UNIVERSITÀ DI PISA

Excerpt from the Rector's decree n. 278/2023

Call for the selection of n. 11 Junior Research Fellows

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

The University of Pisa announces a call for 11 Junior Fixed-Term Research Fellows for the Departments and the Academic Fields or Academic Disciplines 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 programs, Specialization Schools and PhD programs. 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: 20th of March 2023, 1 p.m.

Admission requirements:

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

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

Or under:

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

https://www.unipi.it/index.php/titoli-accademici-esteri

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, totaled 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).

Applications:

Applications are to be submitted online only, using the following link: https://pica.cineca.it/unipi/ric2023pnrr-pe2/ 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.

Information about date, time, list of candidates admitted, and the conditions of the assessment interview will be published on the University website at the following link: https://bandi.unipi.it/public/Bandi?type=RIC, in the specific section reserved to the selection, on the **27th of March 2023** (with a twenty days' notice guarantee).

The publication on the University website is to be regarded as convocation notice for the participants to the selection, who must show the day and time indicated; no further communications will be published. The failed attendance to the interview will be considered as a voluntary waiver to the selection.

Selection Committee meetings for purposes other than qualifications and publications assessment may be held remotely, in whole or in part, using a video meeting platform, in compliance with the Regulation "Regolamento temporaneo per lo svolgimento delle sedute collegiali in modalità telematica" art. no. 2,3 and 4, referred to in the Rectoral Decree no. 491/2020 of 6 March 2020 and subsequent amendments, as well as with the Rectoral Decree no. 1099/2020 of 7 August 2020, art. 3.

Qualifications and publications assessment will be held "in-presence", pursuant to the Rectoral Decree no. 1099/2020 of 7 August 2020, art. 1, and in compliance with the "Safety Protocol against Covid-19 Spread. Guidelines for in-presence Selection Procedures", issued by the Rectoral Decree no. 1011/2020 of 21 July 2020.

At least one member of the Selection Committee shall be present during the qualifications and publications assessment; the other Committee members can attend the selection procedure either "in-presence" or remotely, in compliance with the Regulation "Regolamento temporaneo per lo svolgimento delle sedute collegiali in modalità telematica".

In the event of "in-presence" selection procedures also attended remotely by one or more Committee member, it shall be specified that the session is held "in-presence", allowing however one or more Committee member to attend remotely and indicating the possible operating procedures for attendance; the selection minutes must include both the names of the members "in presence" and remotely connected, along with the operating platform used.

In order to ensure a limited access to the premises where the qualifications and publications assessment is carried out, auditors shall be allowed in (in compliance with the aforementioned Safety Protocol) only upon written request to be emailed at least two days before the selection procedure to concorsi_ricercatori@unipi.it. Live Streaming will be provided at https://www.unipi.it/index.php/concorsi-gare-e-bandi (see the relevant section) to guarantee the publicity of the qualifications and publications assessment.

Upon the Selection Committee approval, candidates living abroad and therefore unable to attend the "in-presence" interview at the University of Pisa, will be interviewed via web, prior their identification by approved international universities or research centers. The Selection Committee is appointed to assure the duly examination of the candidates and shall collect their ID copy.

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://bandi.unipi.it/public/Bandi?type=RIC

Annex A

Department of Civil and Industrial Engineering

Academic Recruitment Field 09/D2 Systems, Methods and Technologies of Chemical and Process Engineering

Academic Discipline ING-IND/24 - Fundamentals of Chemical Engineering

Nr. of position available: 1

Progetto PNRR NEST- Network 4 Energy Sustainable Transition; Spoke 6 Energy storage

Focus of research:

Study of transport and reaction phenomena in applications related to the electrochemical energy storage and to the technologies of process industry, energy systems and electrification.
The modelling of physical-chemical phenomena, of devices and processes of electrochemical energy storage and conversion, with the tools of transport phenomena, kinetics, thermodynamics and energetic analysis, by using mathematical methods and specific simulation tools.

Scientific productivity:

The scientific activity concerns participation in the PNRR NEST- Network 4 Energy Sustainable Transition research project; Spoke 6 Energy storage, writing articles for qualified scientific journals and participating in international and national conferences.

Head office:

Department of Civil and Industrial Engineering

Teaching activity of the contract:

Teaching activities related to the typical subjects of the Fundamentals of Chemical Engineering, such as transport phenomena as well as chemical and electrochemical reactions.

