



GIOVANISI



Regione Toscana



UNIVERSITÀ DI PISA

Call for the selection of no. 3 temporary research associate positions:

The University of Pisa announces the public selections, based on qualifications and interview, for the assignment of n. 3 grant for research activities (hereinafter referred as research grants) indicated in the Annex A, that contains tabs for each project with an indication of the reference structure, the object of research, the scientific field, the contract duration and information relating to the interview.

Research grants are financed 50% by the resources of FSE POR 2014-2020 and fall within the scope of Giovanisi (www.giovanisi.it), Tuscany Region's project for the autonomy of young people.

Gross annual salary: € 27.000,00

Admission requirements:

Holder of a doctoral degree (or equivalent foreign qualification) or a specialization degree in the medical field, otherwise holder of master degree with at least three years of documented research experience with universities and public research centers or privates at the time of submission of the application;

Not be aged 36 years at the time of submission of the application;

To be domiciled in Tuscany at the time of submission of the application;

The successful candidates of the selections that they already holders of other fellowships or research grants, must give out them before the acceptance of the research grants referred in this notice, subject to the exceptions provided by art. 22, paragraph III of the Law 30/12/2010 n. 240 (exception for the scholarships awarded by national or foreign institutions turned to integrate the research with stays abroad).

The selection does not allow nationality limitations and takes place in accordance with the cross-cutting priorities of gender equality and equal opportunities.

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: _assegniconcorsi_assegni@unipi.it. Applicant's valid identification document shall be annexed.

For further information on application submission, please refer to concorsi_assegni@unipi.it
For any IT malfunctioning please refer to unipi@cineca.it.

Applications shall be completed with the following annexes:

1. A project of training-learning-research in which specify in detail the acquisitions and the professional growth that the candidate intends to achieve through the participation in the research project subject of this notice;
2. A self-attested Curriculum of the personal didactics, teaching and scientific activities, dated and signed;
3. The qualifications applicant considers eligible for this selection;
4. The Publications applicant considers eligible for this selection;
5. A list of Publications and qualifications, dated and signed;
6. 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:

For each selection procedure a committee is appointed by the Director of the University Department concerned, consisting of three members.

The selection is based on qualifications and interview.

For the selection the committee will evaluate:

- a) the consistency between the project of training-learning-research proposed by the candidate and the specific research project;
- b) the coherence between the curriculum vitae, the course of study and the research experiences made and the requested project profile;
- c) the academic qualifications and the number and quality of research results achieved (publications, patents, etc.);
- d) the score of the interview, that is be designed to assess the attitude, the motivation and the background of the candidate to participate in the project.

The score assigned to the candidates according to the items b) and c) above shall not be less than 60% of the total score achievable.

The interviews related with the research programs will be held according to the timetable set out in tabs for each research grants attached to this notice.

The candidates of the present selection must consult the University website (<https://www.unipi.it/ateneo/bandi/assegni/index.htm>) two days before the date set for the interview.

Failure to appear for the interview will be deemed an explicit expression of the candidate's non willingness to take part in the selection procedure.

Candidates committed abroad and therefore unable, in the opinion of the Commission, for the interview at the University, can do the interview electronically subject to their identification at foreign universities recognized internationally. The declaration of the validity of the procedure is done through the acquisition of a declaration by the Commission that acquires copy of the identity document of the applicant.

As the agreement between the University of Pisa and the Tuscany Region for the implementation of the intervention program called "FSE research grants - Tuscany Region" was signed on 11th December 2017, the research grants will have to start by the 90th day after at the date of signature of the agreement.

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/assegni/index.htm>.

