



D.R. Rep. n. 1220 – 2022 Prot. n. 112965 del 29.09.2022 All. 6  
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## THE RECTOR

**Having regard** to Italian Law 168, 9 May 1989 establishing the Ministry of Higher Education, Scientific Research and Technology;

**Having regard** to Italian Law n. 240, 30 December 2010, “Norms regarding the organization of Universities, academic personnel and recruitment, as well as mandating the Government to provide incentives for quality and efficiency of the University system”, and in particular Art. 24, Art. 22, paragraph 9, and Art. 29, paragraph 5;

**Having regard** to Italian Law n. 241, 7 August 1990, as amended and supplemented, concerning administrative procedures and the right to access administrative documents;

**Having regard** to Law n. 183, 12 November 2011 (*Legge di Stabilità 2012*) and in particular Art. 15 regarding certifications and declarations;

**Having regard** to Italian Law n. 106, 15 April, 2004 and Presidential Decree n. 252, 3 May 2006, containing norms relating to depositing documents of cultural interest for public use;

**Having regard** to Law n. 232, 11 December 2016 (*Legge di Stabilità 2017*);

**Having regard** to Law n. 205, 27 December 2017 (*Legge di Stabilità 2018*);

**Having regard** to Law n. 145, 30 December 2018 concerning the “Estimated budget for the financial year 2019 and the multiannual budget for the three-year period 2019-2021;

**Having regard** to Leg. Decree n. 165, 30 March 2001, as amended and supplemented, in particular Articles 35, 35bis, 36, 37, 38 and 57;

**Having regard** to Presidential Decree 445, 28 December 2000, containing regulations concerning administrative documentation (*Testo Unico*);

**Having regard** to Leg. Decree 196, 30 June 2003 and Leg. Decree n. 101, 10 August 2018, implementing the UE Regulation n. 679/2016 regarding personal data protection;

**Having regard** to Leg. Decree n. 82/2005, 7 March 2005, “Digital Administration Code”, as amended and supplemented;

**Having regard** to Leg. Decree n. 198, 11 April 2006, “Equal Opportunities for Men and Women”;

**Having regard** to Leg. Decree n. 49, 29 March 2012 for disciplining the programming, monitoring and assessment of budget management and recruiting policies adopted by universities;

**Having regard** to Leg. Decree n. 5, 09 February 2012 converted into Law n. 35, 04 April 2012, “Urgent Dispositions as to Simplification and Development”;

**Having regard** to Presidential Decree n. 62, 16 April 2013, “Civil Servants’ Behaviour Code”;

**Having regard** to Leg. Decree n. 33, 14 March 2013, “Restructuring the sphere of advertising, transparency and dissemination of information by Public Administrations”, as amended and supplemented;

**Having regard** to Ministerial Decree n. 243, 25 May 2011, concerning criteria and parameters for preliminary assessment of public selection candidates, recipients of contracts as indicated in Art. 24, paragraph 2, letter c) of Italian Law n. 240, 30 December 2010;

**Having regard** to Ministerial Decree n. 159, 12 June 2012, on the determination of competition areas, grouped into competition macro-areas;

**Having regard** to Ministerial Decree n. 855, 30 October 2015, redetermining macro-sectors and competition sectors;

**Having regard** to the Statute of the University of L’Aquila, established by the Rector’s Decree n. 36-2017, 20 February 2017, entered into force as of 9 March, 2017;

**Having regard** to the University of L’Aquila’s Code of Ethics/Behaviour established by the Rector’s Decree n. 734-2020, 27 July 2020;

**Having regard** to the University of L'Aquila's Regulations concerning the meetings of the Academic Bodies using telematic technology established by the Rector's Decree n. 467-2016, 18 April, 2016, as modified by the Rector's Decree n. 318-2020, 17 March, 2020;

**Having regard** to the University's Regulations as to recruitment of fixed-term university Researchers established by Rector's Decree n. 621-2012, 05 April 2012 as modified by Rector's Decree n. 860-2013, 05 June 2013, by Rector's Decree n. 1490-2015, 29 October 2015, by Rector's Decree n. 225-2019, 01 April 2019 and lastly by Rector's Decree n. 580-2020, 29 May 2020;

**Having regard** to the University's Regulations as to assignation of teaching tasks to professors and researchers established by Rector's Decree n. 915-2017, 19 December 2017;

**Having regard** to the resolutions by the University Academic Bodies concerning staff planning and distribution of resources for recruiting First and Second Tier Professors and Researchers;

**Having regard** to Directorial Decree n. 3277 dated 30 December 2021 "Public Announcement for submitting intervention proposals for creating and strengthening "ecosystems for innovation", building "R&S territorial leaders – Ecosystems for Innovation - within the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNRR), Mission 4, Education and Research – Part 2 From Research to Enterprise – Investment 1.5, funded by the European Union – NextGenerationEU;

**Having regard** to Directorial Decree n. 1057 dated 23 June 2022 financing the project Vitality submitted by the University of L'Aquila as a HUB for a total amount € 155.996.558,73, CUP E13C22001060006;

**Having regard** to the resolution of the Department of Physical and Chemical Sciences n. 10/2022 dated 20 September, 2022 - forwarded with note Prot. n. 1618 on 20 September, 2022 and received the same date with Prot. n. 108831 - concerning the request of a selection procedure to recruit 1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law n. 240/2010, 30 December 2010, for the Academic Recruitment Field 02/B1 – Experimental Physics of Matter, Academic Discipline **FIS/03** – Physics of Matter;

**Having regard** to the resolution of the Department of Physical and Chemical Sciences n. 11/2022 dated 22 September, 2022 - forwarded with note Prot. n. 1653 on 22 September, 2022 and received the same date with Prot. n. 110425 - concerning the request of a selection procedure to recruit 1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law n. 240/2010, 30 December 2010, for the Academic Recruitment Field 02/B1 – Experimental Physics of Matter, Academic Discipline **FIS/03** – Physics of Matter;

**Having regard** to the resolution of the Department of Biotechnological and Applied Clinical Sciences n. 13 dated 19 September, 2022 - forwarded with note Prot. n. 1955 on 20 September, 2022 and received the same date with Prot. n. 108839 - concerning the request of a selection procedure to recruit 1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law 240/2010, 30 December 2010, for the Academic Recruitment Field 05/G1 – Pharmacology, Clinical Pharmacology and Pharmacognosy, Academic Discipline **BIO/14** – Pharmacology;

**Having regard** to the resolution of the Department of Industrial and Information Engineering and Economics n. 206 dated 20 September, 2022 - forwarded with note Prot. n. 3576 on 21 September, 2022 and received the same date with Prot. n. 109517 - concerning the request of a selection procedure to recruit 1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law 240/2010, 30 December 2010, for the Academic Recruitment Field 09/E2 – Electrical Energy Engineering, Academic Discipline **ING-IND/32** – Power Electronic Converters, Electrical Machines and Drives;