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

Academic Recruitment Field 09/D3 Chemical Plants and Technologies

Academic Discipline ING-IND/25 Chemical Plants

Nr. of position available: 1

Progetto PNRR NEST- Network 4 Energy Sustainable Transition; Spoke 3 Bioenergy and biofuels for sustainable future

Focus of research:

Development of methodologies for the analysis and modelling of chemical systems, equipment, processes and industrial plants for applications in the production of biofuels; analysis of the safety and environmental compatibility aspects of industrial plants and processes based on chemical-physical transformation operations of the material, with particular reference to methodologies for the development and design of processes and plants based on sustainable, safe and low environmental impact technologies. The reference sector, in addition to the classic ones of chemical engineering, is represented by that of the production of energy from biomass and waste.

Scientific productivity:

The scientific activity includes participation in the PNRR NEST- Network 4 Energy Sustainable Transition research project; Spoke 3 Bioenergy and biofuels for sustainable future, writing articles for qualified scientific journals and participating in international and national conferences.

Head office:

Department of Civil and Industrial Engineering

Teaching activity of the contract:

The teaching activity will consist in teaching subjects of the AD ING-IND/25 and related sectors within the Master's Degree Course in Chemical Engineering and master's degree courses of the Engineering School of Pisa and in other Departments of the University of Pisa; it may also include teaching in doctoral, master and post-graduate specialization courses.

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

Academic Recruitment Field 09/D2 Systems, Methods and Technologies of Chemical and Process Engineering

Academic Discipline ING-IND/26 Analysis, Design and Control of Chemical Processes

Nr. of position available: 1

Progetto PNRR NEST- Network 4 Energy Sustainable Transition; Spoke 3 Bioenergy and biofuels for sustainable future e Spoke 8 Final Use Optimization, Sustainability & Resilience in Energy Supply Chain

Focus of research:

Development of numerical tools for modeling general Renewable Energy Systems (RES), characterized by highly interlaced electrical/thermal power generators with primary renewable sources, electrical/thermal storage units, and power and heat consumers. Development of numerical mixed-integer and nonlinear optimization tools for real-time management of RES, application of forecast methods for estimation of renewable power generation and power consumption, and implementation of feedback strategies to compensate for unforeseen disturbances. Resiliency analysis based on a stochastic scenario framework, demonstration, and quantification of benefits in several representative case studies.

Scientific productivity:

The scientific activity includes participation in the PNRR NEST- Network 4 Energy Sustainable Transition research project; Spoke 3 Bioenergy and biofuels for sustainable future and Spoke 8 Final Use Optimization, Sustainability & Resilience in Energy Supply Chain, writing articles for qualified scientific journals and participating in international and national conferences.

Head office:

Department of Civil and Industrial Engineering

Teaching activity of the contract:

The teaching activity will consist in teaching subjects of the AD ING-IND/26 and related sectors within the master's degree Course in Chemical Engineering and master's degree courses of the Engineering School of Pisa and in other Departments of the University of Pisa; it may also include teaching in doctoral, master and post-graduate specialization courses.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Chemistry and Industrial Chemistry

Academic Recruitment Field 03/C2 – Industrial and Applied Chemistry

Academic Discipline CHIM/04 Industrial Chemistry

Nr. of position available: 1

Progetto PNRR NEST- Network 4 Energy Sustainable; Spoke n. 3 Bioenergy & new biofuels for a sustainable future

Focus of research:

The research activity will cover the topics of the AD CHIM/04 (Industrial Chemistry).The activity will be devoted to the exploitation of renewables adopting sustainable catalytic and thermochemical processes for chemical and energy production from an integrated biorefinery perspective.

Scientific productivity:

Achievement of scientific autonomy, also through the supervision of degree and doctoral theses. Publication of scientific papers in international journals, presentations at national and international congresses and possible patent applications on the research topics.

