



UNIVERSITÀ DI PISA

Except from the Rector's decree n. 1424/2022

### Call for the selection of n. 6 Junior Research Fellows

(Under the Italian Law 240/2010 article 24, subparagraph 3, point a)

The University of Pisa announces a call for 6 Junior Fixed-Term Research Fellow for the Department and the scientific area or sector as listed in Annex A.

The fixed-term contract is to carry out research activities, teaching, integrative teaching activities and services for students, for a 350 hours commitment, on a full-time basis.

The Junior Research Fellow is required to perform lectures for a minimum of 36 up to a maximum of 60 hours per academic year, allocated as an institutional assignment for Bachelor's and Master's degree programmes, Specialization Schools and PhD programmes. It is possible to provide a further derogation up to a maximum of 72 hours, in order to avoid an excessive partitioning of teaching modules.

Contract duration: 3 years

Deadline for application: 17/10/2022 1 p.m.

#### Admission requirements:

PhD or equivalent academic qualification awarded in Italy or abroad and recognised as eligible for admission.

medical specialization, for the sectors concerned

As for a qualification awarded abroad, equivalency or comparability documentation has to be provided as stated under:

D.Lgs.165/2001, article 38:

[http://www.funzionepubblica.gov.it/sites/funzionepubblica.gov.it/files/modulo\\_equivalenza\\_Titoli\\_Accademici.pdf](http://www.funzionepubblica.gov.it/sites/funzionepubblica.gov.it/files/modulo_equivalenza_Titoli_Accademici.pdf)

Or under:

D.P.R. 382/1980, article 74:

[http://www.miur.gov.it/documents/20182/0/Equipollenza\\_Dottorato\\_ricerca\\_dpr382.pdf/f5ff98ae-ddff-4166-a822-83ef1b57c7f0](http://www.miur.gov.it/documents/20182/0/Equipollenza_Dottorato_ricerca_dpr382.pdf/f5ff98ae-ddff-4166-a822-83ef1b57c7f0)

As for an equivalent or comparable academic qualification, the candidate shall be admitted within the application's deadline and shall provide the qualification equivalency or comparability before the signing of the contract.

No admission to this selection for:

- Professors or Research Fellows with permanent position at the university, currently employed or currently retired;
- Fixed-term Research Fellowship or Post PhD research grants at the University of Pisa or other Italian universities, either public, private or online, and other public institutions (Under the Italian Law Italian Law n. 240/2010, articles 22 and 24) for a period that, totalled over this contract, would exceed 12 years altogether, even when not consecutive. As for the duration of the working period mentioned above, parental leave or medical leave, are excluded (under the existing legislation).

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#### Applications:

Applications are to be submitted online only, using the following link: <https://pica.cineca.it/unipi/> or shall be invalid. It is necessary to have an email address to login and complete the application.

Applicants should fill in all the required data and upload all documents in PDF format.

The system allows saving a draft of the application within the application deadline. The system will register the online application date and send a receipt with an automatic e-mail reply. After deadline, the system will not allow login nor application submission.

In order to be valid, application shall include all the required data, applicant's signature and a valid identification document.

Each application will be assigned a tracking number to be cited in all subsequent communications, together with the selection code provided by the application form.

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

The communication shall be edited in PDF format, signed and forwarded to the University of Pisa Rector via the Italian certified e-mail system address (P.E.C. Posta Elettronica Certificata):

protocollo@pec.unipi.it or via e-mail at: concorsi@adm.unipi.it. Applicant's valid identification document shall be annexed.

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

For any IT malfunctioning please refer to unipi@cineca.it.

Applications shall be completed with the following annexes:

1. A self-attested Curriculum of the personal didactics, teaching and scientific activities, dated and signed;
  2. The Publications applicant considers eligible for this selection with the corresponding list dated and signed;
  3. A complete list of all Publications, dated and signed;
  4. A copy of the fiscal code (if applicable) and identification card/passport, dated and signed;
- All publications should not exceed 30 megabyte and are to be submitted in PDF format only, using the specific section of the application form.

#### **Selection procedure:**

A Rector's Decree will appoint the Selection Committee, consisting of three members.

The selection will be made according to a preliminary assessment of the candidates with an accurate and evidenced analytic evaluation of the Curriculum, of qualifications and scientific results, including PhD thesis.

After the preliminary assessment, the candidates that have comparatively proven to be the most meritorious, will be admitted to an open interview; they will represent between 10 and 20 % of the total and will be not less than six. The interview will concern applicant's qualifications and scientific results. In the event the number of applicants is six or less, all candidates are admitted. All admitted candidates will be summoned by registered post at least twenty days before the interview; the failed attendance to the interview will be considered as a voluntary renunciation.

