

Joint PhD position available

Joint PhD research on the role of active silicon (Si) transport from soil to plant is offered by the Institute of Plant Physiology and Genetics at the Bulgarian Academy of Sciences, Sofia, BULGARIA and Research and Innovation Centre at the Fondazione Edmund Mach, San Michele all'Adige (TN), ITALY.

Work locations: Institute of Plant Physiology and Genetics ([Institute of Plant Physiology and Genetics – BAS](#)), Bulgaria and Research and Innovation Centre ([Fondazione Edmund Mach](#)), Italy.

Project description: Silicon (Si) is an abundant element in the earth's crust, which alleviates both abiotic and biotic stresses by improving water use efficiency, antioxidant defense systems, and photosynthesis. The aim of the project is to investigate the role of active Si transport in the evolution of the different capacity to accumulate Si existing among dicotyledon plants and its potential impact on the biogeochemical cycle of Si. Two plant species (*Fagus sylvatica* and *Solanum lycopersicum*) contrasting in their Si accumulation capacity will be used to develop experimental models suitable to functionally and quantitatively dissect the roles of Lsi2-like transporters in the Si:C interdependence at the soil-plant level.

Research field: Biological Sciences, Biochemistry, Molecular Biology, Plant Physiology, Functional Genomics, Earth Science

Mission of the successful candidate: (1) characterization of the *Lsi2* gene family; (2) determination of the enzymatic activity of the selected *Lsi2* genes; (3) development of high-Si accumulating transgenic Micro-Tom tomato lines; (4) subcellular localization of the Lsi2 transporters; (5) investigation of the effect of differential Si transport capacity on soil Si content and microbiome composition; (6) physiological characterization of plants with different expression of *Lsi2* genes, their photosynthetic performance and tolerance to stress; (7) dissemination of results, preparation of progress reports, participation to manuscript preparation.

Research profile: First Stage Researcher (R1)

Type of contract: temporary

Job status: full-time

Duration: 3 years

Requirements:

- **Research field:** Life Sciences (Biology, Biotechnology, Agricultural Science, Natural Sciences or equivalent);
- **Educational level:** Master degree or equivalent;
- **Required experience:** Fundamentals of molecular biology (preferred but not compulsory), plant physiology (preferred but not compulsory);

- **Skills:** Strong background (MSc) in molecular biology, biochemistry, plant physiology; basic computer skills (Excel, Word, PowerPoint).
- **Language:** English (fluent)

We offer:

- a collaborative interdisciplinary and international research team with a dedicated mission of plant functional and evolutionary genomics and physiological phenotyping;
- specialized, modernly equipped laboratories;
- all facilities needed for offered PhD research;
- possibilities for national and international collaboration;
- support for personal development with attendance at workshops and soft skill seminars.

We welcome applications from talented and high self-motivated people able to carry out projects under supervision in a team, with good social communication and reporting skills.

Application:

Please send full application as a **single** PDF file with subject ” **ESOPS Joint PhD**” containing:

- Motivation letter including a summary of past research experience and research interest
- Short meaningful summary of Master thesis
- Transcript of records of the Master program
- *Curriculum vitae* and list of publications
- One or two contacts for reference letters

To both: claudio.varotto@fmach.it and violeta.velikova@gmail.com

Deadline:

Applications must be submitted **31st August 2025** at the latest via the electronic application.