**Having regard** to the resolution of the Department of Industrial and Information Engineering and Economics n. 205 dated 20 September, 2022 - forwarded with note Prot. n. 3580 on 21 September, 2022 and received the same date with Prot. n. 109543 - concerning the request of a selection procedure to recruit 1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law 240/2010, 30 December 2010, for the Academic Recruitment Field 09/B3 – Business and Management Engineering, Academic Discipline **ING-IND/35** – Business and Management Engineering;

**Having regard** to the resolution of the Department of Industrial and Information Engineering and Economics n. 207 dated 20 September, 2022 - forwarded with note Prot. n. 3584 on 21 September, 2022 and received the same date with Prot. n. 109568 - concerning the request of a selection procedure to recruit



1 fixed-term Researcher in compliance with Art. 24, Par. 3, Letter a) of Italian Law 240/2010, 30 December 2010, for the Academic Recruitment Field 09/A1 – Aeronautical and Aerospace Engineering and Naval Architecture, Academic Discipline **ING-IND/06** – Fluid Dynamics;

**Having regard** to the resolution n. 284/2022 issued by the Board of Directors on 28 September 2022, after approval expressed by the Board of Auditors (minutes n. 8/2022 dated 28 September 2022), authorizing the public selection procedures as specified above;

**Having verified** that the expense to reward the fixed-term Researchers for the three-year period for the above-mentioned procedure is equal to € 152.567,12 and that the expense, at the budget item CA. 04.01.01.02.01, shall be allocated on: Funds outside the University : PNRR Funds – Ecosystems for Innovation;

### DECREES THE FOLLOWING:

#### Art. 1 – Public Selection, position available and objective of the contract

A public selection procedure is being held at the University of L'Aquila to recruit **n. 6** (six) fixed-term (3 year) full-time Researchers in compliance with Art. 24, Par. 3, Letter a) of Italian Law n. 240/2010, 30 December 2010, and related University Regulations, within the National Recovery and Resilience Plan - Piano Nazionale di Ripresa e Resilienza – PNRR MUR – M4C2 Investment 1.5 “Public Announcement for submitting intervention proposals for creating and strengthening “ecosystems for innovation”, building “R&S territorial leaders” – Ecosystems for Innovation”, funded by the European Union – NextGenerationEU, CUP: E13C22001060006, specified as follows:

	DEPARTMENT	Academic Recruitment Field	Academic Discipline	N. of positions
<b>A</b>	Department of Physical and Chemical Sciences	02/B1 – Experimental Physics of Matter	<b>FIS/03</b> – Physics of Matter	1 (position <b>A</b> )
<b>B</b>		02/B1 – Experimental Physics of Matter	<b>FIS/03</b> – Physics of Matter	1 (position <b>B</b> )
<b>C</b>	Department of Biotechnological and Applied Clinical Sciences	05/G1 –Pharmacology, Clinical Pharmacology and Pharmacognosy	<b>BIO/14</b> – Pharmacology	1
<b>D</b>	Department of Industrial and Information Engineering and Economics	09/E2 – Electrical Energy Engineering	<b>ING-IND/32</b> – Power Electronic Converters, Electrical Machines and Drives	1
<b>E</b>		09/B3 – Business and Management Engineering	<b>ING-IND/35</b> – Business and Management Engineering	1
<b>F</b>		09/A1 – Aeronautical and Aerospace Engineering and Naval Architecture	<b>ING-IND/06</b> – Fluid Dynamics	1

1. Attachments A, B, C, D, E and F form integral part of this selection announcement, indicating according to the Department’s resolutions, research, teaching, integrated teaching activities and services to the students object of the contract, foreign language requisite, maximum number of publications and, with due regard to criteria and parameters indicated in Ministerial Decree n. 243, 25 May 2011, further assessment criteria of the candidates.

The candidate’s Ph.D. thesis, in compliance with Ministerial Decree 243/2011, is to be considered a publication and included among the publications submitted.



2. For teaching tasks reference has to be made to the University's Regulations as to assignment of teaching tasks to professors and researchers established by Rector's Decree n. 915-2017, 19 December 2017 as amended and supplemented.

## Art. 2 – Admission Requisites and Causes for Exclusion

1. The selection procedure is open to Italian, EU and non EU citizens holding an Italian residency permit as per Leg. Decree 165/2001, Art. 38 possessing a Ph.D. in subjects related to the Academic Discipline object of the selection procedure or an equivalent degree obtained in Italy or abroad.

Admission requisites must be held by applicants within the deadline for application submission. If obtained abroad, the Ph.D. must be accompanied by the official declaration of equivalency issued by the relevant authorities of the foreign country. If the candidate is not in possess of such a documentation within the deadline for application submission, to be submitted anyhow within the date of official appointment, he/she shall submit a copy of the application for obtaining such a declaration.

2. The following categories may not participate in this public selection procedure:
  - a) First or second tier university Professors or Researchers already holding an open-ended contract or who have held such positions in the past either, even if terminated;
  - b) Individuals who have already held fixed-term research contracts as provided in Arts. 22 and 24 of Italian Law 240/2010 at the University of L'Aquila or at other Italian Universities, whether public, private or online, or bodies under Par. 1 of Art. 22 of Italian Law 240/2010 for a period, in addition to the intended duration of the competition contract, exceeding a total of 12 years, even if not continuing. Maternity or sick leave as provided in the laws in force shall not be included in the duration of the aforementioned employment contracts;
  - c) Individuals not entitled to exercise civil and political rights;
  - d) Individuals who have been dismissed or relieved from office with a Public Administration for consistently poor performance or have been dismissed from a civil service job as provided in Art. 127, Letter d) of Presidential Decree 10/1/1957, No. 3.
  - e) Individuals who are related, up to the fourth degree, to professors belonging to the recruiting Department including the Rector, General Director, any member of the Board of Trustees.
3. The contract outlined for this selection procedure cannot be accumulated with other research grants as per Italian Law 449/1997 Art. 51 and Italian Law 240/2010 Art. 22.
4. Candidates are granted conditional admission, as the University Administration reserves the right to review applications and to exclude for just cause at any time until the end of the procedure. In this case a decree shall be issued by the Rector and the excluded candidate shall be notified by the Administration by registered post with notice of receipt or by certified e-mail (PEC) if provided in the application.

