. (a) doutor (a) ...

(Neste documento serão focados os aspetos a seguir referidos)

- 1 — Apresentação do objeto da Bolsa e dos respetivos objetivos.
- 2 — Identificação cronológica dos trabalhos desenvolvidos no âmbito da Bolsa supra referenciada.
- 3 — Apresentação dos resultados alcançados.
- 4 — Autoavaliação do Bolseiro.

Anexos a apresentar: Comunicações e publicações resultantes da atividade como bolseiro.

Local, ... de ... de ...,

Assinatura do Bolseiro

Cofinanciado por:



ANNEX III - Final report to be prepared by the Scientific Advisor

Ex.mos (as) Senhores (as)

No âmbito da Bolsa de ... (identificação do tipo de Bolsa), na área de ... (identificação da área da Bolsa), desenvolvida pelo Bolseiro... (identificação do Bolseiro), venho, de acordo com o artigo 25.º do Regulamento de Bolseiro de Investigação do Politécnico de Coimbra, apresentar o devido Relatório Final de Avaliação.

(Neste documento serão focados os aspetos a seguir referidos)

- 1 — Análise crítica do trabalho desenvolvido pelo Bolseiro.
- 2 — Avaliação final do trabalho desenvolvido, com referência expressa aos indicadores relativos aos critérios de avaliação definidos no artigo 17.o do Regulamento.

Local, ... de ... de ...,

Assinatura do Orientador Científico

Cofinanciado por:

