



Decree of the Rector n. 1227 of 28/11/2023
Competition for awarding 1 research grant at the University of Udine

DISCLAIMER:

The official and legally binding call for applications is in Italian only. This document cannot be used for legal purposes and is only meant to provide information in English on the call for applications (Decree of the Rector n. 1227 of 28/11/2023). Please refer to the official call published on: <https://www.uniud.it/it/albo-ufficiale>

Any change and integration will be made available on the above mentioned web page. Therefore, no personal written communication regarding the examination date and/or competition results shall be provided to applicants.

Annex 1

Competition announcement for the assignment of 1 research grant at the University of Udine, entitled "Development of catalytic materials for the control of PHEV (plug-in hybrid electric vehicle) pollutant emissions" SSD: ING-IND/27 (principal investigator, Carla De Leitenburg)

Research grant funded by the resources of the project PRIN 2022 - Prot. n. 2022JRT7WZ

Art. 1

A selection procedure is hereby launched for the award of 1 research grant at the University of Udine, as identified in Attachment A which constitutes an integral part of the present announcement.

The research grant is linked to the research project and is subject and conditioned upon the relative funding.

The fellowship may be renewed, in compliance with Art. 22, Law No. 240 of 30 December 2010 (as in the text in force before the implementation of the Conversion Law of the D.L. 36/2022, L. 79/2022), Law No. 11 of 27 February 2015, and the current regulations of the University of Udine for awarding research grants, issued with the Rector's Decree No. 182 of 31 March 2021. The renewal is subject to the scientific coordinator's positive assessment of the researcher's activities, an adequate scientific rationale, and a corresponding financial covering.

The research fellowship does not give rise to any right with regards to accessing University posts.

Any personal communication to candidates related to this selection will be sent exclusively to the email address indicated when registering for the selection, as mentioned in Art. 5.

Art. 2

The research grant described in this competition announcement and the required qualifications to apply for the position are identified in Attachment A. The lack of the admission requirements leads to the automatic exclusion from the competition procedure.

Possession of a PhD or equivalent degree obtained abroad or, only for the interested areas, of a medical specialization accompanied by an adequate scientific production, constitutes a preferential qualification for awarding the research fellowship of this selection, if it has not been provided as a mandatory requirement.



For the only purpose of the admission to the competition, the Examining Board (Art. 7) shall assess the equivalence of the qualification obtained abroad, except for the evaluation of the medical specialization qualification to which Article 38 of the Legislative Decree 165/2001 and subsequent modifications and additions, and EU regulations on the matter, shall be applied.

The Examining Board will proceed to the evaluation of the qualification obtained abroad according to the documentation attached to the application form. The Examining Board may exclude the candidate if the submitted documentation does not provide sufficient information for the assessment.

Therefore, applicants must enclose all the documentation in their possession relating to their qualification in order to provide the Examining Board with sufficient information for assessment.

Candidates holding a qualification issued by a **European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Supplement Diploma in English issued by the competent University.
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplome.eu/udine/#/auth/login>

Candidates holding a qualification issued by a **non-European Research Area country**, if successful, must submit, if not already attached to the application form one of the following options:

- Declaration of the on-site value of the qualification and the certificate relating to the degree with examinations and grades. A certificate in a language other than Italian or English must be accompanied by an official translation into one of these languages (certified by the competent diplomatic-consular authority or certified by a court in Italy).
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at <https://cimea.diplome.eu/udine/#/auth/login>

If the Supplement Diploma or the statement/attestation of comparability are not available when signing the contract, the applicant must demonstrate that he/she has requested the documentation and submit it as soon as possible.

Any exclusion from the selection procedure due to lack of eligibility requirements, absence of required documents, failure to sign the selection application or submission of the selection application in a manner different from what is provided for in this call for applications will be communicated to applicants exclusively at the email address indicated in the application form.