## Art. 3 - Application Submission Procedure and Deadline

1. To participate in the selection, candidates must submit their application **within 30 days** from the day following publication of the announcement in the Gazzetta Ufficiale della Repubblica Italiana – 4° Serie speciale – Concorsi ed Esami. The publication of the selection announcement is also posted in the University, Ministry and EU websites.
2. The application for the selection procedure as well as qualifications, documents and publications are to be submitted telematically, on pain of exclusion, via the online tool available at <https://pica.cineca.it/univaq>. The computer application necessarily requires that the candidate has an e-mail account in order to register or he/she may also log in using the SPID credentials. Candidates must enter all data required to fill in application and attach all documents in .pdf format. The application form must be filled in all its parts according to the instructions given by the telematic procedure. No other ways of presenting applications or documents for the procedure are allowed, except for the case described in Art. 5, paragraph 2 of this announcement.



Within the deadline for application the system allows to save a draft of the application. The date of telematic submission of the application shall be certified by a receipt sent automatically by the system.

**Applications received after the deadline set in this selection announcement shall not be considered.**

An identification number shall be assigned to each application which, along with the selection procedure code indicated in the computer application, shall be quoted in any further notice.

For any technical problems candidates may contact technical support at: [univaq@ Cineca.it](mailto:univaq@ Cineca.it).

The application submission shall be perfected and concluded in the following ways:

- **By digital signature** using smart card, USB token or remote signature which allow the owner to sign general documents by means of a signature software or a Remote Signature web portal made available by the Auditor. Those who have a Digital Signature smart card or USB token shall verify that they are compatible with the Digital Signature system integrated in the system server. If so, the owner may sign the application directly in the system server (e.g. ConFirma);
- **Those who do not have compatible digital signature devices and the Remote Digital Signature Owners** who may access a web portal for signing general documents shall save in their own PC the .pdf file generated by the system and, without modifying it, digitally sign it in CADES format. A .p7m file will be generated, which shall be uploaded again to the system. Any editing to the file before signing with the Digital Signature shall interfere with the automatic check of correspondence between the content of such a document and the original, and this will bring to the application exclusion;
- **If none of the above-mentioned options can be used** candidates shall save in their own PC the .pdf file generated by the system and, without modifying it, print and sign it with full original signature in the last page of the printed document. A scanned .pdf copy of such a document shall be produced and the file thus obtained shall be uploaded to the system.

**It is not necessary to sign the application if the candidate logs in using the SPID credentials.**

3. All applications are subject to verification. **In any case the following shall be cause for exclusion:**
- omission of signature of application, in accordance with laws and regulations;
  - not including a copy of the official declaration of equivalency of the Ph.D. obtained abroad issued by the relevant authorities of the foreign country OR of a copy of the application for obtaining such a declaration;
  - not including a copy of a valid identification document.

Applications deemed as lacking the required elements specified in the selection announcement or not in compliance with what specified in this article shall be excluded by Rector's Decree and candidates shall be notified of the said exclusion by registered post with notice of receipt or by certified e-mail (PEC).

4. In his/her application the candidate is required to declare the following:

- 1) Surname and name;
  - 2) Date and place of birth;
  - 3) Tax code (codice fiscale);
  - 4) Residency;
  - 5) Citizenship;
  - 6) The selection procedure they want to participate in;
  - 7) That he/she has the following requisites for participation as indicated in Art. 2 of this announcement;
  - 8) That he/she is in possession of his/her civil and political rights
- a) **Italian candidates** shall also state on their own account:
- Which electoral college they are registered in (municipality) and any reasons for lack of registration or deletion;
  - Their current situation with regard to military service;



- b) **Foreign candidates** shall also state on their own account:
- That they are in possession of their civil and political rights in their country or, supply the reasons for lack thereof;
  - 9) That they have not been convicted of a crime nor are they aware of being subject to criminal proceedings or of any pending criminal proceedings against them;
  - 10) That they have not been dismissed or relieved from office with a Public Administration for consistently poor performance, or that they have not been dismissed from a civil service job as provided in Art. 127, Letter d) of D.P.R. 10 January 1957, n. 3;
  - 11) That they are not related, up to the fourth degree, to professors belonging to the recruiting Department including the Rector, General Director, any member of the Board of Trustees;
  - 12) That they do not have a position as first or second tier university professors or as open-ended contract Researchers, and have not held such positions in the past either, even if terminated;
  - 13) That they have not already held fixed-term research contracts as provided in Arts. 22 and 24 of Italian Law 240/10 at the University of L'Aquila or at other Italian Universities, whether public, private or online, bodies under Par. 1 of Art. 22 of Italian law 240/10 **for a period, in addition to the intended duration of the competition contract, exceeding a total of 12 years, even if not continuing;**
  - 14) **if not an Italian citizen**, that he/she has an adequate knowledge of the Italian language;
  - 15) that he/she is aware that the Examining Board shall be nominated by Rector's Decree published on the University's Albo Ufficiale and posted on the relevant page of the university website [www.univaq.it](http://www.univaq.it);
  - 16) that he/she is aware that a list of candidates admitted to the selection procedure is published on the University's Albo Ufficiale and posted on the relevant page of the University website [www.univaq.it](http://www.univaq.it) after the preliminary meeting of the Examining Board;
  - 17) that he/she is aware that the assessment procedure adopted by the Examining Board in the first session and the interview dates are published for at least seven days on the University's Albo Ufficiale and posted on the relevant page of the university website [www.univaq.it](http://www.univaq.it), in all effects representing official notice to the candidates participating;
  - 18) that he/she is aware that all documents related to the selection procedure together with decree of approval are published on the University's Albo Ufficiale and posted on the relevant page of the university website [www.univaq.it](http://www.univaq.it), in all effects representing official notice to the candidates participating.
5. In their applications, candidates must include their selected mailing address for notifications, a telephone number, a mobile number and an e-mail address. Any changes in the above information must immediately be notified to the Settore Concorsi e Selezioni Office – Palazzo Camponeschi - Piazza S. Margherita 2 – 67100 L'Aquila, e-mail: [conc@strutture.univaq.it](mailto:conc@strutture.univaq.it).
- In compliance with Law 104/1992, candidates with disabilities must apply for any necessary aid.
6. All declarations made by candidates are to be considered in compliance with Presidential Decree n. 445, 28 December 2000 as amended and supplemented.
- Non-EU citizens** with a regular residence permit may use the Personal Declarations of Certification in accordance with the procedure laid down for EU citizens whenever it is necessary to provide proof of status, facts or personal qualities certifiable or confirmable by Italian public agencies or if the production of self-executed certificates takes place under international agreements between Italy and the applicant's country of origin.



