Bando di selezione per il conferimento di assegni
per lo svolgimento di attività di ricerca (tipo A)

**Selection announcement for the awarding of research grants (type A)**

Il direttore del dipartimento di Fisica e Astronomia “Galileo Galilei”/ the director of the department of Physics and Astronomy “Galileo Galilei”

VISTA la Legge 9 maggio 1989, n. 168;

VISTO lo Statuto dell’Università degli Studi di Padova, pubblicato nella Gazzetta Ufficiale n. 300 del 27 dicembre 2011 ss.mm.ii.;

VISTO l’art. 22 della Legge 30 dicembre 2010 n. 240 che prevede, nell’ambito delle disponibilità di bilancio, il conferimento di assegni per lo svolgimento di attività di ricerca;

VISTO il Decreto Ministeriale 9 marzo 2011 n. 102 che ha determinato l’importo minimo annuo lordo percipiente degli assegni di ricerca, banditi ai sensi dell’art. 22 della legge 30 dicembre 2010, n. 240;

VISTO il vigente “Regolamento per il conferimento di assegni di ricerca ai sensi dell’art. 22 della Legge 240/2010”;

VISTO il Decreto Legislativo 9 gennaio 2008, n. 17 relativo all’ammissione di cittadini di Paesi terzi a fini di ricerca scientifica ss.mm.ii.;

HAVING CONSIDERED Law no. 168 dated 9 May 1989;

HAVING CONSIDERED the Statute of the University of Padova, published in the Official Gazette no. 300 dated 27 December 2011, plus subsequent amendments and integrations;

HAVING CONSIDERED Art. 22 of Law no. 240 dated 30 December 2010, which provides for the awarding of research grants in accordance with budget availability;

HAVING CONSIDERED Ministerial Decree DM no. 102 dated 9 March 2011, which establishes the minimum annual gross amount of research grants for the grant holder, published in accordance with Art. 22 of Law no. 240 dated 30 December 2010;

HAVING CONSIDERED the current "Regulations Governing Research Grant Awards pursuant to Art. 22 of Law no. 240/2010";
HAVING CONSIDERED Legislative Decree DL no. 17 dated 9 January 2008, pertaining to the admission of third-country nationals for the purposes of scientific research, plus subsequent amendments and integrations;

HAVING CONSIDERED Presidential Decree D.P.R no. 62 dated 16 April 2013, “Regulations governing the code of conduct for civil servants” in accordance with Art. 54 of Law no. 165 dated 30 March 2001, which has extended, where relevant, the obligations under the code of conduct to collaborators and consultants with any type of contract or role;

HAVING CONSIDERED Law no. 11 dated 27 February 2015 - Decree no. 192 dated 31 December 2014, which included an extension to the legal deadlines, was amended and converted into the aforesaid law, which extended by two years the duration of the grant established under Art. 22, Paragraph 3 of Law No. 240 dated 30 December 2010;

HAVING CONSIDERED Law 29 giugno 2022, n. 79 (Law no. 79 dated 29 June 2022) "Conversion into law, with amendments, of the decree-law of 30 April2022, n. 36, containing further urgent measures for the implementation of the National Recovery and Resilience Plan (PNRR)", which allows during the temporary regime the assignment of grants for research activity collaboration pursuant to ex-Art. 22 of Law 240/2010;
HAVING CONSIDERED Legge 24 febbraio 2023 n. 14 (Law no. 14 dated 24 February 2023) converting the Milleproroghe Decree 2023 (n. 198/2022);

HAVING CONSIDERED the decision of the Department Board made on 18/07/2023 which approved the establishing of no. 1 grant to carry out research activity related to the project titled "Characterization and role of the out-of-plane optical constants in two-dimensional crystals: a quantum perspective" at the Department, under the supervision of Professor Michele Merano, who is the Research Project Supervisor.

IT BEING DEEMED EXPEDIENT to issue a selection announcement for the awarding of no. 1 research grant.

hereby decrees

Art. 1 – Purpose

A selection announcement has been published to award no. 1 research grants for the research project entitled "Characterization and role of the out-of-plane optical constants in two-dimensional crystals: a quantum perspective" – CUP code C93C23004080005 to be conducted at the Department of Physics and Astronomy under the supervision of Professor Michele Merano, who is the Research Project Supervisor.

The research grant, which shall last for 24 months and be for a gross amount for the grant holder of...