During the interview, all candidates will be furthermore tested on the foreign language skills requested by the selection.

Date, time and procedures for qualifications and publications' discussion will be issued on the University website at the following link: <https://bandi.unipi.it/public/Bandi?type=RIC>, on the relevant section of the procedure referred to in this call on 28 October 2022 (providing a 20 days' notice at least).

The notice on the University website will be considered as a notification for the selection candidates, who will have to attend on the day and time indicated without any further communication.

No personal communication will be sent to candidates; therefore, the selection candidates are required, in any case, to check on the University website at the link above on 28 October 2022 and then during the two days preceding the date set for the interview.

Failing to attend the interview at the date and place set for the selection will be considered an explicit and definitive waiver by the candidates who will therefore be excluded from the selection, whatever the cause of their absence, even if for reasons independent from their will.

"The list of candidates admitted to the interview will be published on the university website at <https://www.unipi.it/index.php/concorsi-gare-e-bandi> in the section dedicated to the procedure in this call"

Please note that the English version is given as a matter of courtesy, for the only purpose of information.

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 shall prevail as the only valid. For full Italian text see: <https://www.unipi.it/ateneo/bandi/ricercat/ricercator/index.htm>

(1) If applicable

Department of Civil and Industrial Engineering  
Admission Examination 09/A3 - INDUSTRIAL DESIGN, MACHINE CONSTRUCTION AND METALLURGY  
Disciplinary Scientific Sector Ing-Ind/21 METALLURGY

Progetto PNRR CN4 - Mobilità sostenibile Spoke 11 - Materiali innovativi e alleggerimento

**Focus of research:**

The researcher will deal with research topics relating to the choice of the best metal alloys, high-strength steels and aluminum alloys, to be applied in vehicles, not necessarily and only cars, with a view to lightening the vehicles themselves, their environmental sustainability in the cycle of life and in preserving the typical safety features of vehicles with respect to passengers in the event of an accident. The activity will include the use of instrumentation for metallurgical and metallographic tests, static and cyclic mechanical tests, gas measurements, in particular hydrogen, dissolved in metals, applications of Additive Manufacturing techniques.

**Scientific productivity:**

Publication of scientific articles in indexed journals and participation, as a speaker, at national and / or international conferences; filing of any patents.

**Head office:**

Department of Civil and Industrial Engineering

**Specific didactic activity of the contract**

The teaching activity will be carried out within the teachings of the SSD ING-IND / 21, for which the procedure is banned. During the teaching activities, explicit reference will be made to the relevance of the environmental impact and green issues in general and to the results of research activities, in particular, such as effects on metallurgy and application technologies.

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications

Department of Civil and Industrial Engineering  
Admission Examination 09/A2 APPLIED MECHANICS  
Disciplinary Scientific Sector ING-IND/13 APPLIED MECHANICS

Progetto PNRR Centro Nazionale di Ricerca per la mobilità sostenibile (CN 4) - Spoke 11 - Materiali innovativi e alleggerimento

**Focus of research:**

The research topics include those typical of the sector with special focus on theoretical studies and experimental investigations on mechanical systems, mechanical machines and their components through methodologies and best practices typical of theoretical, applied and experimental mechanics.

In particular, theoretical and experimental tribological investigations will be performed on new materials for automotive and aerospace components including experimental campaigns aimed at characterizing friction and wear on lubricated and dry contacts.

The research is focused on critical mechanical components found in automotive and aerospace industries, with special reference to mechanical transmissions, high-power gear drives and lubricated and dry contacts in general.

The paramount objectives pursued are the characterization of wear and tribological properties in higher kinematic pairs via extensive experimental campaigns and the structural and tribological optimization of the design of critical mechanical components. Special emphasis is directed towards macro-geometry and micro-topography optimization of gear teeth of hypoid and spiral bevel gears, both largely employed both in automotive and aerospace systems.

**Scientific productivity**

Publication of journal papers on peered review journals. Participation in national and international conferences as a speaker. Development of numerical algorithms and computer codes. Filing of any patents. (in inglese)

**Head office**

Department of Civil and Industrial Engineering

**Specific didactic activity of the contract**

Classes and teaching activities related to the topics associated to the general subject of Mechanics Applied to Machines

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications

Department of Civil and Industrial Engineering  
Admission Examination 03/B2 PRINCIPLES OF CHEMISTRY FOR APPLIED  
SSD CHIM/07 PRINCIPLES OF CHEMISTRY FOR APPLIED TECHNOLOGIES

Progetto PNRR: Centro Nazionale (CN) 4 - Mobilità sostenibile - Spoke 11

Focus of research:

Research topics specific to the sector, concerning the study of the chemical and chemical-physical foundations of the technologies applied in the various fields, in particular concerning those relating to synthesis and production of materials, to their properties, interaction with the environment in which they are used and their environmental sustainability.

