



The University of Pisa announces public selection procedures for the award of 1 **research assignment** in accordance with Article 22 ter of Law 240/2010 as set out in Annex A) to this call, in which the information sheets indicating the reference structure, the specific responsibility within the assignment (tutor) and the functions to be performed, as well as the scientific disciplinary area and information on the interview, are provided.

Deadline for submitting the application: 7th August 2026 at 1.00 p.m.

Contract duration: 12 months

All-inclusive annual administrative gross amount: € 28.000

Admission requirements:

- Master's Degree obtained no more than six years prior to the application deadline (pursuant to Ministerial Decree no. 270/2004, or specialist degrees awarded pursuant to Ministerial Decree no. 509/1999, and degree diplomas awarded under the regulations in force prior to Ministerial Decree no. 509/1999, deemed equivalent to the above-mentioned Master's Degrees pursuant to the Interministerial Decree of 9 July 2009). Only candidates holding a master's degree obtained no more than six years prior to the application deadline are eligible to apply. Candidates who fail to meet this requirement will lose the right to be awarded the research assignment.

Documents to be attached:

The application must include:

- a) A comprehensive scientific-professional curriculum containing all the necessary elements for assessing prior activities and any relevant work experiences, in connection with the content of the assignment under consideration (specifically indicating: date/duration, place of completion, etc.);
- b) A Master's Degree. Candidates holding a foreign master degree must submit the documents and elements useful for the assessment of equivalence to be carried out by the selection board; Documents issued in a foreign language other than French, English, German and Spanish, must be accompanied by a certified Italian translation that conforms with the original text, drawn up by the competent diplomatic or consular representation, or by an official translator.
- c) Additional documents that the candidate deems useful for the selection purposes;
- d) Publications that the candidate considers relevant for the selection, considering the maximum number set for the selection, as indicated in Annex A), with a list signed by the candidate;
- e) Photocopies of the tax code and a current valid identification document.

Candidates must submit the publications they intend to present exclusively in PDF format through the dedicated section of the online procedure.

Each publication shall not exceed 30 megabytes.

Publications not enclosed with the application will not be considered by the Selection Board. Lists with links to texts are not allowed as a replacement for publications.

Applications

Applications must be submitted online only, using the following link: <https://pica.cineca.it/unipi/> or shall be invalid. An e-mail inbox is required to login and complete the application.

Candidates can login into PICA platform using the digital identifier SPID (Sistema Pubblico d'Identità Digitale - Public Digital Identity System) or Carta d'Identità Elettronica (CIE), selecting the University of Pisa among the available Institutions.

If candidates do not have SPID/CIE, they can request it in accordance with the procedures set forth on the website www.spid.gov.it or www.cartaidentita.interno.gov.it.

Candidates can also login with the credentials issued directly by PICA platform (please note: in order to apply online, the system requires an e-mail inbox for self-registration), with their LOGINMIUR, REPRISE or REFEREES account.

Applicants must provide all the required data and upload all documents in PDF format.

The system allows saving an application draft within the application deadline, recording the online application's date and sending a receipt with an automatic reply. After the deadline, the system will not allow login nor application submission.

Each application will be assigned a unique identification number to be referred to in all subsequent communications, along with the selection code provided by the application form.

Under penalty of exclusion, the application shall be valid only if including all the required data, the copy of a valid ID and:

- if submitted by accessing the system without the SPID/CIE digital identifier, the applicant's signature is mandatory;
- If submitted by accessing with the SPID/CIE digital identifier, the application will be automatically processed by the system and the applicant's signature is not required.

Applicants undertake to promptly communicate in writing any variations of what declared in the application form.

The communication must be edited in PDF format, signed and forwarded to the Rector of the University of Pisa by the Italian certified e-mail system address (P.E.C. Posta Elettronica Certificata): protocollo@pec.unipi.it or emailed to concorsi_incarichi@unipi.it , within the application's submission deadline.

An applicant's valid identification document must be attached.

For further information on application submission, please refer to concorsi_incarichi@unipi.it .

For technical problems support only, please click on the bottom link available at <https://pica.cineca.it/unipi>.

Selection procedure:

For the selection under Annex A) the Director of the Department appoints a Selection Board consisting of the head of the assignment and two other members.

