

**MASTER DEGREE PROGRAMME IN MATERIALS AND NANOTECHNOLOGY
(LAUREA MAGISTRALE IN MATERIALS AND NANOTECHNOLOGY, LM-53)
CALL FOR APPLICATIONS - A.Y. 2022 - 2023**

Art. 1

**Admission to the Master Degree Programme in Materials and Nanotechnology
(Laurea Magistrale in Materials and Nanotechnology, LM-53)**

6. The University of Pisa (hereafter “the University”), in collaboration with the Scuola Normale Superiore (hereafter “the School”), announces for the Academic Year 2022-2023 a public competition for admission to the Master Degree Programme in Materials and Nanotechnology (Laurea Magistrale in Materials and Nanotechnology, LM-53) offered jointly by the Departments of Civil and Industrial Engineering, Physics, and Chemistry and Industrial Chemistry of the University of Pisa. Detailed information on the Master of Science are available at the following web address:
<https://www.unipi.it/index.php/lauree/corso/11047>.
 - a. The Master of Science in Materials and Nanotechnology, for its specific connotations of educational and research activities, is a limited enrollment course. Enrollment is limited to 35 students including 6 reserved places for the internal students of the School and 10 reserved places for non-EU applicants not residing in Italy. Of the latter 10 places, 2 are reserved to Chinese students participating to the "Marco Polo" exchange program between Italy and China.
7. The competition is divided into two sessions as follows:
 - a. one session reserved to for non-EU applicants exclusively (citizens of countries not belonging to the European Union) and not residing in Italy (hereafter “non-EU⁴ Applicants”) - up to 10 positions available;
 - b. for EU applicants and non-EU applicants residing in Italy exclusively (hereafter “EU Applicants”) - up to 20 positions available.
8. If fewer than 10 non-EU selected applicants, or fewer than 5 internal students join the Master Degree Programme, the number of positions available for the EU applicants session will be increased by the equivalent number of positions remaining vacant in the non-EU applicants and in the SNS sessions, to a maximum of 36 positions.
9. Any vacant places, in case of exhaustion of the ranking of the second session, will be made available to EU and non-EU candidates residing in Italy (“EU candidates”). Requests will be accepted with reserve in order of presentation, until all available places will be assigned. The Degree Course Board will assess the requirements and qualifications and approve admission to the course. The methods of presentation and the number of vacancies will be published on the website:
<https://www.unipi.it/index.php/immatricolazioni-e-iscrizioni/item/11815-materials-andnanotechnology>
10. At the end of the selection procedures, the Selection Committee will provide a final ranking list of eligible applicants for each selection session. Admitted applicants, according to the

⁴ Law n. 189/2002 art. 26: "Access to university courses is allowed - with the same conditions as Italian students - to: students with a permit of stay for dependent employment, self-employment, family reasons, political asylum, humanitarian asylum or religious reasons; all foreigners regularly living in Italy for at least one year and with a higher qualification obtained in Italy; as well as to foreigners - wherever resident - with final diplomas from Italian schools abroad or foreign or international schools - operating in Italy or abroad - and subjected to bilateral agreements or special laws for the acknowledgment of titles and satisfying the general conditions required for entry to study. Citizens from Norway, Iceland, Liechtenstein, Switzerland and the Republic of San Marino are admitted under the same conditions as EU citizens. For extra-EU applicants - not residing in Italy - the relevant laws applies.

positions available for each session of the selection, will be appointed with a Rector Decree.