Head office:

Department of Chemistry and Industrial Chemistry

Teaching activity of the contract:

Laboratory and theoretical courses for characterizing and mandatory training activities of the AD CHIM/04 (Industrial Chemistry) for bachelor's and master's degree courses of the University of Pisa, compatibly with the minimum and maximum commitments defined by law and by the University Regulations for the role of RTD-A.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Agricultural, Food and Agro-Environmental Sciences

Academic Recruitment Field 07/B1 Agronomy and Field, Vegetable, Ornamental Cropping

Academic Discipline AGR/02 Agronomy and Field Crops

Nr. of position available: 1

Progetto PNRR NEST- Network 4 Energy Sustainable; Spoke 3 - Bioenergy and New Biofuels for a Sustainable Future (UNIPI)

Focus of research:

The research activity will concern the specific issues of the AD AGR/02 with particular regard to the management of agro-ecosystems and the identification of management strategies for herbaceous energy and biofuels crops, aimed at improving productivity, sustainability and resilience of the production system. Different types of crops will be therefore studied in different environments and on marginal lands, and agronomic techniques and innovative processes will be defined for obtaining different types of biomass feedstocks with low risk of ILUC (indirect land-use change) for sustainable value chains that favour the energy transition and carbon neutrality.

Scientific productivity:

The researcher will have to produce scientific articles in indexed journals and actively participate in national and international scientific events.

Head office:

Department of Agricultural, Food and Agro-Environmental Sciences

Teaching activity of the contract:

Teaching within the teaching courses related to AD AGR/02 - Agronomia e Coltivazioni Erbacee.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Economics and Management

Academic Recruitment Field 13/A1 Economics

Academic Discipline SECS-P/01 Economics

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition - Spoke 3 - Bioenergy & New Biofuels for a Sustainable Future

Focus of research:

The research activity includes the study of economic phenomena at the micro-economic and macroeconomic levels, using inductive, deductive, static and dynamic methods. The fields of investigation will be the theory of the consumer, the firm, markets and general equilibrium; the macro-economic analysis of real markets; the examination of the historical-evolutionary process of the theories and methods of the disciplines in the field.

Scientific productivity:

Publications in prestigious journals and participation to national and international research projects.

Head office:

Department of Economics and Management

Teaching activity of the contract:

Teaching courses in the AD of "Economics" (SSD SECS-P/01) and related courses activated in the courses of the Department of Economics and Management.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Computer Science

Academic Recruitment Field 01/B1 Informatics

Academic Discipline INF/01 Informatics

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition; Spoke 8 Final use optimization, sustainability & resilience in energy supply chain

Focus of research:

Research activity in the academic discipline INF/01 Informatics, with particular reference to the study of technique to reduce the energy consumption of ICT systems distributed on heterogeneous Cloud-Edge infrastructures.

Scientific productivity:

Publication of obtained results in international scientific journals and conferences.
Dissemination and presentation of results in national and international seminars and congresses.

Head office:

Department of Computer Science

Teaching activity of the contract:

Teaching activity in the academic discipline INF/01 Informatics according with national regulations and with the needs of the undergraduate and graduate courses of the University of Pisa.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Energy, Systems, Territory, and Construction Engineering

Academic Recruitment Field 09/C1 Fluid Machinery, Energy Systems and Power Generation

Academic Discipline ING-IND/08 Fluid Machinery

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition; Spoke 5 Energy Conversion

Focus of research:

Research activity pertaining to the declaration of the AD ING-IND/08 “Fluid Machinery”, with particular reference to the activities envisaged by the PNRR Project Extended Partnership 2 - NEST - "Network 4 Energy Sustainable Transition" in relation to methods and technologies for the research and development of systems and components for mechanical, electrical and thermal power generation and energy conversion.

Scientific productivity:

The aim of scientific production is writing scientific papers in international scientific journals (1-3 papers per year on high impact journals), participation at national and international congresses and conferences, participation in the activities of the Partenariato Esteso Energia NEST - Network 4 Energy Sustainable Transition with special reference to Spoke 5 “Energy Conversion” and other projects funded by the EU and Italian national and regional governments, and participation at projects of technology transfer. Improvement of knowledge about energy systems with the aim of contributing to the technical and engineering development.

Head office:

Department of Energy, Systems, Territory, and Construction Engineering

Teaching activity of the contract:

The researcher will do didactic activities, including face-to-face lessons, in the courses and modules classified in the disciplinary sector of Thermal Machines for the programs of study for the achievement of first and second level degrees, that foresee them, and PhD studies. The researcher will have to contribute to tutoring activities and to support students in the preparation of their Master and PhD thesis.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Energy, Systems, Territory, and Construction Engineering

Academic Recruitment Field 09/C1 Fluid Machinery, Energy Systems and Power Generation

Academic Discipline ING-IND/09 Energy Systems and Power Generation

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition; Spoke 3 - Bioenergy & New Biofuels for a Sustainable Future

Focus of research:

Research activity pertaining to the declaration of the AD ING-IND/09 “Energy Systems and Power Generation”, with particular reference to the activities envisaged by the PNRR Project Extended Partnership 2 - NEST - "Network 4 Energy Sustainable Transition" in relation to methods and technologies for the research and development of innovative energy systems for the use of biomass in energy conversion and mobility systems.