Un altro aspetto che verrà affrontato è la precisione delle nostre misurazioni. Teoricamente le costanti ottiche sono calcolate tramite la funzione di Lindhard, che va oltre l’approssimazione dell’elettrone indipendente. L’assegnista proverà a porre sperimentalmente in evidenza nelle nostre misurazioni effetti puramente quantistici previsti dalla funzione di Lindhard.

Art. 2 – Requisiti di ammissione

Possono partecipare alla selezione:
- le laureate/ i laureati con laurea specialistica/magistrale o vecchio ordinamento.

I titoli dovranno essere posseduti alla data di scadenza del bando di selezione.

Nel caso in cui il diploma di laurea sia stato conseguito all’estero, esso deve essere dichiarato equipollente, ai soli fini della selezione, alla laurea 20.267,04 Euro per annum, is issued in accordance with the current Regulations Governing Research Grant Awards pursuant to Art. 22 of Law no. 240/2010 for the aforementioned research project, in University Scientific Area no. Physics Science and Scientific Sector and Discipline FIS/03.

The purpose of this research grant, which is funded by dal Dipartimento di Fisica e Astronomia “Galileo Galilei” – “Bando Progetti e Assegni di ricerca Dipartimentali Anno 2023 – BIRD 2023 e Progetto di Eccellenza 23-27”, is to grant research into: “Due to their planar structure, two-dimensional crystals are expected to show out-of-plane optical anisotropy. Such a behavior was predicted by ab-initio calculations. Only recently a measurement on graphene and monolayers MoS2 measured their out-of-plane surface susceptibilities at a wavelength of 633 nm.

This project aims to expand this important result. One goal is to create a first database with the complete optical constants of the most important 2D crystals in all the visible spectrum. Another aspect that will be addressed is the precision of our measurements. Theoretically the optical constants are computed via the Lindhard function, that goes beyond the Independent electron approximation. We wonder If we can experimentally put In evidence in our measurements purely quantum effects predicted by the Lindhard function.

Art. 2 – Admissions requirements
The following are entitled to take part in this selection announcement:

- graduates with a Master's degree.

Candidates must have their degree by the selection announcement deadline.

Should the candidate's degree have been awarded abroad, then, for the sole purposes of this selection procedure, it must be declared to be the equivalent of an Italian Master's degree by a Selection Committee.

Likewise, if the PhD has been awarded abroad, then it must have lasted at least three years and, for the sole purposes of this selection procedure, it must be declared to be the equivalent of an Italian PhD by a Selection Committee.

In accordance with Art. 22 of Law no. 240 dated 30 December 2010, the Grant Holder must not be an employee at universities, institutes and public research organizations, Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), Italian Space Agency (ASI), European University Institute, Scuola Normale Superiore di Pisa, Scuola Superiore di studi universitari e di perfezionamento di Pisa, Scuola internazionale superiore di studi avanzati di Trieste and other Italian postgraduate schools that provide the equivalent of doctoral researcher courses.

Art. 22 of Law no. 240 dated 30 December 2010, plus subsequent amendments and integrations, establishes that the overall duration of the grant, including renewals, shall not exceed 6 years and shall
exclude the time that the grant overlapped with the candidate's PhD course for a period of time no longer than the maximum legal duration of the aforesaid course.

In accordance with Art. 18 of Law no. 240/2010, Research Grants may not be awarded to anyone who is a relative or a relative by law (up to and including the fourth degree of kinship) of a professor or a researcher working in the department or centre where the research is based. The grant holder may not have the aforementioned relations to the University Rector, its Director General, or a member of the University's Board of Directors.

Art. 3 – Application

The application may only be submitted by completing the online procedure available at https://pica.cineca.it/unipd/ from 31/08/2023 h. 16.00 till 15/09/2023 h.16 (CET).

Once the online application form has been completed, it must be signed following the instructions described online and an identity document must be attached.
If the application is not signed and/or the identity document is not attached, applicants will be excluded from the selection.

Once the application is submitted, candidates have to indicate the contact details (names and email addresses) for referees (i.e., lecturers, researchers or professors, working at universities or research institutes in Italy or abroad). Referees will receive an email with the invitation to complete the reference form on line by the deadline of 15/09/2023 h. 16 (CET).

Candidates have to compile the application in sufficient time for the reference letters to be submitted by the deadline. Reference letters submitted after the deadline or attached or sent in different ways will not be taken into consideration.