7. The Administration shall carry out a verification process on the contents of declarations. Any false declarations shall lead to the candidate losing any benefits obtained thanks to said declarations and are subject to related laws.
8. The University Administration declines all responsibility for un-received notifications due to the candidate's failure in providing a correct address or not notifying the University in due time of any change in the address given in the application or for any postal or telegraphic services, misdeliveries, or due to third parties, unforeseeable events or force majeure.
9. **Candidates shall not be able to modify their applications after the indicated deadline. Applications deemed as lacking the required elements specified in Art. 2 of the selection announcement or the declarations specified in Paragraph 4 of this article shall be excluded by Rector's Decree and candidates shall be notified of the said exclusion.**

#### Art. 4 – Required Application Attachments

Candidates must also attach the following to their applications:

- a) A photocopy of a valid identity document;
- b) A photocopy of their tax code (codice fiscale);
- c) A Curriculum Vitae listing their scientific and teaching activities, written in Italian and in English;
- d) A list of qualifications;
- e) A copy of qualifications (**only for those which cannot be presented with a personal declaration of certification**) complete with a certification of authenticity and certified Italian translation if written in a language other than English;
- f) A numbered list of publications;
- g) A list of the candidate's teaching experience indicating the University/Body, the period and the subject taught;
- h) Publications (a maximum number as indicated in the Attachments to this selection procedure);
- i) A copy of residency permit (non EU citizens).

**All qualification certificates issued by Italian Public Administration Authorities must only be self-certified as pursuant to Italian Law 183/2011.**

Non EU Citizens with a regular Italian residence permit may submit original or scanned copies of qualifications, authenticated or certified copies of the original.

#### Art. 5 - Publications

1. Publications presented must be submitted only in .pdf format in the dedicated section of the telematic procedure at <https://pica.cineca.it/univaq>.
2. **Each publication shall not exceed the limit of 30 megabyte.** Those publications exceeding the limit of 30 megabyte shall be indicated in a numbered list to be entered in the online platform and uploaded in .pdf format to a digital medium (USB, CD, DVD) to be posted within the application deadline by registered mail, express post or package or service with notice of receipt to the following address: Settore Concorsi e Selezioni – Palazzo Camponeschi - Piazza S. Margherita 2 – 67100 L'Aquila. The date when the envelope was accepted by the post office or express service company shall be taken into consideration. Any applications whose publications (exceeding the 30 megabyte) shall be excluded that, though posted within the deadline under comma 1 of Article 3 of this selection announcement, do not arrive at the University Administration within the fifth day after the designated deadline. In the latter case the date of arrival at the University shall be taken into consideration. The University Administration declines all responsibility for any non-deliveries or misdeliveries of the publications, or other problems due to third parties, unforeseeable events or force majeure. The candidate must indicate on the envelope containing the publications: the University issuing the selection procedure, the requesting



Department, the academic recruitment field, academic discipline, position being applied for, name, surname, mailing address for all selection procedure related notifications, selection procedure code and identification number assigned by the computer application. If the maximum number of publications indicated in the Attachments to this selection announcement is not observed, the system shall not allow to complete the application procedure.

Candidates cannot make references to other publications/documents presented previously to the University of L'Aquila or to any other administration/institution.

3. Works published in Italy will be assessed if they comply with legal standards and are pursuant to Leg. Decree n. 660/1945 as amended by Italian Law 106/2004 and Presidential Decree n. 252/2006. This requires certification to be provided with the application or a personal declaration pursuant to Presidential Decree n. 445/2000; for works published abroad the date and place of publication must be indicated.
4. Publications written in a foreign language must be accompanied by a certified translation into Italian by official translator or consulate/embassy. The translation process is not required for publications written in French, English, German and Spanish.

#### **Art. 6 - Renouncing Participation**

Candidates wishing to renounce participation in the selection procedure are required to write to the Rector to declare their intentions, including in their letter a photocopy of a valid identity document, to the following address: Settore Concorsi e Selezioni – Palazzo Camponeschi - Piazza S. Margherita 2 – 67100 L'Aquila, e-mail: [conc@strutture.univaq.it](mailto:conc@strutture.univaq.it). Their renouncement shall be made official during the first meeting following receipt of renouncement.

#### **Art. 7 - Nomination of the Examining Board**

1. The Examining Board is appointed by a Rector's Decree upon nomination of the Department requesting the position as per Regulations as to recruitment of fixed-term university Researchers appointment indicated in the introduction to this selection announcement.
2. The Rector's Decree appointing the Examining Board shall be published on the University's Albo Ufficiale and on the University website.
3. From the date the Rector's Decree nominating the Examining Board is published candidates have 10 (ten) days to state their opposition to any of the components of the Board. If the cause of the objection arises after the time indicated above so long as before the date of the Board's taking office, the period shall run from its occurrence. After this period, and anyhow after the Board's taking office, no instances may be presented.
4. The Board nominates a President and a Secretary.
5. The Board operates with the presence of all its members and takes decisions unanimously.
6. Participation in all Board activities is mandatory for all members.
7. The Board, after notifying the Head of the selection procedure, may hold meetings using telematic technology. At the end of the meeting the minutes must be drawn up, approved, and signed by the Secretary who has actually drawn them up. The other members of the Examining Board underwrite a statement in which they declare that they have joined the meeting and undersigned the minutes and then forward them telematically to the competent administration office. Where applicable, reference has to be made to the University's Regulations (Rector's Decree n. 467-2016, 18 April 2016 as modified by Rector's Decree n. 318-2020, 17 March 2020).
8. Expenses incurred may be reimbursed in accordance with the University's Regulations pursuant to Art. 7, Paragraph 12 in reference to the recruitment of fixed-term Researchers.

#### **Art. 8 - Role and Duties of the Examining Board**



1. In the first session the Board, having determined that in compliance with related laws, no incompatibility factors are present, outlines the preliminary assessment criteria and procedures for selection in compliance with the parameters indicated in Ministerial Decree n. 243, 25 May 2011, and the criteria and specific functions to be carried out by the Researcher indicated by the Department and stated in Attachments A, B, C, D, E and F to this selection announcement.

The Board also establishes the criteria to confer points to qualifications and publications of those candidates who, after preliminary assessment, shall be admitted to the interview, together with the criteria for testing their English language skills, and Italian language skills for foreign applicants.

2. The Head of the selection procedure is immediately notified of the above-mentioned results which are to be published on the University's Albo Ufficiale and on the website for at least 7 days before the Board can move on to the next phase of the selection procedure. After determining the above said criteria and having read the Rector's Decree concerning the list of candidates admitted to the selection procedure, each member of the Board must state for the record that no incompatibility factors and conflict of interest are present.

3. The above-mentioned preliminary procedure initially involves determining if the candidates possess the requisites for participation in the light of what indicated in the announcement.

The selection is carried out by assessing the candidates with a motivated analytic judgement on their qualifications, CVs and publications, including their Ph.D. thesis.