Art. 3

The research grant referred to in this call for applications cannot be awarded:

- a. to employees of Universities and the entities referred to in Article 22, section 1, of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022);
- b. to those who have already been awarded research grants pursuant to Italian Law no. 240 of 30 December 2010 (prior to the reform introduced by Law no. 79 of 29 June 2022) for the maximum period provided by law, even if not continuously, excluding the period in which the grant was used in conjunction with the doctorate, up to the legal term of the relative course;
- c. to those who have already benefited from research grants and fixed-term researcher contracts provided for, respectively, in Articles 22 and 24 of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022), for a total of 12 years, even if not consecutive;



- d. to anyone who has a degree of kinship or affinity, up to and including the fourth degree, with:
- the Rector, the Director General or a member of the Board of Directors of the University of Udine;
 - the scientific supervisor or a professor/researcher belonging to the department or organisation hosting the research grant in question.

The research grant provided for in this call for applications cannot be combined:

- a) with scholarships of any kind, except for those granted by Italian or foreign institutions to supplement, by means of stays abroad, the fellow's training or research activities;
- b) with other research grants;
- c) with an employment relationship, even if part-time, without prejudice to the relevant provisions for employees of public administrations.

The grant awarded under this call for applications is also incompatible with simultaneous attendance at university degree courses, either Bachelor's degree or Master's degree courses, research Doctorates with scholarships and medical specializations, in Italy or abroad.

Art. 4

Applicants must enclose with their application, under penalty of exclusion, the following documents:

- a) their professional scientific CV, highlighting the candidate's aptitude for carrying out and implementing the research project (Attachment A);
- b) their identity card, their passport or any other identification document¹;
- c) (for candidates with a foreign qualification only) certification or self-certification of both the academic qualification required for the admission to the selection, and of the exams (with evaluation) took during the period of study abroad, and of any other document that can be useful to the evaluation of the degree by the Examining Board.

Applicants can attach to the application, publications and any other certification considered useful to demonstrate the qualification based on the research program (Attachment A) and to certify any research activity accomplished at public or private institutes (indicating the starting and ending date and the duration).

The documents and qualifications mentioned above must be submitted in Italian or English. Those that are not as requested will not be evaluated. Documents originally written in a language other than Italian or English must come with a translation in Italian or English, that the candidate will do on its own responsibility. The translation can be an abstract concerning the thesis.

Italian and Community candidates wishing to submit qualifications referring to conditions and facts attested by Public Administrations must proceed exclusively with self-certification.

Non-EU citizens legally residing in Italy may self-certify only data that can be verified or certified by Italian public bodies. They may also use declarations in lieu when provided for by an international convention between Italy and the declarant's country of origin.

Non-EU citizens not residing in Italy cannot self-certify.

Only the qualifications possessed by the candidate on the date the application form is submitted and submitted in accordance with the procedures set out in Article 5 will be assessed.

¹ Please be aware that the residence permit is not an identification document.



Failure to submit mandatory documents provided for in this article will constitute grounds for exclusion from the selection.

Art. 5

The submission of the applications for the present call starts on December 7, 2023 at 2:00 pm (Italian time) and ends on March 26, 2024 at 2:00 pm (Italian time).

The application to take part in the selection must be completed, under penalty of exclusion, using the appropriate online procedure, available at the link <https://pica.cineca.it/>. The procedure involves an applicant registration step, for those who do not already have an account, and then an application completion step.

Once completed, the online application must be signed in the manner described in the online procedure (manual signature with attached identity document or digital signature), under penalty of exclusion from selection. The application does not have to be signed if you access the above-mentioned online procedure using your SPID ID.

The qualifications referred to in Article 4 must be attached to the application in .pdf format. Individual .pdf files may not exceed 30MB.

The application for participation in the selection is automatically sent to the University of Udine with the definitive closing of the online procedure.

The University Administration:

- is not responsible if it is impossible to read the submitted documentation in electronic format due to damaged files;
- shall not accept or take into consideration qualifications or documents received in paper form or by any means other than what is specified in this article.

Reference to documents or publications already submitted in connection with other competitions is not allowed.

The Administration is not responsible for any missing document or communication because of inaccurate indication of residence and/or address submitted by the candidate during the application. Also, the Administration is not responsible if the candidate has not communicated changes in this information, or has communicated them too late. The Administration is also not responsible for any postal or telegraphic problems not attributable to the Administration itself.

Applicants are advised not to wait until the last few days before the closing date to submit their application. The University accepts no responsibility for any malfunctions due to technical problems and/or overloading of the communication line and/or application systems.