The application form is automatically sent to the Department when the online procedure is completed. Therefore, no paperwork needs to be delivered or sent to the University's offices.

The following must be attached with the application:

1. a copy (in pdf format) of a valid form of identification;
2. a copy (in pdf format) of the academic and professional curriculum vitae;
3. qualifications and publications relevant for the selection announcement;
4. two reference letter.

Copies (in pdf format) of all qualifications listed in this selection announcement and of documents deemed
relazione al proprio status, nonché l’eventuale necessità di tempi aggiuntivi per il colloquio.

Eventuali informazioni o chiarimenti in merito alle modalità di presentazione delle domande possono essere richieste alla Struttura (numero telefono 0498277115-7062 email segredip@dfa.unipd.it).

Per la segnalazione di problemi esclusivamente tecnici contattare il servizio supporto tramite il link presente in fondo alla pagina: https://pica.cineca.it/unipd.

La candidata/Il candidato si impegna a comunicare qualsiasi variazione nei recapiti indicati nella domanda.

Art. 4 – Procedura di selezione
La selezione si attua mediante la valutazione comparativa dei titoli, del curriculum scientifico-professionale, della produttività scientifica e delle lettere di referenza da parte di una Commissione giudicatrice nominata dal Direttore della struttura e composta da tre membri designati fra docenti e ricercatori esperti del settore in cui sarà svolta l’attività di collaborazione, uno dei quali, di norma, è il Responsabile scientifico del progetto di ricerca.

Per la valutazione comparativa dei candidati, la commissione dispone di 100 punti, di cui:

- per i titoli: laurea, dottorato di ricerca, diploma di specializzazione, attestati di frequenza di corsi di perfezionamento post-laurea (conseguiti in Italia o all’estero) - fino a 30 punti (di cui 20 per il titolo useful for the evaluation process must be attached to the application form by the deadline of this selection announcement.

According to Art. 46 and 47 of Italian Presidential Decree DPR 445/2000 plus subsequent additions and amendments, the candidate’s application will be considered valid for all legal purposes as self-certification of included data and enclosed documents.

According to Law no. 104 dated 5 February 1992, candidates with a recognized disability must specify in their application any special assistance or additional time they may need during the interview.

In case of need of further information or clarification about the application, the candidate may contact the Department (phone number 0498277115-7062 email segredip@dfa.unipd.it).

If technical issues are experienced the candidate may contact the assistance service via the link at the bottom of the page https://pica.cineca.it/unipd.

The candidate shall notify the Department of any changes to the contact details listed in the application form.

Art. 4 – Selection Procedure
Candidates are selected by a comparative evaluation of their qualifications, academic and professional curriculum vitae, publications and an reference letters.
di dottore di ricerca pertinente all’ ambito di ricerca del progetto). Nel caso in cui il titolo di dottore di ricerca o titolo equivalente conseguito all’estero ovvero, per i settori interessati, il titolo di specializzazione di area medica corredato di una adeguata produzione scientifica, non costituiscano requisito obbligatorio per l’ammissione al bando, i suddetti titoli costituiscono titolo preferenziale ai fini dell’attribuzione degli assegni;

- per il curriculum scientifico-professionale:
  svolgimento di documentata attività di ricerca presso soggetti pubblici e privati con contratti, borse di studio o incarichi pertinenti all’attività di ricerca oggetto del bando. Conseguimento di brevetti, premi o finanziamenti alla ricerca da bandi competitivi nell’area oggetto del bando – fino a 20 punti;

- per la produttività scientifica: quantità e qualità delle pubblicazioni scientifiche, incluse le tesi di laurea magistrale/specialistica o di dottorato – fino a 20 punti;

- per lettere di referenza – fino a 30 punti.

Al termine dei lavori la Commissione formula una graduatoria provvisoria generale di merito sulla base della somma dei punteggi ottenuti dalle candidate e dai candidati nelle singole prove.

Per l’inserimento nella graduatoria, le candidate e i candidati devono conseguire un punteggio complessivo non inferiore a 50. In caso di parità di merito la preferenza è determinata dalla minore età della candidata/del candidato.

Candidate applications shall be evaluated by a Selection Committee appointed by the Director of the Department; the Selection Committee shall comprise three members appointed among lecturers and researchers who are experts in the field of research, one of which, normally, shall be the Research Project Supervisor.

