

OFFICIAL CALL FOR A PHD FELLOWSHIP

MINISTRY OF SCIENCE AND INNOVATION – SPAIN FPI PROGRAM - AGENCIA ESTATAL DE INVESTIGACIÓN

1. Scope of application

a. General thematic research line

This PhD research is linked with the improvement of spray application techniques in vineyard and olive groves, including the use of new technologies and precision agriculture. The overall aim of this project is to prove the benefits of smart spraying for a sustainable pesticide use in vineyards and olive groves, by maintaining the spraying efficacy while reducing both environmental and economic costs. Results will promote the implementation of Best Management Practices through the use of new technologies for data acquisition, processing and communication

b. Project objectives

- To evaluate different remote technologies to characterize the vegetation in vineyard and olive crops in their different plantation and training systems.
- To characterize the vegetation by means of remote sensors on board drones, satellites and field robots.
- To develop image analysis methodologies to extract vegetation parameters at real time.
- Development of variable rate application tools for pesticides based on vegetation maps

c. Supervisors and workplace

Prof. Emilio Gil (Unit of Agricultural Machinery UMA-UPC) and Dr Fran Garcia (Unit of Agricultural Machinery UMA-UPC).

The workplace where the research activity will be developed is within the facilities of the Escola Superior d'Agricultura de Barcelona-ESAB (<https://esab.upc.edu/en>), Universitat Politècnica de Catalunya, in Baix Llobregat Campus), and primarily in the laboratories that the Unit of Agricultural Machinery has in the Agropolis campus (Viladecans) (<https://uma.deab.upc.edu/en>). The activities that will be developed during the PhD include field trials that will be carried out in different locations in Spain.

2. Requisites for applicants

- 2.1. The candidate must be enrolled in a doctoral program or be in a position to do so (Undergraduate Degree + 60 Official ECTS Master) at the time of signing the contract.
- 2.2. Not to have a PhD
- 2.3. Not having started a predoctoral grant
- 2.4. Not having held a predoctoral contract for a duration greater than 12 months

3. General conditions

This PhD fellowship is linked to the research project PIVOS – SMART SPRAYING FOR SUSTAINABLE VINEYARD AND OLIVE GROVE (PID2019-104289RB-C41) coordinated by Prof. Emilio Gil, head of Unit of Agricultural Machinery of Polytechnic University of Catalonia, Spain and has a duration of 4 years starting from the signature of the contract.

The economic remuneration is subject to the terms of the FPI scholarships of the Ministry of Science and Innovation - State Agency for Innovation which is established at € 16,250 gross per year for each of the first two annuities, € 17,410 for the third year and € 21,760 for the fourth annuity.

4. Applications

The interested parties should conduct the application through the official applicative of the Ministry of Science and Innovation - State Agency for Innovation webpage at: [Aid for pre-doc contracts for the training of doctors 2019](#). For further information please refer to [Administrative questions](#) or [Ayudas para contratos pre doctorales para la formación de doctores 2020](#). The period for submitting applications is from **13/10/2020** to **27/10/2020** (14:00 peninsular time).

5. Contact

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