Art. 6

The selection procedure is held in accordance with the modality indicated in Attachment A.

The test will aim to assess the general preparation, experience and aptitude for research of the candidate. It will consist in the evaluation of the professional scientific curriculum, of the publications and qualifications presented, and of the interview, where foreseen.



Art. 7

The Examining board for the competition is identified in Attachment A of the present competition announcement, of which it is an integral part.

At its first meeting, the Examining board shall appoint its President and Secretary, and establish the criteria and methods for evaluating the qualifications and the interview, where foreseen.

The results of the qualifications assessment must be disclosed to applicants during the interview, where foreseen.

The Examining board can award a maximum of 100 points (one hundred out of one hundred) to the selection.

At the end of the evaluation procedure, the Examining board shall formulate the general merit list based on the overall score of each candidate, and draw up the minutes of the whole competition procedure.

Based on the ranking list, the assignment is awarded to candidates who have obtained a minimum overall score of 70/100 (seventy out of one hundred).

The Examining board's judgement is final.

The ranking list will be made public exclusively through publication on the University's official website.

Applicants will not be notified of the outcome of the evaluation.

Those who do not declare their acceptance of the research grant and do not present themselves at the research centre within the deadline communicated by the latter, even if not formally, shall lose the right to receive it. Exceptions to this term will only be granted in cases of documented force majeure.

Art. 8

The research activity cannot be started before signing the contract defining the terms and conditions of the collaboration.

The activity covered by the research grant must have the following characteristics:

- a) it must be carried out as part of the research programme covered by the grant and not be a merely technical support to it;
- b) it must have a close connection with the realization of the research program for which the winner of the grant has been awarded the contract;
- c) it must be continuous and, in any case, temporally defined, not merely occasional, and in coordination with the overall activity of the University;
- d) it must be carried out autonomously, solely within the limits of the programme prepared by the programme supervisor, without predetermined working hours.

The researcher is required to submit a detailed written report on the work carried out and the results achieved, accompanied by the opinion of the scientific supervisor, to the reference organisation at the intervals set out in the contract. The researcher must also submit interim reports and timesheets, if requested by the reference organisation.

Either the fellow or the reference organisation may withdraw from the contract.



The reference organisation may terminate the contract not only in the cases referred to in Article 9, sections 2 and 3, of the "Internal rules for awarding research grants pursuant to law 240 of 30 December 2010" of the University of Udine, but also in the event the research project and therefore the financial coverage on which the research grant is based cease to exist.

Art. 9

The following legal dispositions shall apply to the grant referred to in this call for applications:

- for tax matters, the provisions of Article 4 of Italian Law no. 476 of 13 August 1984, as subsequently amended and supplemented;
- for social security matters, the provisions of Article 2(26) *et seq.* of Italian Law no. 335 of 8 August 1995, as subsequently amended and supplemented;
- for mandatory maternity leave, the provisions of the Italian Ministerial Decree of 12 July 2007;
- with regard to sick leave, the provisions of Article 1(788) of Italian Law no. 296 of 27 December 2006 and subsequent amendments.

During the period of mandatory maternity leave, the allowance paid by INPS according to Art. 5 of the Italian Ministerial Decree of 12 July 2007 is supplemented by the University up to the full amount of the research grant.

The grant will be paid in monthly instalments.

Art. 10

The data collected as part of the procedure referred to in Art. 5 are necessary to properly manage the selection procedure, for any subsequent management of the research grant and for purposes related to managing services provided by the University. The University of Udine is the Data Controller. At any time, the data subject may request access, rectification and, depending on the University's institutional purposes, cancellation and restriction of processing or oppose the processing of their data. The data subject can always lodge a complaint with the Italian Data Protection Authority. The complete disclosure is available on the University of Udine website in the "Privacy" section, accessible from the home page www.uniud.it Direct Link: <https://www.uniud.it/it/it/pagine-speciali/guida/privacy>

Art. 11

For all matters not expressly mentioned in this call for applications, refer to the regulations in force on the subject cited in the introduction and to the "Internal rules for awarding research grants pursuant to Italian Law no. 240 of 30 December 2010" of the University of Udine, issued by Rector's Decree no. 182 of 31 March 2021.