Candidates are assessed comparatively on the basis of the following elements:

- a) Relevance and significance of the activities previously carried out, as well as any work experience, in relation to the contents of the assignment to the selection, in addition to documented qualifications (such as, for example, degree grade, postgraduate diplomas, any contracts, scholarships, conference presentations, and other documented qualifications);
- b) Quality, originality and innovativeness of the attached publications, as well as their relevance to the assignment under consideration;
- c) An interview aimed at assessing the knowledge of the basic subjects of the scientific disciplinary sector to which the subject of the assignment belongs, the suitability for carrying out the research activity under the assignment , as well as the evaluation of knowledge of the English language and/or other languages relevant to the research (as reported in Annex A). During the interview, the Selection Board also assesses the knowledge of the Italian language for foreign candidates.

The Selection Board has 100 points available for the comparative evaluation of the candidates: 60 points can be allocated for the criteria mentioned above under a) and b), and 40 points for the interview.

The Selection Board may stipulate a minimum score below which eligibility cannot be awarded.

Candidates are summoned for the interview on the day and time specified in the Annex A) for the procedure.

Failure to attend an interview by a candidate is considered an explicit indication of their intention to withdraw from the selection process.

Applicants for this selection are required to consult the University website at <https://bandi.unipi.it/public/Bandi?type=IRIC> (on the selection procedure page) during the two days preceding the date set for the interview.

On the University website (<https://bandi.unipi.it/public/Bandi?type=IRIC>), in the section dedicated to the procedure, the following will be published:

- Assessment scores for criteria a) and b);
- The list of candidates admitted to the interview;
- Practical instructions for carrying out the interview and/or any details should the interview be rescheduled;
- The procedure approval decree and the merit ranking that takes into account the scores achieved by the candidates.

Please note that the English version is provided for courtesy and information purposes only. It cannot be legally used in the event of a dispute or a claim arising from the interpretation of this translation and concerning the contents, a possible uncertainty, contradiction, or discrepancy. Should this occur, the Italian version of the call should prevail as the sole legally binding text. For the full Italian version see: <https://bandi.unipi.it/public/Bandi?type=IRIC> (on the selection procedure page).

Selection code - inc-ric_inginf2026_11

Department of Engineering Information

**GSD 09/IINF-04 - Systems and Control Engineering
SSD IINF-04/A - Systems and Control Engineering**

**Supervisor of the appointee's activities (tutor):
Prof. Paolo Salaris**

Title of the activities covered by the appointment:

Planning, control and experimental validation for a collaborative robot arm with specialized endeffectors for refrigerant charging in refrigeration circuits at the end-of-line of manufacturing plants

Activities to be carried out (covered by the appointment):

The assignment concerns the development of a collaborative robotic system for the automatic execution of end-of-line operations on refrigeration circuits, including refrigerant charging via Hansen coupling, leak detection, coupling removal, and tube welding using a dedicated welding tool.

The variety of operations motivates the integration of an automatic tool changer enabling the use of the different operational devices required by each phase. The activities include the study of the dynamic properties of the arm under variable load conditions induced by the tool changer, the characterisation of system behaviour during contact phases with couplings and tools, and the identification of dynamic parameters in the relevant operational configurations. Building on these models, trajectory planning and force/impedance control algorithms are developed for the different coupling and manipulation tasks, accounting for positional uncertainty and relative motion between the manipulator and the product on the line. An integrated vision system enables localisation of the couplings and task-state estimation. A supervisory controller manages the sequence of operational phases while enforcing safety requirements. Experimental validation on a test bench, assessed through accuracy, repeatability, and cycle-time metrics, completes the work.

Specific responsibility relating to the activities of the appointment and functions to be performed:

The candidate is responsible for the overall development of the robotic system for the automatic execution of operations on refrigeration circuits at the end-of-line, from refrigerant charging via Hansen coupling to leak detection, coupling removal, and tube welding. Responsibilities include the integration of the automatic tool changer enabling transitions between the different operational devices, the study of the dynamic properties of the arm under variable load conditions, and the characterisation of system behaviour during contact phases with couplings and tools. The candidate is further responsible for the development of trajectory planning and force/impedance control algorithms for the different tasks, the integration of the vision system, and the implementation of the supervisory controller managing the operational sequence. Finally, the candidate is responsible for maintaining and developing the collaboration with the industrial partner, ensuring the transfer of technical results and the alignment between industrial requirements and research activities.

Maximum number of publications that candidates may submit, including the doctoral thesis, if submitted: 2

Language skills:
English language

Date, time and mode of the interview:

7th september 2026 alle ore 9.30 in telematic mode