Scientific productivity:

The aim of scientific production is writing scientific papers in international scientific journals (1-3 papers per year on high impact journals), participation at national and international congresses and conferences, participation in the activities of the Partenariato Esteso Energia NEST - Network 4 Energy Sustainable Transition with special reference to Spoke 3 “Bio energy and new fuels for a sustainable future” and other projects funded by the EU and Italian national and regional governments, and participation at projects of technology transfer. Improvement of knowledge about energy systems with the aim of contributing to the technical and engineering development.

Head office:

Department of Energy, Systems, Territory, and Construction Engineering

Teaching activity of the contract:

The researcher will do didactic activities, including face-to-face lessons, in the courses and modules classified in the disciplinary sector of Systems for Energy and Environment for the programs of study for the achievement of first and second level degrees, that foresee them, and PhD studies. The researcher will have to contribute to tutoring activities and to support students in the preparation of their Master and PhD thesis.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Energy, Systems, Territory, and Construction Engineering

Academic Recruitment Field 09/C2 Thermal Sciences, Energy Technology, Building Physics and Nuclear Engineering

Academic Discipline ING-IND/10 - Thermal Engineering and Industrial Energy Systems

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition; Spoke 4 Clean Hydrogen and final uses

Focus of research:

Research activity pertaining to the declaration of the AD ING-IND/10 "Thermal Engineering and Industrial Energy Systems", with particular reference to the activities envisaged by the PNRR Energy Extended Project – NEST – "Network 4 Energy Sustainable Transition" in relation to the methods and technologies for the design and use of thermal energy storages.

Scientific productivity:

The aim of scientific production is writing scientific papers in international scientific journals, participation at national and international congresses and conferences, participation in the activities of the Partenariato Esteso Energia NEST - Network 4 Energy Sustainable Transition, with special reference to Spoke 4 "Clean Hydrogen and final uses" and other projects funded by the EU and Italian national and regional governments, and participation at projects of technology transfer.

Head office:

Department of Energy, Systems, Territory, and Construction Engineering

Teaching activity of the contract:

The researcher will do didactic activities, including face-to-face lessons, in the context of the basic and applied teaching courses and modules classified in the disciplinary sector of Industrial Technical Physics for the programs of study of the three-year and master's degree courses, in which topics in line with the research activity carried out are foreseen. The researcher will have to contribute to tutoring activities and support students in the preparation of their Master and PhD thesis.

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

Candidates may present a maximum number of 12 scientific publications.

Department of Energy, Systems, Territory, and Construction Engineering

Academic Recruitment Field 09/E1 Electrical Engineeering

Academic Discipline ING-IND/31 Electrical Engineeering

Nr. of position available: 1

Progetto PNRR NEST - Network 4 Energy Sustainable Transition; Spoke 3 Bioenergy & New Biofuels for a Sustainable Future

Focus of research:

Research activity pertaining to the declaration of the AD ING-IND/31 "Electrical Engineering", with particular reference to the activities envisaged by the PNRR Project Extended Partnership 2 - NEST - "Network 4 Energy Sustainable Transition" in relation to final use optimization, sustainability & resilience in energy supply chain.

Scientific productivity:

Research activities with publications and scientific contributions to national and international conferences and journals on the topics described in the PNRR Project NEST Extended Energy Partnership - Network 4 Energy Sustainable Transition in relation to energy optimization in its final uses for the increase of self - energy sufficiency and security in renewable energy communities, districts and smart cities. Improvement of knowledge in the field of energy systems for the purposes of technical-economic and engineering development.

Head office:

Department of Energy, Systems, Territory, and Construction Engineering

Teaching activity of the contract:

The researcher will have to carry out teaching activities, including face to face teaching activities, as part of the teachings in disciplines of the AD object of the call. The researcher will also be required to contribute to tutoring activities in the development of degree and doctoral theses.

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

Candidates may present a maximum number of 12 scientific publications.