Art. 12

The procedure supervisor is Dr Sandra Salvador, Head of the Research Services Area of the University of Udine.

The Responsible office at the University of Udine is "Area Servizi per la Ricerca - Ufficio Formazione per la Ricerca", via Mantica n. 31 - 33100 Udine, Italia.

To request information about the call for applications, please complete the following form available on the University of Udine website:

https://helpdesk.uniud.it/SubmitSR.jsp?type=req&accountId=universityofudine&populateSR_id=42105



Attachment A

Responsabile scientifico della ricerca / Principal investigator:

Nome e cognome / Name and surname: Carla De Leitenburg
Qualifica / Position: Professoressa Associata / Associate Professor
Dipartimento / Department: Politecnico di Ingegneria e Architettura (DPIA) / Polytechnic of Engineering and Architecture
Area MUR / Research field: 09 - Ingegneria industriale e dell'informazione
Settore concorsuale e Settore scientifico disciplinare / Scientific sector: 09/D3; ING-IND/27 - Chimica industriale e tecnologica

Titolo dell'assegno di ricerca / Topic of the research fellowship "assegno di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

Sviluppo di materiali catalitici per il controllo delle emissioni inquinanti da PHEV (plug-in hybrid electric vehicle).

Text in English:

Development of catalytic materials for the control of PHEV (plug-in hybrid electric vehicle) pollutant emissions.

Obiettivi previsti e risultati attesi del programma di ricerca in cui si colloca l'attività dell'assegnista di ricerca / Foreseen objectives and results of the research programme performed by the research fellow "assegnista di ricerca":

I bandi sono consultabili dal sito dell'Ateneo, del MUR e di Euraxess / The calls are available on the University, MUR and Euraxess websites

Testo in italiano:

Il rischio più rilevante per la salute pubblica in Europa, soprattutto a causa delle concentrazioni di idrocarburi (HC), particolato (PM) e ossidi di azoto (NOx) spinge lo sviluppo di tecnologie alternative per i veicoli che migliorino la qualità dell'aria. La prospettiva di un parco veicoli circolanti completamente elettrici (EV) non è di breve termine; perciò, si prevede che i veicoli ibridi (HEV) avranno un ruolo chiave tra i veicoli leggeri nel prossimo futuro. Tra essi i veicoli elettrici ibridi plug-in (PHEV) sono considerati una tecnologia chiave per ridurre l'impatto del motore a combustione interna sull'inquinamento atmosferico e sui gas serra, avvantaggiati nella penetrazione del mercato grazie al loro costo inferiore e alla maggiore autonomia rispetto ai veicoli elettrici.

Sebbene i PHEV abbiano migliorato l'efficienza energetica grazie alla commutazione della potenza di guida tra batteria e motore a combustione interna (ICE), emettono comunque inquinanti atmosferici durante il funzionamento dell'ICE o, ancora di più, durante l'avviamento a freddo del motore, che può avvenire più volte, con conseguenti emissioni nocive o più gravi in condizioni di freddo. L'aumento delle emissioni di NOx potrebbe essere previsto in caso di funzionamento magro del motore (ad esempio, motori a iniezione diretta di benzina GDI a combustione magra), permettendo di migliorare il risparmio di carburante e quindi la riduzione delle emissioni di CO₂. In questo caso, il TWC (Three Way Catalyst) non è in grado di ridurre efficacemente le emissioni di NOx, HC e particolato in presenza di tali rapporti aria/combustibile. Nei veicoli ibridi, questi problemi sono addirittura esacerbati a causa dei frequenti start&stop del motore, durante i quali le temperature possono rimanere vicine o inferiori alla temperatura di funzionamento dei catalizzatori, riducendone l'efficienza.



Per controllare le emissioni all'avviamento a freddo, è possibile utilizzare l'adsorbimento a bassa temperatura (sia fisico che chimico) per catturare temporaneamente gli inquinanti fino a quando il catalizzatore del convertitore principale (TWC) non viene sufficientemente riscaldato. Lo sviluppo di sistemi basati su adsorbenti che intrappolano temporaneamente NOx, seguiti dal loro graduale desorbimento all'aumentare della temperatura di scarico del TWC (posto a valle), potrebbe rappresentare una soluzione efficace al problema degli NOx nell'avviamento a freddo.

