(BL76/2026_IST-ID)

NOTICE OF THE AWARD OF FELLOWSHIPS WITHIN THE SCOPE OF R&D PROJECTS AND INSTITUTIONS

Postdoctoral research fellowship

A call is open for the award of 1 postdoctoral research fellowship, within the scope of the project DAEDALUS European Research Council Consolidator Grant (ID 101169975) IST-ID (1801P.01700.1.01.01), funded by European funds (HORIZON EUROPE), under the following conditions:

Scientific Area: Intelligent Systems, Interaction and Multimedia and Animal Biology

Admission requirements:

a) hold a doctoral degree obtained within the three years prior to the start date of the fellowship.

b) have carried out the research work leading to the award of the doctoral degree at an institution different from the host institution of the fellowship;

c) have not previously held a postdoctoral research fellowship contract with IST-ID.

Work plan: The work plan of this postdoctoral research fellowship focuses on the integrated study of the inner ear of extant and fossil animals, the preparation, conservation and analysis of Permian, Triassic and Jurassic paleontological material, the construction of an original database of head movements in tetrapods, and the development of an experimental approach to characterise inner ear fluids, namely endolymph and perilymph, combining surgical procedures, controlled sample collection, electrochemical analyses and assessment of their physical properties by passive microrheology, with the aim of deepening knowledge of vestibular morphofunction and contributing to a better understanding of the origin of endothermy throughout tetrapod evolution. The work will include literature review, technical training and methodological preparation, encompassing the comparative anatomical study of extant and extinct specimens, the use of imaging and digital reconstruction techniques, the laboratory preparation of fossils for detailed observation and analysis, the acquisition and processing of high-resolution movement data through event cameras, as well as the validation of methods for accessing the inner ear and extracting fluids under suitable conditions of quality and reproducibility. At a later stage, inner ear structures with potential functional and physiological relevance will be studied, seeking to relate their morphology to patterns of balance, hearing, metabolism and thermophysiology, while advanced computer vision algorithms will be developed and validated for the extraction and kinematic analysis of head movements, integrating these results with theoretical biomechanical models of the macromechanics of the semicircular canals. The collected endolymph and perilymph samples will be analysed to characterise their electrochemical behaviour and their viscosity and possible viscoelasticity properties, using techniques suitable for microvolumes, and the data obtained will subsequently be integrated and compared across different fluid types, experimental conditions and animal models, including within an interpretative framework applicable to extinct animals. In parallel, the paleontological material will be analysed systematically so as to integrate anatomical, phylogenetic, paleoecological, behavioural and functional information within a broad evolutionary framework. This work is expected to establish a robust methodology, generate new data on the evolution of the inner ear, on the transformations associated with the origin of endothermy, and on the relationship between behaviour, vestibular biomechanics, biophysical properties of fluids and sensory function, thereby providing a solid methodological and conceptual basis for the production of original results, the consolidation of advanced technical and analytical skills, scientific publication and the supervision of students.

Applicable legislation and regulations: Law No. 40/2004 of 18 August (Statute of the Scientific Research Fellow), in the wording given by Decree-Law No. 123/2019 of 28 August; IST-ID Research Fellowship Regulation, available at https://ist-id.pt/concursos/bolsas/ and https://dre.pt/application/file/a/127230968 .

Place of work: The work will be carried out at CERENA and CERENA's CTN of IST-ID and IT (Instituto de Telecomunicações), under the scientific supervision of Professors Ricardo Araújo and Paulo Lobato Correia.

Duration of the fellowship(s): The fellowship will have a duration of 36 months, with an expected start in June 2026. Not renewed.

Amount of the monthly maintenance allowance: The amount of the fellowship corresponds to € 1901.00, as provided for in the funding project and in the table of values set out in Annex I of the IST-ID Research Fellowship Regulation (https://ist-id.pt/concursos/bolsas/), and the payment method shall be Bank Transfer, according to the Fellow's option.

Selection methods: The selection methods to be used shall be as follows: *curriculum assessment, individual interview*, with a weighting of 50%+50%.

Composition of the Selection Panel: Prof. Ricardo Araújo, Prof. Leonardo Azevedo, Prof. Paulo Correia.

Form of publication/notification of the results: All candidates will be notified by e-mail of the Final Evaluation Result.

Deadlines and procedures for prior hearing, complaint and appeal: Following communication of the provisional list of evaluation results, candidates shall have a period of 10 working days to comment, should they so wish, within the framework of the prior hearing of interested parties, pursuant to Articles 121 et seq. of the Code of Administrative Procedure. The final decision shall be issued after analysis of the submissions presented in the prior hearing of interested parties. A complaint may be lodged against the final decision with the Selection Panel, or an appeal may be brought before the President of IST-ID, within 15 working days from the respective notification.

Application period and method of submission of applications: The call is open from May 22 until June 21, 2026.

Applications must be submitted, mandatorily, by sending the following documents: i) Form B1 - Application for a Research Fellowship (https://ist-id.pt/concursos/bolsas/), ii) *Curriculum Vitae*; iii) degree certificate; iv) motivation letter

These documents must be sent by e-mail to: ricardo.araujo@tecnico.ulisboa.pt and paulo.lobato.correia@tecnico.ulisboa.pt