4. Following preliminary assessment, the Board will admit the most worthy candidates - 10 to 20 per cent of the original candidates – and no less than six in number - to participate in a public discussion of their qualifications and scientific work; all candidates shall be admitted to the discussion should their total number be equal to or less than six.

5. The list of candidates admitted to the interview by the Board along with the analytic evaluations, the notification of date, place and time of the interview and of the foreign language test, is published on the University's Albo Ufficiale and on the website at least 10 days before the interview. **This is to be considered an official notification to candidates. Candidates are required to appear on the date and place scheduled for their interview with a valid identity document without any further notification. If the candidate does not show up, this shall be considered final renunciation to the selection procedure.**

Throughout the period of validity of the temporary Regulations concerning the procedures for carrying out interviews using telematic technology in the selection procedures for RTD/A and RTD/B as well as interviews for testing language skills in the selection procedures for First and Second Tier Professors, established by the Rector's Decree n. 339-2020, 26 March 2020, the interview may be carried out by using the audio and video tools according to the Instructions on telematic connection at <https://www.univaq.it/section.php?id=1532>. In the section "Candidates admitted to interview" a Notice shall be published following which candidates must fill in, sign and send within the date set for the interview a declaration to the following e-mail address: [concRTDA@strutture.univaq.it](mailto:concRTDA@strutture.univaq.it).

**Not sending such a declaration shall be considered final renunciation to the selection procedure.**

6. Following the interviews, the Board grades the candidate's qualifications, attributes a grade to each publication and assesses interview and foreign language skills. Once this has been completed the Board formulates a collegial judgement and, on the basis of the overall scores obtained, deliberates by majority the winner of the selection procedure.

7. All proceedings of the selection procedure are contained in the minutes of the meetings, including all the assessment results obtained during the preliminary meeting, grading of qualifications and publications submitted by candidates, the collegial judgement and evaluation of the interview to test English language skills. The results of all of the above are published on the University's Albo Ufficiale and on the website **which to all effects represents an official notification to the participants in the selection.**

**Art. 9 - Time Limits of the Selection Procedure**



1. The Board is to conclude all necessary actions within **four months** from the Rector's Decree nominating its members.
2. The Rector may extend the deadline only once and for no more than two months only in the case of exceptional and documented reasons brought forth by the President of the Board. If all procedures are not concluded even within the extended deadline the Rector shall proceed to the substitution of the Board members.

#### **Art. 10 - Determining Validity of Proceedings**

1. Within thirty days after the proceedings are consigned to the Settore Concorsi e Selezioni, the Rector issues a Decree establishing their validity and declaring the selected candidate. The Rector's Decree and the proceedings are published on the University's Albo Ufficiale and on the website. This, to all effects, represents official notification and from that date candidates have a period of time to file a complaint. The Decree is immediately passed on to the Department in charge of the appointment. The candidate selected shall also be notified.
2. If the Rector finds any irregularities in the proceedings he/she may make a motivated request to the Board to obtain rectification.

#### **Art. 11 - Appointment by the Department**

1. Within 60 days of the Rector's approval of the proceedings the Department Council that had requested the selection procedure must propose a date to officially appoint the new Researcher. The Head of the Department must convene the Council composed by the competent members. The proposal for the call is valid if approved by the vote of the overall majority of First and Second Tier Professors of the Department. In case of failure to reach such a majority the consequent resolution of not calling must be properly motivated with regard to failing the needs that had motivated the request of the selection procedure.
2. Failing to propose the call within the above-mentioned deadline or failing to properly motivate the resolution of not calling involves for the Department requesting the procedure the impossibility to start for one year a new selection procedure for the same Academic Discipline.
3. The Department's deliberation to call the Researcher must be approved by the University's Board of Directors.
4. Within 30 days of the date of the call approval by the Board of Directors the Researcher is invited to present all necessary documents for contract stipulation.

#### **Art. 12 - Drawing-up of contract**

1. A fixed-term, full-time employment contract shall be drawn up and underwritten by the Rector and by the Researcher. The contract is for three years, renewable once for further two years only, after obtaining positive assessment of teaching and research activities carried out, provided that the necessary funds are available. During maternity leave the contract is put on hold and expiration date is postponed for a period equal to that of compulsory leave of absence.
2. All elements regarding fixed-term researcher contracts specified in Art. 11 of the University's Regulations must be indicated within said contract.  
The number of hours required for teaching, integrated activities and services to the students is 350 hrs per year. Research activity is the subject of a specific scientific report to be submitted yearly to the Department's approval.

Given that the contract shall be pursuant to Leg. Decree n. 165/2001 Art. 53, it is important to state that it cannot be accumulated with other employment contracts, research grants, Ph.D. or Specialization courses, nor with any other earnings or grants from the University.

As regards the Researcher's duties the main duties established by law in reference to the category of fixed-term and full-time Researchers shall be applied.

The Researcher appointed will be required to abide by the University's Code of Behaviour, not doing so shall lead to termination of contract. The Researcher shall also abide by norms regarding security, as established in Leg. Decree n. 81/2008 as amended and supplemented and also contact



the Health and Safety Service of the University to gather information on prevention measures to abide by while carrying out research.

3. The position is subject to all laws regarding termination.

#### **Art. 13 - Salary and Social Security Benefits**

The gross annual salary for fixed-term Researcher corresponds to € **50.397,09**. The contract is subject to all social security and fiscal taxes provided for all contracts entered with the University of L'Aquila.

#### **Art. 14 - Documents for Contract Stipulation**

The Researcher selected shall present all required documents together with all declarations certifying their requisites for appointment as pursuant to Presidential Decree 445/2000 art. 46 and 47 to the University's Settore Personale Docente e Ricercatori Office as specified in Art. 3, Paragraph 4, numbers 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13 in this announcement. The Researcher shall also present a personal declaration of certification regarding their marital status, household members, whether they belong to legally protected categories, whether they receive a pension, whether they are members of professional registers; they must also declare that they are not employed in any other public or private company or institution as pursuant to Presidential Decree 445/2000, Art. 46 and 47.

The selected candidate, if already employed by a public administration, must declare it in order to take a leave of absence for all the contract period, unpaid and without social security contributions, or an "out of role" position where such position is provided for in their administration system.

Before starting work the Researcher must undergo a medical check-up to obtain a certificate from the University doctor stating that their health allows them to carry out the job duties required; the Researcher can contact the Settore Personale Docente e Ricercatori Office to make an appointment with the doctor.

The University reserves the right to carry out spot checks to verify the information and certification presented.

#### **Art. 15 - Personal Data**

The processing of candidates' personal data is disciplined by Leg. Decree n. 196, 30 June 2003 and UE Regulation n. 679/2016. Personal data supplied by the candidates in the application form shall be collected by the offices of the University and processed for the purposes of the procedure and for the management of relations ensuing therefrom.