Inoltre, condizioni intermittenti del flusso di scarico nel dispositivo che filtra il PM potrebbero portare a una bassa efficienza di rigenerazione passiva del PM durante il transitorio a freddo. I filtri antiparticolato a benzina (GPF) richiedono studi fondamentali sulla caratterizzazione del PM (particelle di dimensioni inferiori rispetto al PM diesel) e sull'ossidazione in condizioni diverse da quelle di un tradizionale filtro antiparticolato diesel (DPF) per integrare il loro funzionamento negli HEV. A tal fine è necessario sviluppare catalizzatori con un'elevata capacità di immagazzinare/rilasciare ossigeno.

Durante il periodo di assegni verranno sintetizzati e caratterizzati materiali promettenti per mitigare le emissioni di inquinanti nel riavvio a freddo ed in particolare:

- sorbenti di NOx (PNA) che lavorino a basse temperature (sotto i 200°C) da utilizzare a monte del convertitore Three Way Catalyst (TWC). Il desorbimento dovrebbe funzionare solo su base termica, senza l'utilizzo di condizioni di elevata concentrazione di carburante, e dovrebbe rilasciare pochi NOx.
- catalizzatori per GPF con un'elevata capacità di accumulo dell'ossigeno (OSC), in grado di operare a bassi livelli di O₂ tipici dei motori a benzina, in assenza di NO₂, precedentemente rimosso nell'unità TWC a monte, e nelle condizioni transitorie e intermittenti di un'auto PHEV, estendendo la finestra di temperatura operativa.

Tra i materiali proposti come adsorbitori passivi di NOx un sistema catalitico promettente l'uso di sistemi a base di metalli (tra cui Pt o Pd) su supporti (a base di CeO₂), con l'obiettivo di immagazzinare NOx al di sotto dei 200°C.

Materiali a base di ceria sono studiati come catalizzatori per filtri antiparticolato grazie all'elevata mobilità dell'ossigeno e all'ampio OSC che forniscono buone proprietà di ossidazione anche a bassi livelli di O₂. La capacità dei materiali a base di ceria di modificare rapidamente lo stato di ossidazione da Ce⁴⁺ a Ce³⁺, rilasciando reversibilmente l'ossigeno e mantenendo l'integrità strutturale in un'atmosfera riducente, promuove la formazione di vacanze di ossigeno a basse temperature. Questa proprietà è particolarmente utile per ossidare il soot a basse pressioni parziali di ossigeno e con un'elevata selettività di CO₂ nelle condizioni tipiche dei gas di scarico dei motori a iniezione diretta di benzina (GDI).

Obiettivo di questo studio è sviluppare la capacità di progettazione di nuovi materiali catalitici per applicazioni in GPF con elevate proprietà di accumulo di ossigeno, combinando gli effetti sinergici tra metalli di transizione/nobili e materiali a base di ceria. I catalizzatori saranno completamente caratterizzati per chiarire il ruolo della formazione di vacanze di ossigeno all'interfaccia tra ceria e carbonio, punto chiave per ottenere specie attive di ossigeno superficiale, e testati in collaborazione con le altre unità del progetto, nella reazione di ossidazione del particolato in condizioni di basso tenore di ossigeno.

I materiali, preparati secondo diverse strategie sintetiche, saranno caratterizzati dal punto di vista strutturale e morfologico mediante tecniche di natura chimica e chimico-fisica (XRD, TGA, TPR Raman ecc).

Text in English:

The most significant public health risk in Europe, especially from concentrations of hydrocarbons (HC), particulate matter (PM) and nitrogen oxides (NOx) drives the development of alternative vehicle technologies that improve air quality. The prospect of an all-electric vehicle (EV) fleet is not a short-term one; therefore, hybrid vehicles (HEVs) are expected to play a key role among light-duty vehicles in the near future. Among them, plug-in hybrid electric vehicles (PHEVs) are considered a key



technology to reduce the impact of the internal combustion engine on air pollution and greenhouse gases, advantaged in market penetration due to their lower cost and longer range compared to EVs.