Art. 2

Admission Requirements

- 1) To be admitted to the competition, by the deadlines as per art. 3 and 4, applicants must satisfy one of the following conditions:
 - A) to hold a “Laurea di I livello” in Engineering belonging to class L-8 (Ingegneria dell'Informazione) or L-9 (Ingegneria Industriale), Chemistry belonging to class L-27 (Scienze e Tecnologie Chimiche), or Physics belonging to class L-30 (Fisica) issued by any Italian university, with the condition of having sustained at least 60 CFUs in the following disciplines⁵:
 - CHIM/01; CHIM/02; CHIM/03; CHIM/04; CHIM/05; CHIM/06; CHIM/07; FIS/01; FIS/03; FIS/07; MAT/02; MAT/03; MAT/05; MAT/06; MAT/07; MAT/08; MAT/09; INF/01; ING-IND/03; INGIND/04; ING-IND/06; ING-IND/07; ING-IND/08; ING-IND/09; ING-IND/10; ING-IND/11; ING-IND/12; ING-IND/13; ING-IND/14; ING-IND/21; ING-IND/22; ING-IND/24; ING-IND/25; ING-IND/26; ING-IND/27; ING-IND/31; ING-IND/32; ING-IND/33; INGIND/34; ICAR/08; ING-INF/01; ING-INF/02; ING-INF/03; ING-INF/04; ING-INF/06; ING-INF/07.
 - Of the above 60 CFUs at least 6 must be acquired in one of the disciplines: CHIMI/01; CHIM/02; CHIM/03; CHIM/04; CHIM/06 or CHIM/07.
 - B) To hold a “diploma di laurea triennale” in a different class respect to those indicated at point A), laurea specialistica, laurea magistrale, laurea “vecchio ordinamento”, with the condition of having sustained at least 60 CFUs in the following disciplines:
 - CHIM/01; CHIM/02; CHIM/03; CHIM/04; CHIM/05; CHIM/06; CHIM/07; FIS/01; FIS/03; FIS/07; MAT/02; MAT/03; MAT/05; MAT/06; MAT/07; MAT/08; MAT/09; INF/01; ING-IND/03; INGIND/04; ING-IND/06; ING-IND/07; ING-IND/08; ING-IND/09; ING-IND/10; ING-IND/11; ING-IND/12; ING-IND/13; ING-IND/14; ING-IND/21; ING-IND/22; ING-IND/24; ING-IND/25; ING-IND/26; ING-IND/27; ING-IND/31; ING-IND/32; ING-IND/33; INGIND/34; ICAR/08; ING-INF/01; ING-INF/02; ING-INF/03; ING-INF/04; ING-INF/06; ING-INF/07.
 - Of the above 60 CFUs at least 6 must be acquired in one of the disciplines: CHIM/01; CHIM/02; CHIM/03; CHIM/04; CHIM/06 or CHIM/07.
 - C) To hold a Bachelor of Science or equivalent first cycle degree awarded by a foreign University after the completion of at least three-year course of study, will be evaluated by the Selection Committee, who decides upon degree equivalence only for this competition purposes and on any university educational debts to be covered by the student, if selected.

⁵ CHIMI/01= Analytical Chemistry; CHIM/02=Physical Chemistry; CHIM/03=General and Inorganic Chemistry; CHIM/04=Industrial Chemistry; CHIM/05=Science and Technology of Polymeric Materials; CHIM/06=Organic Chemistry; CHIM/07=Chemical Foundations of Technology; FIS/01=Experimental Physics; FIS/03=Matter Physics 3; FIS/07=Applied Physics (to Cultural Heritage, Environment, Biology and Medicine); MAT/02=Algebra; MAT/03=Geometry; MAT/05=Mathematical Analysis; MAT/06=Probability and Mathematical Statistics; MAT/07=Mathematical Physics; MAT/08=Numerical Analysis; MAT/09=Operations Research; ING-IND/3=Flight Mechanics; ING-IND/04=Construction and Aerospace Structures; ING-IND/06=Fluid Dynamics; ING-IND/07=Aerospace Propulsion; ING-IND/08=Fluid machinery; ING-IND/09=Systems for Energy and the Environment; ING-IND/10=Industrial Technical Physics; ING-IND/11=Environmental Technical Physics; ING-IND/12=Mechanical and Thermal Measurements; ING-IND/13=Applied Mechanics; ING-IND/14=Mechanical Design and Construction of Machines; ING-IND/21=Metallurgy; ING-IND/22=Science and Technology of Materials; ING-IND/24=Chemical Engineering Principles; ING-IND/25=Chemical Plants; ING-IND/26 = Theory of the Development of Chemical Processes; ING-IND/27=Technological and Industrial Chemistry; ING-IND/31=Electrical; ING-IND/32=Converters, Machines and Electric Drives; ING-IND/33=Electrical Systems for Energy; INGIND/34= Industrial Bioengineering; ICAR/08=Mechanics of Materials; ING-INF/01=Electronics; ING-INF/02=Electromagnetic Fields; ING-INF/03 = Telecommunications; ING-INF/04 = Automatics; ING-ING/06=Electronics and Bioinformatics; ING-INF/07=Electrical and Electronic Measurements.