Code A1

Department of Chemistry and Industrial Chemistry

“NMR4DES”

Research title:

Design of high-performance nanocomposite polymeric materials by Nuclear Magnetic Resonance

Project:

This project will consist in the development and application of solid state Nuclear Magnetic Resonance (SSNMR) techniques for the advanced study of the structural, phase, and dynamic properties of polymer-based nanocomposite materials. Among the studied materials, particular attention will be paid to those used in the high-performance tyre industry, in particular to elastomers reinforced with nanostructured fillers, typically silica and suitably functionalized natural silicates. The properties that will be mainly investigated concern the structural and dynamic behaviour at a molecular level of the polymer-filler interfaces and the degree of cross-linking of the polymeric matrices. To this aim three complementary types of SSNMR techniques will be applied: high-resolution (based on Magic Angle Spinning - MAS), low-resolution (based on the measurement of ^1H relaxation times) and Fast Field Cycling (FFC, based on the measurement of relaxation times T_1 as a function of the external magnetic field intensity). Such techniques will be combined so to find the best experimental protocol for each category of investigated materials. The analysis of SSNMR data will be supported by studies carried out by means of other spectroscopic, calorimetric, diffractometric, and microscopic techniques. The results obtained by SSNMR will be compared with the dynamical-mechanical properties in order to drive the material design (by suitably changing the content, degree and type of filler functionalization, as well as the shape of the nanoparticles) towards optimized macroscopic and applicative properties (e.g. in the case of tyres in terms of improvement of the reinforcement and reduction of energy dissipation).

Scientific discipline sector: CHIM/02 Physical Chemistry

Duration: 17 months

Date, time and place of the interview:

22nd November 2018 at 10.00 am at the Department of Chemistry and Industrial Chemistry - Via G. Moruzzi, 3 - Pisa

Code A2

Department of Civil and Industrial Engineering

“ALLIARIA”

Research title:

Advanced design of Long-Life Asphalt Rubber Improved by Anti-ageing nano-particles

Project:

The aim of the research project is the design of a specific binder modified by the addition of SBR-NR polymers from End-Of-Life (EOL) tyres that can achieve three principal objectives finalized to improving the environmental sustainability of this type of binder:

- 1) To allow using high percentages of Reclaimed Asphalt Pavement (RAP), up to 50% by weight of the aggregate mixture, in order to have the maximum benefit from the use of the resources available in the RAP, i.e. mineral aggregates and binder, taking into account that this latter is aged;
- 2) This binder can be used in percentages at least 30% less compared to those needed actually; it means that if mixtures produced by using asphalt rubber, actually, contain between 7% to 8% of binder by weight of the mixture, with the new binder, the same mixtures can be produced by using binder contents between 5% and 5,5%;
- 3) Asphalt Rubber binder, which actually presents ageing properties better than those of neat binders, should be improved by adding anti-ageing nano-particles.

Scientific discipline sector: ICAR/04 Highways, railways and airports

Duration: 18 months

Date, time and place of the interview:

19th November 2018 at 9.00 am at the Department of Civil and Industrial Engineering - Meeting room - 3rd floor - Largo Lucio Lazzarino - Pisa

Code A3

Department of Information Engineering

“SCOUTING”

Research title:

Smart Communication technologies for Urban Transportation

Project:

The research project aims to develop an innovative solution to improve safety in a rail-transport system through the development, integration and validation of an innovative system of broadband radio communication resilient to interference. This project aims to combine the concepts of railway safety and increased operational automation by means of reliable and secure data transmission through an interference-free system and its effective interaction with the signaling system that regulates line operation and safety. In fact, the communication system will have to support the transmission of critical (signaling, professional voice calls) and non-critical (public information, data, video) data, and for this reason it will have to foresee and support different categories of traffic with different requirements in terms of communication reliability, latency and bitrate. The developed communication technology will be based on the latest multicarrier modulations such as Orthogonal Frequency Division Multiplexing (OFDM), and will use carrier sensing techniques to assess channel conditions and interference, using state-of-the-art error-correcting codes. The developed solution will be engineered, a prototypal solution will be created (which will be tested in a typical operational scenarios for railway and tramway communications), integrated with on-board communication systems, and finally verified and validated.

Scientific discipline sector: ING-INF/03 Telecommunications

Duration: 17 months

Date, time and place of the interview:

21st November 2018 at 3.00 pm at the Department of Information Engineering - Via G. Caruso, 16 - Pisa