The provision of said information is compulsory, on pain of exclusion.

Candidates are entitled to exercise the rights provided in the Legislative Decree mentioned above, including the right to access the data concerning them, the right to rectify, update, complete or erase erroneous or incomplete data or data collected in a manner that is contrary to law, and to object to processing for legitimate reasons.

#### **Art. 16 – Disclosure**

1. This decree is made available to the public on the University website (<http://www.univaq.it>), on the Ministry of Education, University and Research website, and on the European Union website.

#### **Art. 17 - Reference to Implementation Modalities**

1. For all matters not contained in this announcement, the resolutions, laws and regulations indicated in the introduction together with all laws regulating recruitment of University staff shall apply.



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### **Art. 18 - Head of the Selection Procedure**

1. Pursuant to Art. 5 of Italian Law n. 241, 7 August 1990, dr. Loredana Taccone, Head of the Settore Concorsi e Selezioni of the University of L'Aquila, is also head of this selection procedure.

L'Aquila, 29 September 2022

The Rector  
Prof. Edoardo Alesse  
(signed:) Edoardo Alesse

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## ATTACHMENT A

<b>Academic Recruitment Field</b>	02/B1 – Experimental Physics of Matter
<b>Academic Discipline</b>	<b>FIS/03</b> – Physics of Matter (Position A)
<b>Object of the contract</b>	Research and teaching activities, integrated teaching activities and services to the students
<b>Place of work</b>	Department of Physical and Chemical Sciences
<b>Teaching Activities</b>	The total number of hours required for teaching, integrated teaching activities and services to the students is 350 hrs per year, of which 60 hrs of lectures. The number of hours required for research activities, teaching activities, integrated teaching activities and services to the students is 1.500 hrs. per year.
<b>Teaching activities, integrated teaching activities and services to the students</b>	The Researcher shall carry out teaching activities in the courses of the Academic Recruitment Field FIS/03 and related disciplines: physics of matter, optics, general physics, general physics laboratories. He/she shall also carry out the following: participate in examination committees and in orientation activities, assist and tutor students, supervise thesis and Ph.D. dissertation work.
<b>Research activities</b>	The Researcher shall be involved in setting up an ultra-fast photonics laboratory based on pump-probe systems for femtochemistry and non-linear optics experiments within the spectral range between the near infrared and the extreme ultraviolet. In particular, the experimental activity shall be focused on transient absorption microspectroscopic measurements, stimulated Raman and non-linear effects on molecular samples of pharmacological interest.
<b>Maximum number of publications</b>	12 (twelve)
<b>Foreign language requisite</b>	English
<b>Assessment criteria</b>	With due regard to criteria and parameters indicated in Ministerial Decree n. 243, 25 May 2011, the Examining Board shall assess: the candidates' overall profile and scientific maturity; their contribution in the works submitted; quality and their international visibility in the main citation databases; consistency of their scientific activity with the Academic Discipline object of the present selection procedure and with type of scientific commitment required; their past experience in financed research projects based on competitive calls.
<b>Type of funding</b>	PNRR Funds – Ecosystems for Innovation

## ATTACHMENT B

<b>Academic Recruitment Field</b>	02/B1 – Experimental Physics of Matter
<b>Academic Discipline</b>	<b>FIS/03</b> – Physics of Matter (Position <b>B</b> )
<b>Place of work</b>	Department of Physical and Chemical Sciences
<b>Period</b>	3 years, renewable for further 2 years
<b>Type of contract</b>	Full-time
<b>Object of the contract</b>	Research and teaching activities, integrated teaching activities and services to the students
<b>Research Project Title</b>	Design and development of innovative optoelectronic integrated on-chip systems for data processing and communication in implantable, portable and wearable biomedical applications.
<b>Scientific Coordinator</b>	Prof. Andrea De Marcellis, Second Tier Professor, Academic Field ING-INF/01 - Electronic Engineering at the Department of Industrial and Information Engineering and Economics (DIIIIE) and Dr. Carlo Rizza, fixed-term Researcher at the Department of Physical and Chemical Sciences (DSFC), University of L'Aquila
<b>Teaching Activities</b>	The total number of hours required for teaching, integrated teaching activities and services to the students is 350 hrs per year, of which 60 hrs of lectures. The number of hours required for research activities, teaching activities, integrated teaching activities and services to the students is 1.500 hrs. per year.
<b>Teaching activities, integrated teaching activities and services to the students</b>	The Researcher shall carry out teaching activities in the courses of the Academic Recruitment Field FIS/03 and related disciplines: physics of matter, optics, general physics, general physics laboratories. He/she shall also carry out the following: participate in examination committees and in orientation activities, assist and tutor students, supervise thesis and Ph.D. dissertation work.
<b>Research activities</b>	The candidate shall contribute to the development and implementation of integrated microsystems in the field of electronics and photonics by means of standard CMOS techniques on silicon such as ASIC (Application-Specific Integrated Circuit), SoC (System-on-Chip), PIC (Photonic Integrated Circuit) and SiP (Silicon Photonic). The candidate shall be involved in setting up advanced spectroscopic systems for the contemporary study of the sizes and concentration of submicrometric particles contained in solid liquids and gas using plasmon or dielectric resonances. Moreover, research activities shall also focus on numerical design of new metamaterial and metasurface structures, the properties of which vary in space and/or in time, able to perform several mathematical operations (derivation and integration) as a basis of analogic calculus mediated by laser pulses. The main areas of expertise, therefore, fall under photonics, nanophotonics and optoelectronics.
<b>Maximum number of publications</b>	12 (twelve)

<b>Foreign language requisite</b>	English
<b>Assessment criteria</b>	With due regard to criteria and parameters indicated in Ministerial Decree n. 243, 25 May 2011, the Examining Board shall assess: the candidates' overall profile and scientific maturity; their contribution in the works submitted; quality and their international visibility in the main citation databases; consistency of their scientific activity with the Academic Discipline object of the present selection procedure and with type of scientific commitment required; their past experience in financed research projects based on competitive calls.
<b>Type of funding</b>	PNRR Funds – Ecosystems for Innovation, Vitality project