Scientific productivity

Dissemination of the results through publications in international scientific journals with IF through peer review, presentation of the results at national and international conferences, supervision and coordination of research and technology transfer activities (such as drafting and submitting national/international patents) in the context of projects of the research group.

Head office  
Department of Civil and Industrial Engineering

Specific didactic activity of the contract

Teaching and didactic activities related to the sector, regarding both basic courses and more advanced courses with a high degree of complexity, congruent with the needs of the study courses in industrial engineering

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications

Department of Information Engineering  
Admission Examination 09/F1 ELECTROMAGNETIC FIELDS  
SSD ING-INF/02 ELECTROMAGNETIC FIELDS

Progetto PNRR Centro Nazionale 4 - Mobilità sostenibile, - CUP I53C22000720001 ed in particolare lo spoke n. 7 “Smart Infrastructures”;

**Focus of research**

Research activities on topics characterizing the scientific disciplinary sector “ING-INF/02 - Electromagnetic Fields”, with specific focus on the development and implementation of microwave and millimeter wave wireless devices for vehicles and smart infrastructures in the framework of sustainable mobility.

**Scientific productivity**

Advances in the state of the art in the topics within scientific disciplinary sector “ING-INF/02 - Electromagnetic Fields”, documented by high quality publications in peer reviewed journals; participation to qualified international conferences.

**Head office**

Department of Information Engineering

**Specific didactic activity of the contract**

Basic and advanced courses within the scientific disciplinary sector “ING-INF/02 - Electromagnetic Fields”.

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications

Department of Information Engineering  
Admission Examination 09/H1 09/H1 - INFORMATION PROCESSING SYSTEMS  
SSD ING-INF/05 09/H1 - INFORMATION PROCESSING SYSTEMS

Progetto PNRR - Centro Nazionale 4 - Mobilità sostenibile - CUP I53C22000720001 ed in particolare lo spoke n.10 “Freight and Logistic”;

**Focus of research**

Research activity compliant with the scientific disciplinary sector (SSD) declaration, with special reference to IT technologies enabling advanced logistics and freight transport systems. (in inglese)

**Scientific productivity**

Pubblicazione di lavori su qualificate riviste internazionali; partecipazione a conferenze internazionali;

Publication of papers in qualified international journals; participation in international conferences. involvement in national and international research projects

**Head office**

Department of Information Engineering

**Specific didactic activity of the contract**

Educational activity in disciplines of the scientific disciplinary sector. Management of educational activities and projects.

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications

Department of Information Engineering  
Admission Examination 09/E3 ELECTRONICS  
SSD ING-INF/01 ELECTRONIC ENGINEERING

Progetto PNRR Centro Nazionale per la Mobilità Sostenibile-CNMS, CUP I53C22000720001, Spoke 13:  
Trazione elettrica e batterie

**Focus of research**

Research activity relevant to the topics of the ING-INF/01 “Elettronica” disciplinary sector with particular reference to the activities described in the PNRR Project Sustainable Mobility National Center (Centro Nazionale per la Mobilità Sostenibile-CNMS); Spoke 13: Electric Traction and Batteries; WP1 Battery/supercapacitor technologies development for on board and stationary applications; Task 1.3 Developments of methods, components and auxiliaries for electrochemical device monitoring, control, diagnostics, and management.

**Scientific productivity**

Research activity demonstrated by publication of scientific contributions to national and international conferences and journals on the specific topics described in the PNRR Project Sustainable Mobility National Center (Centro Nazionale per la Mobilità Sostenibile-CNMS); Spoke 13: Electric Traction and Batteries; WP1 Battery/supercapacitor technologies development for on board and stationary applications; Task 1.3 Developments of methods, components and auxiliaries for electrochemical device monitoring, control, diagnostics, and management.

**Head office**

Department of Information Engineering

**Specific didactic activity of the contract:**

Teaching and support activity on topics linked to the contents of the PNRR Project Sustainable Mobility National Center (Centro Nazionale per la Mobilità Sostenibile-CNMS); Spoke 13: Electric Traction and Batteries

Candidates will be required to demonstrate an adequate knowledge of English language

Candidates may present a maximum number of 12 scientific publications