Although PHEVs have improved energy efficiency by switching driving power between the battery and internal combustion engine (ICE), they still emit air pollutants during ICE operation or, even more so, during cold engine starting, which can occur multiple times, resulting in harmful or more severe emissions in cold conditions. Increased NO_x emissions could be expected in the case of lean engine operation (e.g., lean-burn GDI), an increasingly popular approach to improve fuel economy and thus reduce CO₂ emissions. In this case, the Three-Way Catalyst (TWC) cannot effectively reduce NO_x, HC, and particulate matter emissions at such air/fuel ratios. In hybrid vehicles, these problems are even exacerbated due to frequent engine start&stops, where temperatures can remain near or below the shutdown temperature of the catalysts, reducing their efficiency.

To control cold start emissions, low-temperature adsorption (both physical and chemical) can be used to temporarily capture pollutants until the main converter catalyst (TWC) is sufficiently heated. The development of systems based on adsorbents that temporarily trap NO_x, followed by their gradual desorption as the exhaust temperature of the TWC (located downstream) increases, could be an effective solution to the problem of NO_x in cold start.

In addition, intermittent exhaust flow conditions in the PM-filtering device could lead to low passive PM regeneration efficiency during the cold transient. Gasoline particulate filters (GPF) require fundamental studies on PM characterization (smaller particle size than diesel PM) and oxidation under conditions different from those of a conventional diesel particulate filter (DPF) to integrate their operation in HEVs. This requires the development of catalysts with high oxygen storage/release capacity.

During the grant period, promising materials will be synthesized and characterized to mitigate pollutant emissions in cold restarting and in particular:

- NO_x sorbents (PNAs) working at low temperatures (below 200°C) to be used upstream of the Three-Way Catalyst (TWC) converter. Desorption should operate on a thermal basis only, without the adoption of fuel-rich conditions, and should release little NO_x.
- catalysts for GPF with high oxygen storage capacity (OSC), capable of operating at low O₂ levels typical of gasoline engines, in the absence of NO₂, previously removed in the upstream TWC unit, and under the transient and intermittent conditions of a PHEV car, extending the operating temperature window.

Among the materials proposed as passive NO_x adsorbents a promising catalytic system is the use of metal-based systems (including Pt or Pd) on supports (CeO₂-based), with the goal of storing NO_x below 200°C.

Ceria-based materials are being studied as catalysts for particulate filters due to their high oxygen mobility and wide OSC that provide good oxidation properties even at low O₂ levels. The ability of ceria-based materials to rapidly change the oxidation state from Ce⁴⁺ to Ce³⁺, reversibly releasing oxygen and maintaining structural integrity in a reducing atmosphere, promotes the formation of oxygen vacancies at low temperatures. This property is particularly useful for oxidizing soot at low oxygen partial pressures and high CO₂ selectivity under typical exhaust gas conditions of gasoline direct injection (GDI) engines.

The objective of this study is to develop the design capability of new catalytic materials for applications in GPF with high oxygen storage properties by combining the synergistic effects between transition/noble metals and ceria-based materials. The catalysts will be fully characterized to elucidate the role of formation of oxygen vacancies at the interface between ceria and carbon, a key point for obtaining surface active oxygen species, and tested, in collaboration with other units in the project, in the particulate oxidation reaction under low oxygen conditions.

The materials, prepared according to different synthetic strategies, will be characterized structurally and morphologically by chemical and physicochemical techniques (XRD, TGA, TPR Raman, etc.).



**Struttura dell'Università di Udine presso la quale verrà sviluppata l'attività di ricerca /
Department or other structure of the University of Udine where research activities will be
carried out:**

Dipartimento Politecnico di Ingegneria e Architettura (DPIA) / Polytechnic Department of Engineering
and Architecture

**Importo dell'assegno di ricerca (al lordo oneri carico assegnista) / Total grant gross for the
research fellowship:**

€ 20.266,98

Durata dell'assegno di ricerca / Duration of the research fellowship "assegno di ricerca":

12 mesi / months

Finanziamento / Financed by:

La copertura finanziaria graverà sul progetto PRIN 2022 – "Alternative Materials for Emissions control
in hybrid vEhicles (AMELIE)"; Prot. n. 2022JRT7WZ. Decreto di finanziamento n. 961 del 30/06/2023 -
Settore PE8. Codice CUP G53D23001210006. Ministero dell'Università e della Ricerca (Finanziato
dall'Unione Europea, NextGenerationEU).