## ATTACHMENT C

<b>Academic Recruitment Field</b>	05/G1 –Pharmacology, Clinical Pharmacology and Pharmacognosy
<b>Academic Discipline</b>	<b>BIO/14</b> – Pharmacology
<b>Place of work</b>	Department of Biotechnological and Applied Clinical Sciences
<b>Research Project Title</b>	Development of a biotechnological platform for the study of drugs with allosteric properties and superselective agonists/antagonists, “biased drugs”
<b>Research Activities</b>	<p>Research activities shall focus on the issues typical of the Academic Discipline BIO/14 concerning the working mechanism of drugs at molecular level, the biochemical results at cellular level and their effects in vivo, making use of methodological procedures suitable for the direct study of the receptor activity (e.g.: RET – resonance energy transfer – techniques), of molecular pharmacology approaches for the study of intracellular signals, and animal models for the subsequent therapeutic efficacy assessment.</p> <p>In particular, research activities shall be focused on the issues of innovation aimed to develop new allosteric PAM (positive allosteric modulator) and NAM (negative allosteric modulator) drugs and superselective (biased drugs) drugs able to direct the receptor activation towards specific intracellular signals.</p>
<b>Teaching Activities</b>	<p>Teaching activities shall be carried out in the field of the Academic Discipline BIO/14 or related disciplines or disciplines anyhow related to the Academic Recruitment Field 05/G1 taught in the Bachelor’s level degree courses, Master’s level degree courses and single-cycle Master’s level degrees, Specialization Schools, I and II level Master’s degree courses, participation in examination committees and teaching and tutoring activities in Ph. D. courses.</p> <p>The total number of hours required for teaching, integrated teaching activities and services to the students is 350 hrs per year, of which 60 hrs of lectures.</p>
<b>Maximum number of publications</b>	12 (twelve)
<b>Foreign language requisite</b>	English
<b>Assessment criteria</b>	The Examining Board shall assess the candidates considering criteria and parameters indicated in Ministerial Decree n. 243/2011, 25 May 2011.
<b>Type of funding</b>	PNRR Funds – Ecosystems for Innovation



## ATTACHMENT D

<b>Academic Recruitment Field</b>	09/E2 – Electrical Energy Engineering
<b>Academic Discipline</b>	ING-IND/32 – Power Electronic Converters, Electrical Machines and Drives
<b>Place of work</b>	Department of Information Engineering and Economics
<b>Action</b>	Project: <i>Vitality – Innovation, digitalization and sustainability ecosystem for the widespread economy in Central Italy</i>
<b>Period</b>	3 years, renewable for a further year
<b>Type of contract</b>	Full-time
<b>Research Project Title</b>	Analysis and development of sustainable innovative technologies in electric actuators for automotive application and electrical mobility.
<b>Scientific Coordinator</b>	Prof. Marco Tursini
<b>Teaching activities</b>	The total number of hours required for teaching, integrated teaching activities and services to the students is 350 hrs per year, of which 60 hrs of lectures in the teaching units of the subject specified in the announcement.
<b>Research activities</b>	<p>The Researcher shall carry out activities concerning converters, electrical machines and drives for automotive application with particular reference to design, prototype development and validation tests of electric actuators containing low- or no- rare-earth.</p> <p>In line with the goals of the project “Vitality” the Researcher shall be engaged in disseminating knowledge, in technological transfer and in research and industrial development activities of the companies involved.</p> <p>The research issues shall be concerned with design and/or technological solutions aiming at increasing electrical motors’ energy efficiency and power density, with particular attention to actuators for application in vehicle auxiliary services:</p> <ul style="list-style-type: none"> <li>– finite element design and topological optimization;</li> <li>– technical-economical analysis of the use of different types of ferromagnetic sheets;</li> <li>– studies aimed to employ and characterize copper strip windings of the “hairpin” type;</li> </ul> <p>and, in particular, for variable reluctance synchronous motors:</p> <ul style="list-style-type: none"> <li>– study of rotor geometries with symmetrical and asymmetrical flow barriers;</li> <li>– study of solutions with rotor bents to reduce torque ripple;</li> <li>– analysis of the mechanical stress of high-speed rotor jumpers;</li> <li>– study of low-cost techniques for assembling the rotor and injecting resins into flow barriers.</li> </ul> <p>The Researcher shall develop design methodologies based on the</p>



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	finite element analysis of electric machines and simulation models and multiphysics co-simulation of actuators and related drives.
<b>Maximum number of publications</b>	12 (twelve)
<b>Foreign language requisite</b>	English
<b>Assessment criteria</b>	The Examining Board shall assess the candidates considering criteria and parameters indicated in Ministerial Decree n. 243/2011, 25 May 2011.
<b>Type of funding</b>	The expense to reward the Researcher, at the budget item CA. 04.01.01.02.01 "Fixed-term Researchers salary", shall be fully funded by the Project: <i>Vitality</i> (in which recruitment of external researchers is envisaged) – Scientific Coordinator: Prof. Marco Tursini.

Unità Organizzativa Responsabile: Settore Concorsi e Selezioni – e-mail: [conc@strutture.univaq.it](mailto:conc@strutture.univaq.it)

Responsabile: Dott.ssa Loredana Taccone – tel: 0862.432023

Per eventuali informazioni rivolgersi a: Raffaele Iovenitti – Giuseppina Persia – Michela Speranza (operatori incaricati) – tel: 0862.432176 – 2744 – 2703

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## ATTACHMENT E

<b>Academic Recruitment Field</b>	09/B3 – Business and Management Engineering
<b>Academic Discipline</b>	ING-IND/35 – Business and Management Engineering
<b>Place of work</b>	Department of Information Engineering and Economics
<b>Action</b>	Project: <i>Vitality - Innovation, digitalization and sustainability ecosystem for the widespread economy in Central Italy</i>
<b>Period</b>	3 years, renewable for a further year
<b>Type of contract</b>	Full-time
<b>Research Project Title</b>	Models and tools for the analysis of the innovation needs of manufacturing enterprises and for the implementation of technology transfer processes, with particular reference to circular economy and relocation of productive and supply activities.
<b>Scientific Coordinator</b>	Prof. Luciano Fratocchi
<b>Teaching Activities</b>	3 CFU in Management control systems Code I2G059 and 3 CFU in Business management Code I0239
<b>Research Activities</b>	<p>The Researcher shall carry out research activities in the field of the issues concerning the analysis of the innovation needs of the manufacturing industries and the implementation of technology transfer processes, with particular reference to circular economy and relocation of productive and supply activities.</p> <p>The Researcher shall contribute to UNIVAQ research activities in the field of the Project "<i>Vitality - Innovation, digitalization and sustainability ecosystem for the widespread economy in Central Italy</i>" – developed by HAMU, the Abruzzo, Marche, Umbria interregional Hub and by the Universities of the three Regions, of which the University of L'Aquila acts as the lead. The project has been approved by the Ministry of University and Research within the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNRR).</p> <p>The project's general purpose is to build an ecosystem allowing innovation development and transfer in order to make regional productive systems more competitive, thus improving sustainability and quality of life in urban systems, in rural areas and in both life and work environments.</p> <p>The Researcher's activity shall be concerned with the definition of analysis models of the innovation needs of the manufacturing industries of the territories involved in the project and of the consequent strategies of technology transfer, taking into specific consideration the opportunities to implement consistent processes through the principles of circular economy and/or the productive relocation of Italian and foreign activities. In particular, the Researcher shall focus on:</p> <ol style="list-style-type: none"> <li>1. Identifying analysis models of the technological needs, taking into consideration the peculiarities of the manufacturing industries of the territories involved in the projects and of their specialization macro-sectors. Particular attention shall be given to the needs that may be satisfied by means of productive processes based on the principles of circular economy;</li> <li>2. Identifying the barriers (technical, technological, organizational, managerial, human and cultural) to the technology transfer aimed at satisfying the innovation needs identified;</li> </ol>