The admission of candidates holding a degree issued in a non-EU country will be conditional to the check and the legitimacy recognition of the degree, by the relevant Italian diplomatic authorities.

For the candidate who:

- a. holds a degree from the University of Pisa as referred to in paragraph A), the requirements are satisfied automatically;
 - b. holds a degree as referred to in paragraph A) from other Italian universities, it will be verified that they meet the admission requirements described in it and, in the event that verification is negative, the participation in the exams will not be permitted. If successful, the Examining Commission verifies also the possession of the curricular requirements and can identify learning activities, necessary for the acquisition of such requirements: if the total of missing credits is greater than 40 the participation in the tests will not be permitted, if the total is less than or equal to 40 candidates will be admitted to the tests and in the event of it being the winner will be enrolled to single Transition courses aimed at the recovery of the training activities mentioned;
 - c. holds a degree as referred to in paragraph C), the Commission will ensure the suitability of the idoneity of the degree and verification of the possession of the admission criteria and curricular requirements.
- 2) With respect to the selection reserved to non-EU Applicants, admission is extended also to applicants that have not graduated yet. In this case, a successful application will be conditional upon the subsequent awarding of a degree and the submission of adequate documentation no later than July 31, 2022.
 - 3) With respect to the selection reserved to EU Applicants admission is extended also to applicants that have not graduated yet. In this case, a successful application will be conditional upon the subsequent awarding of a degree and the submission of adequate documentation no later than December 31, 2022.
 - 4) In addition to the academic degree, applicants must also have a good knowledge of the English language, corresponding to at least an intermediate level (B2 Level according to the Common European Framework of Reference for Languages). The Selection Committee will verify the level of knowledge of the English language during the interview.

Art. 3

Non-EU Candidates Applications

To apply for the competition, the candidate must, **by April 1st 2022**, under penalty of exclusion:

1. Register online before 11.00 am on **April 1st 2022**, only through the website www.studenti.unipi.it www.unipi.it/studenti/concorsispecialistica according to the instructions in the "Informazioni generali" ("General Information"). **After the deadline is no longer possible to enter the competition.**

After the procedure, the system issues a receipt of "the enrollment in the competition" The receipt, which has a unique progressive number, is the only document proving the correct registration for the competition: in case of doubt only candidates able to show it are allowed to participate.

2. for the assessment of the requirements and qualifications:
Register on the <https://applymcsenglish.unipi.it> portal and enter the application for the Master's Degree in Materials and Nanotechnology and proceed with uploading the necessary documentation **on-line only**.

During the online procedure it is mandatory, in the section Certificate of the Title and Exams:

- indicate family name, first name, place and date of birth, nationality, gender, marital status;
 - declare that the candidate has never been convicted for a criminal offence or that she/he has no pending criminal proceedings;
 - upload a copy of the degree certificate of the academic qualification referred to in the previous art. 2 with an indication of the year of first enrollment, of the degree course title, of its duration, of the final grade (if applicable) and of the University or Institute of University Education where it was obtained. For students who have obtained the qualification in Italy, it is sufficient to upload the self-certification of the title, pursuant to the D.P.R. 445/2000, with indication of the exams taken and the related Disciplinary Scientific Sectors. If the candidate is not yet a graduate, indicate where the degree is expected to be awarded, specifying the date on which the qualification will be awarded (which must not be later than 31/07/2022 for non-EU candidates and as of 31/12/2022 for EU applicants).
 - indicate the Cumulative Grade Point Average;
 - indicate the level of knowledge of the English language (and other foreign languages) specifying duration of studies and certification obtained;
 - indicate the permanent address and the mailing address (if different), where applicants wish to receive paper communications concerning their application. Applicants shall immediately contact the University if these addresses change as for the e-mail address, that is compulsory for the purposes of the application;
 - (for non-UE candidates) specify the Italian Embassy or Consulate, where they wish to submit their application for pre-registration in case of admission to the course.
 - indicate a valid e-mail address to receive all communications related to the application purposes, as well as a telephone number and a skype id.
3. Applicants shall include in the application together with the form cited in point 3) (all materials shall be in the Adobe pdf format and must use the file name shown):
- a. **Cv_Surname_Name.pdf**: a copy of their complete *Curriculum Vitae et Studiorum* (in English) covering their education programme, cultural and professional experiences and all other information that might help in the evaluation of the candidate;
 - b. **Certificate_Surname_Name.pdf**: copy of Degree Certificate (if applicable) and its translation if written in language other than English or Italian;
 - c. **Transcripts_Surname_Name.pdf**: the academic transcripts with the full list of courses and grades (in English or Italian). This list shall contain information regarding credits, units (or equivalent) received, the grades received for each class taken, and the date when the final examination (if applicable) was taken, provided by attaching the copy of the University Transcripts;
 - d. **Thesis_Surname_Name.pdf**: short abstract (maximum 5 pages) of the I level degree or equivalent final elaborate, or a short abstract (5 pages maximum) of the activities of Thesis in preparation, if the degree is not been awarded;
 - e. **Passport_Surname_Name.pdf**: a copy of the passport or any other valid international identity document
 - f. **English_Surname_Name.pdf** (not mandatory): a copy of the certificate of knowledge of the English language eventually held (at least intermediate level B2);
 - g. **Courses_Surname_Name** (not mandatory): a list of technical courses taken, specifying for each subject, according to the template provided in the application form: course name, hours, list of topics, hours per topic. Even if this attachment is not mandatory, it is highly recommended to attach it to the online application. The evaluation committee will assess the document along with the other titles submitted by the candidates;

- h. **Achievements_Surname_Name** (not mandatory): a list of competences and skills acquired by the candidate during his/her academic and professional experience, and deemed to be crucial for the admission to the Master Degree Programme (no more than 2.000 characters);
 - i. **Other_Surname_Name.pdf** (not mandatory): a copy of any other document or information that they deem suitable (works written in languages other than Italian, English, or French must be accompanied by a summary in one of the above languages).
4. According to art. 46 and 47 of D.P.R. n. 445/2000, Italian citizens and EU citizens are allowed to submit self-declarations. Non-EU citizens legally residing in Italy are allowed as well, only with reference to information and facts which can be certified or attested by Italian public bodies.
5. **Applications with missing information will not be considered valid.** Integrations to the application after the call deadline will not be accepted in whatsoever circumstance.
6. The University of Pisa is entitled to check the truthfulness of the declarations and the documentation submitted by the candidates, and may require the submission of original documents. In case of false statements the University can decide at any time, by justified Rector Decree, the exclusion of the candidate from the selection procedure without prejudice to the resulting criminal law liability.
7. In case of problems with the online submission system, please contact the Direzione Servizi per la Didattica e gli Studenti, largo Bruno Pontecorvo, 3 - Pisa at the following contacts: +390502213429, e-mail: concorsinumerochiuso@adm.unipi.it.

Art. 4

EU Candidates Applications

Applicants are required to submit their application as provided for in Article 3 from **4 April to 31 August 2022 at 11 AM (GMT)**.

Art. 5

Selection procedure

1. The selection of candidates, for both sections of the competition, consists in the evaluation of their titles and an interview. The selection process is designed to assess the formation of each candidate, including the skills and development potential required to participate in the interdisciplinary and innovative educational program of the Master of Science in Materials and Nanotechnology.
2. The Selection Committee, composed of six members, of whom at least one lecturer from the School, and that is the same for both sections of the competition reserved for non-EU candidates and the EU candidate, is given by the Consiglio di Corso di Laurea in Materials and Nanotechnology, and nominated by the Rector of the University of Pisa.
3. The assessment is made on a scale of 100 points overall, of which:
 - Up to 70 points for titles;
 - Up to 30 points for the oral test.
4. The assessment of titles will focus on the curriculum vitae et studiorum of candidates, titles, courses taken and other documents submitted by the candidate. Candidates will be admitted to interview if their titles have achieved a minimum score of 49/70.
5. For non-EU applicants, the interview will be held via video conferencing (using Skype or similar software platforms to the Commission's discretion) at the Embassies and Italian Consulates or other places deemed appropriate by the Evaluation Commission in order to

ensure the adequacy of candidate identification procedures. If the conversation does not take place at an Embassy or Consulate, the applicant must show the Commission before the start of the interview, the identification document already attached to the application submitted electronically.