Requisiti di ammissione / Minimum qualifications necessary:

- Possesso di un diploma di laurea vecchio ordinamento (ante decreto 3 novembre 1999 n. 509) o di laurea specialistica/magistrale (ex decreto 3 novembre 1999 n. 509 e decreto 22 ottobre 2004 n. 270) o titolo equivalente conseguito all'estero;
- possesso di un curriculum scientifico professionale idoneo allo svolgimento dell'attività di ricerca contemplata.
- University degree obtained before Decree n. 509 of 3 November 1999 or specialistic/Master's degree (post decree n. 509 of 3 November 1999 and decree n. 270 of 22 October 2004) or equivalent degree obtained abroad;
- professional scientific curriculum suitable for the research activity above mentioned.

Procedura selettiva / Competition procedure:

Valutazione per titoli e colloquio / Evaluation of titles and oral exam

I risultati della valutazione dei titoli saranno resi noti agli interessati nel corso del colloquio / The evaluation of the qualifications will be disclosed to candidates during the interview

Calendario del colloquio / Calendar of the oral exam	Modalità / Modality	Videoconferenza / Videoconference
	Data / Date	9 aprile / April 2024
	Ora / Time	9:30 / 9:30 am (Italian time)
	Luogo / Place	-



Per sostenere il colloquio i candidati devono esibire un valido documento di riconoscimento. / Candidates must come to the interview with a valid identity document.

Eventuali variazioni saranno rese note esclusivamente mediante pubblicazione all'albo ufficiale on line dell'Ateneo / Any change will be made public solely through publication on the University web site http://web.uniud.it/ateneo/normativa/albo_ufficiale

Nota / Note: Le indicazioni sulle modalità di svolgimento della prova in modalità telematica saranno inviate ai candidati con successiva email da parte del Presidente della Commissione. Ai fini dell'identificazione e a pena di esclusione dalla procedura selettiva, ciascun candidato è tenuto ad identificarsi prima che il colloquio abbia inizio, esibendo il medesimo documento di identità allegato alla domanda di ammissione al concorso. Il candidato deve risultare reperibile nella giornata e all'orario indicato sul bando. Il mancato collegamento, l'irreperibilità del candidato nel giorno o nell'orario stabilito o la mancata esibizione del documento identificativo, sono motivo di esclusione dalla procedura selettiva. La registrazione delle prove orali è vietata. L'Ateneo adotterà pertanto tutti i provvedimenti in suo potere per tutelare i soggetti coinvolti qualora venissero diffuse tramite internet – o altri mezzi di diffusione pubblica – video, audio o immagini della procedura selettiva. / Instructions on how the video interviewing will be conducted will be provided to candidates by the Chairman of the Examining Board via email. For identification purposes, each candidate is required to identify him/herself before the interview by exhibiting the same identification document attached to the application. Candidates must be available on the day and time established by the call for applications. Failure of the candidate to establish a video connection, the unavailability of the candidate on the day and/or time established or failure of the candidate to provide the required identification document are all grounds for exclusion from the selection procedure. Recording of the video interviews is prohibited. The University will adopt all the measures within its power to protect all personnel involved as a result of dissemination via the internet or via other forms of public dissemination, of videos, audios or other pictures of the selection procedures.

Commissione giudicatrice / Examining Board:

Nome e Cognome	Qualifica	SSD	Università
Membri Effettivi / Permanent members			
Carla De Leitenburg	PA	ING-IND/27	Università degli Studi di Udine
Sara Colussi	PA	ING-IND/27	Università degli Studi di Udine
Maila Danielis	RTD	ING-IND/27	Università degli Studi di Udine
Membri Supplenti / Temporary members			
Marta Boaro	PA	ING-IND/27	Università degli Studi di Udine
Alessandro Trovarelli	PO	ING-IND/27	Università degli Studi di Udine