	<ol style="list-style-type: none"> <li>3. Identifying the opportunities of creating start-ups that may satisfy the needs identified and consequent definition of the related business models;</li> <li>4. Identifying the opportunities of attracting options of productive relocation – in the territories involved in the project – by Italian and foreign companies;</li> <li>5. Identifying the opportunities of attracting options of supply that envisage the companies of the territory as potential suppliers of materials, especially those deriving from recycling end-of-use products;</li> <li>6. Defining specific action plans for implementing technology transfer and support processes to the productive relocation and/or of the attraction of supply demand;</li> <li>7. Defining guidelines for the policy maker aimed at promoting technology transfer processes (for those companies that expressed the need or those start-ups able to satisfy it) and/or the productive relocation processes and/or the materials supply.</li> </ol>
<b>Maximum number of publications</b>	12 (twelve)
<b>Foreign language requisite</b>	English
<b>Assessment criteria</b>	The Examining Board shall assess the candidates considering criteria and parameters indicated in Ministerial Decree n. 243/2011, 25 May 2011.
<b>Type of funding</b>	The expense to reward the Researcher, at the budget item CA. 04.01.01.02.01 “Fixed-term Researchers salary”, shall be fully funded by the Project: <i>Vitality</i> (in which recruitment of external researchers is envisaged) – Scientific Coordinator: Prof. Luciano Fratocchi.

## ATTACHMENT F

<b>Academic Recruitment Field</b>	09/A1 – Aeronautical and Aerospace Engineering and Naval Architecture
<b>Academic Discipline</b>	ING-IND/06 – Fluid Dynamics
<b>Place of work</b>	Department of Information Engineering and Economics
<b>Action</b>	<p>Project: “<i>Vitality - Innovation, digitalization and sustainability ecosystem for the widespread economy in Central Italy</i>”</p> <ul style="list-style-type: none"> <li>• Spoke 1: MEGALITHIC MEthods and TechnoloGies enhancing Local specialisations strategies in Health, Industry and Cybersecurity</li> <li>• Work Package 4: Industry (Automotive and Pharmaceutic) and Aerospace</li> </ul> <p>Task 1.4.1: Green Automotive</p>
<b>Period</b>	3 years, renewable for a further year
<b>Type of contract</b>	Full-time
<b>Research Project Title</b>	Fluid-dynamic modeling of low environmental impact, advanced propulsion system components and implementation of related technological transfer processes.
<b>Scientific Coordinator</b>	Prof. Andrea Di Mascio
<b>Teaching Activities</b>	<p>The Researcher shall carry out teaching activities in the courses of the Academic Recruitment Field 09/A1 – Aeronautical and Aerospace Engineering and Naval Architecture for a total number of 350 hrs per year, of which 60 hrs of lectures in the following teaching units:</p> <ul style="list-style-type: none"> <li>• Fluid Dynamics</li> <li>• Computational Fluid Dynamics and vehicle aerodynamics</li> <li>• Biofluid Dynamics</li> </ul> <p>He/she shall also carry out the following: participate in examination committees and in orientation activities, assist and tutor students, supervise thesis and Ph.D. dissertation work.</p>
<b>Research Activities</b>	<p>The Researcher shall carry out research activities in the field of the issues concerning the analysis of the sustainable innovation needs of the metalworking and mechanical engineering industry of the territory and the implementation of technology transfer processes, with particular reference to the automotive sector.</p> <p>The Researcher shall contribute to UNIVAQ research activities in the field of the Project “<i>Vitality - Innovation, digitalization and sustainability ecosystem for the widespread economy in Central Italy - Work Package 4: Industry (Automotive and Pharmaceutic) and Aerospace, Task 1.4.1 Green Automotive</i>” developed by HAMU, the Abruzzo, Marche, Umbria interregional Hub and by the Universities of the three Regions, of which the University of L’Aquila acts as the lead. The project has been approved by the Ministry of University and Research within the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza - PNRR) and pursues the objective, in the specific WP, to develop efficient, low-CO<sub>2</sub> emission powertrains. The Researcher’s scientific activity in general shall focus on the fluid-dynamic optimization and the gas dynamic study of low environmental impact, advanced powertrains, with reference to:</p> <ol style="list-style-type: none"> <li>1. the study of fluid flow inside powertrains making use of continuum balance equations;</li> </ol>



	<ol style="list-style-type: none"> <li>2. the development of computational fluid dynamic codes for automotive applications;</li> <li>3. the study of gas dynamics of multiphase flows and related phase change processes;</li> <li>4. the study of processes of injection of liquid/gaseous fuels into propulsion systems.</li> </ol> <p>In particular, research activities shall involve specific skills concerning fluid dynamics of injection processes of fluids, such as compressed natural gas, hydrogen or petrol.</p> <p>The Researcher shall study the flow of fluids inside and outside injection devices in presence of turbulence, boundary layers, under-expanded supersonic flows, formation of shock waves, phase change and flash-boiling phenomenon.</p> <p>The following skills are required:</p> <ol style="list-style-type: none"> <li>1. experience in modeling multiphase flows;</li> <li>2. experience in modeling turbulent flows;</li> <li>3. experience in modeling phase change processes, in particular in non-thermal equilibrium conditions;</li> <li>4. knowledge of fluid dynamics of real liquids;</li> <li>5. knowledge of the working principles of modern propulsion systems;</li> <li>6. knowledge of the main programming languages (C++, Matlab, etc.);</li> <li>7. knowledge of the main CFD codes for simulating propulsion systems (CONVERGE, OpenFOAM, etc.).</li> </ol>
<b>Maximum number of publications</b>	12 (twelve)
<b>Foreign language requisite</b>	English
<b>Assessment Criteria</b>	The Examining Board shall assess the candidates considering criteria and parameters indicated in Ministerial Decree n. 243/2011, 25 May 2011.
<b>Type of funding</b>	The expense to reward the Researcher, at the budget item CA. 04.01.01.02.01 "Fixed-term Researchers salary", shall be fully funded by the Project: <i>Vitality</i> (in which recruitment of external researchers is envisaged) – Scientific Coordinator: Prof. Andrea Di Mascio.