6. For EU citizens, the interview will be held in Pisa at the University. Applicants can apply to the Evaluation Committee, based with legitimate and justified reasons, to do the interview via videoconference (using Skype or similar software platforms to the Commission's discretion). In this case, the applicant must demonstrate to the Commission before the start of the interview, the identification document already attached to the application submitted electronically.
7. The candidate who is not at the terms in the schedule of the talks will be excluded from the final list. If the interview is held via videoconference, it is the responsibility of the candidate to ensure the required hardware availability (PC, webcam), the required software and a reliable internet connection.
8. During the interview, the Commission will examine the profiles of the candidates on the basis of their titles, and ensure that they meet the pre-technical requirements set out in Annex 1 and the level of knowledge of the English language.

Candidates that in the interview will have obtained a score less than 21/30 will be excluded from the merit list.

9. Those who have obtained a total final score of at least 70/100 will be deemed suitable for admission to the Master of Science.

Art. 6

Examination dates and communication of results

1. Admission tests are held on the following dates:

a) non-EU candidates - first session

Evaluation of titles:	before April 6, 2022
Interviews:	11 and 12 April 2022
Publication of final ranking list:	April 19 2022

b) EU Candidates - second session

Evaluation of titles:	before September 2, 2022
Interviews:	8 and 9 September 2022
Publication of final ranking list:	before September 12, 2022

2. The results of the assessment of the titles, specifying the date, time, place and manner in which the admitted candidates will perform the oral interviews, and the final ranking list will be published on the website: <https://www.unipi.it/index.php/immatricolazioni-e-iscrizioni/item/8457-materials-and-nanotechnology>.

Art. 7

Final ranking list and Winners

1. The winners are nominated by Decree of the Rector of the University in the order of their ranking, to cover up the number of places available for each section of the competition.
2. In case of withdrawal of one winner, the first eligible candidate in the order of their rankings will be admitted.
3. Non-EU admitted Candidates must send to the Secretariat their written consent for participation in the course and contact the Italian Embassy or Consulate in order to pre-

4. register for the "Master of Science in Materials and Nanotechnology (LM-53)" offered by the University of Pisa. The terms and conditions of pre-registration can be found on the website: <http://www.studiare-in-italia.it/studentistranieri/>.
5. Candidates not yet graduated, as provided in Art. 2, paragraphs 2 and 3 are admitted conditionally. Their registration is subject to the achievement and presentation of the qualification according to the methods and times indicated.

Art. 8 Enrolment

1. Successful candidates are required to matriculate at the University of Pisa in accordance with the terms and conditions that will be communicated at the time of publication of the final merit list on the website mentioned above. The winners with a foreign qualification must accompany the application for registration the original title, the official translation in Italian, the consular legalization of the same together with the 'Declaration of Value', issued by the Italian diplomatic representative in the country of the awarding University. If the degree was earned from a university issuing the *Diploma Supplement* it is possible, as an alternative to the Declaration of Value, to submit such a document, certified by the relevant authorities.

Art. 9 Tuition fees and contributions

1. Tuition fees depend on the family income and the country of origin of students, as provided by the regulations of the University of Pisa (please consult the website: <https://www.unipi.it/index.php/tuition-fees-and-financial-support/item/2274-unipi-scholarship>).
2. Students may apply for access to the grants provided by "Company of the Tuscany Region for the Right to Education" (DSU). The annual call for the allocation of grants is published in July on <http://www.dsu.toscana.it> website.
3. The University of Pisa offers n. 24 scholarships to the best 24 international students, who will enroll for the academic year 2022/2023 in degree courses in English. Scholarships will be awarded by evaluating the following factors: CV, interview, CGPA (Cumulative Grade Point Average) and country of origin of the applicant, giving priority to the least economically advantaged countries. Each scholarship will consist of:
 - a) First year of studies: 6 thousand euros and exemption from university fees compatible with the DSU scholarship;
 - b) Second year of the Master's Degree course: 8 thousand euros and a 50% reduction in university fees if the student has obtained at least 36 ECTS with an average grade of at least 25/30;
 - c) More information on <https://www.unipi.it/contribution>.
4. This Master's degree program is part of the "Invest your Talent in Italy" scholarship program which aims to support students from the following countries: Armenia, Azerbaijan, Brazil, Colombia, South Korea, Egypt, Ethiopia, India, Indonesia, Iran, Ghana, Kazakhstan, Mexico, People's Republic of China, Tunisia, Turkey, Vietnam. Scholarships are awarded to students admitted to the master's degree program and are funded by the Ministry of Foreign Affairs and International Cooperation (MAECI). To apply, visit the webpage www.postgradinitaly.esteri.it.

For other grants, consult the web page <https://www.unipi.it/index.php/isciversi-all-universita-di-pisa/itemlist/category/508-tasse-universitari>.

Art. 10

Procedure responsibility

The person in charge of all administrative procedure is Dr Stefania Milella, in compliance with the Law 241/1990, art. 4 and subsequent amendments and additions. Candidates have the right to access the acts of the admission procedure, in compliance with the terms and conditions of the existing legislation, as well as with the Law 241/1990 implementing the regulation, issued by the Rector Decree no.133, of January 26, 1995, and its subsequent modifications and additions.

Art. 11

Data processing

The personal data provided by the candidate will be processed for the purposes of managing the admission tests to limited attendance degree courses. The processing of personal data will be carried out in an automated and manual manner and will be stored according to the terms of the law. The provision of data is mandatory and any refusal to provide such data results in the impossibility of evaluating the test. The data may be disclosed to third parties who will be in charge of their IT management and will be disseminated for the purposes and within the enrolment deadline. Candidates will be able to exercise their rights governed by sections 2, 3 and 4 of Chapter III of EU Regulation no. 679/2016 (eg. Rights of information and access, of rectification and cancellation, of limitation and opposition to processing, of portability of personal data), by addressing their requests to the email address concorsinumerochiuso@unipi.it .

The information extended pursuant to art. 13 of the EU Regulation n. 679/2016 can be consulted at the link <https://www.unipi.it/index.php/documenti-ateneo/item/12721> .

ANNEX 1 TO THE CALL FOR APPLICATION FOR THE ADMISSION TO THE MASTER DEGREE PROGRAMME IN MATERIALS AND NANOTECHNOLOGY, A.A. 2022/2023

Candidate's Profile: requested skills and background

The courses included in the Master of Science in Materials and Nanotechnology are based on the assumption that students are in possession of solid basic knowledge of both technological and methodological level, which characterize the three-year degree programs in Engineering, Chemistry, Physics and related.

It is expected that students of the Master of Science in Materials and Nanotechnology are in possession of good analytical skills and synthesis, as well as problem solving skills. During the interview, the candidates may be addressed technical questions regarding the activity carried out in the course of the degree thesis as well as the entire curriculum of the student. Moreover, the questions will be addressed in the form of problem (unstructured) to solve, to test the ability and readiness of the candidate's reasoning.

In general, it is required the knowledge of the concepts and basic principles relating to materials and nanotechnology, in particular as regards:

- Mathematics: analytic geometry (equations of lines, circles, parabolas, ellipses and hyperbolas in the plane), differential and integral calculus in one and two variables (limits, derivatives, maxima and minima, definite integrals), series, linear algebra (matrices, vectors, determinants and solving linear systems).
- Physics: kinematics of the material point, the principles of dynamics, work, energy, gravitation, elastic forces, electrical charge, field concept and potential, laws of flow and circulation of field, "resistive-capacitive-inductive" circuits;
- Chemistry: atomic structure, bonds, organic and inorganic chemical compounds, errors and uncertainty in experimental data, stoichiometry, chemical reactions, thermodynamics outline, states of matter, solutions, chemical equilibrium, the dissociation of water and pH, solubility product, chemical kinetics, electrochemistry.