The Selection Committee has 100 points to evaluate the candidates and they shall be awarded for:

- qualifications: degree, PhD, specialist diploma, certificates of attendance of advanced professional courses (awarded in Italy or abroad). Up to 30 points (20 points shall be awarded if the candidate has a PhD in the field of the research project). When a PhD, foreign equivalent thereof, or, in related fields, specialist diploma in Medicine with suitable publications, are not compulsory admissions requirements, preference will be given to candidates with these qualifications.

- academic and professional curriculum vitae: performance of documented research activity at public and private organizations with contracts, grants or appointments (both in Italy and abroad) related to the research stated in this selection announcement. Obtention of patents, awards or research funding from competitive calls in the area covered by the call - up to 20 points.

- Publications: quantity and quality of publications, including Master’s degree dissertations or PhD theses – up to 20 points.
- Two reference letter: up to 30 points.

At the end of the evaluation, the Selection Committee shall draw up a provisional merit list based on the total of the scores awarded to candidates for each category.

To be included in the merit list, candidates must reach a minimum overall score of 50 points. In the event of a tie, preference will be given to the younger candidate.

The selection report and the provisional merit list shall be officially approved by a Director's Decree and then published in the Official University Register.

Art. 5 – Entering into the agreement

Research grants are awarded with bespoke research activity agreements entered into with the Department that published the announcement.

An individual agreement will establish the successful candidate's specific tasks, rights and duties, assigned tasks and research activities, payable salary and social security.

The Department shall notify the selection winners of the date by which, on penalty of forfeiture, they must enter into the agreement.

Should the agreement not be entered into by this date, the winners shall forfeit the right to the research grant. In the event of this, the second-placed candidate in the merit list shall be declared the winner.
Il conferimento dell'assegno non costituisce rapporto di lavoro subordinato e non dà luogo a diritti in ordine all'accesso ai ruoli delle Università.

Il pagamento dell'assegno è effettuato in rate mensili posticipate.

Art. 6 – Diritti e doveri

I soggetti titolari di assegno sono tenuti a svolgere personalmente e integralmente l'attività di ricerca oggetto del contratto, che presenta caratteristiche di flessibilità, senza orario di lavoro predeterminato, in modo continuativo e non meramente occasionale, in condizioni di autonomia nei limiti del programma o fase di esso predisposti dal Responsabile Scientifico della ricerca e secondo le direttive generali del Responsabile stesso.

Gli assegni, di cui al presente bando, non possono essere cumulati con altri assegni e con borse di studio a qualsiasi titolo conferite, tranne quelle concesse da istituzioni nazionali o straniere utili ad integrare, con soggiorni all'estero, l'attività di ricerca delle titolari e dei titolari di assegni.

La titolarità dell'assegno non è compatibile con la partecipazione a corsi di laurea, laurea specialistica o magistrale, dottorato di ricerca con borsa o specializzazione medica, in Italia o all'estero, master e comporta il collocamento in aspettativa senza assegni per la dipendente/il dipendente in servizio presso amministrazioni pubbliche.

Research activity may not be commenced before the winners have entered into the agreement, which shall normally come into force on the first day of the month after it was signed.

Should the winners be employees of the Public Administration, then they must be placed on unpaid leave for the entire duration of this research grant.

The awarding of the research grant does not constitute subordinate employment nor does it entitle the Grant Holder to a permanent position at the University.

Grants shall be paid in deferred monthly instalments.

Art. 6 – Rights and Duties

Grant Holders shall conduct their research personally and fully. The research is of a flexible nature, has no set working hours, and shall be conducted continually and not occasionally, autonomously within the limits of the programme or stage thereof as laid out by the Research Project Supervisor and in accordance with Supervisor's general instructions.

The grants within this announcement may not be combined with other grants or with scholarships of any other kind, unless they have been awarded by national or international organizations for periods abroad as part of a Grant Holder's research.

Grant Holders are not allowed to enrol in Bachelor's or Master's degree courses, funded PhDs or specialist courses in Medicine, in Italy or abroad, first and second-level postgraduate diploma courses and, if
Art. 7 - Segretezza e proprietà intellettuale
Tutti i dati e le informazioni di cui l'assegnista verrà a conoscenza nello svolgimento dell'incarico, che sono soggetti ad accordi di segretezza sottoscritti dalla struttura nella quale egli opera, dovranno essere considerati riservati. L'assegnista si impegna a mantenere la segretezza su tali dati e informazioni.

L'attribuzione del diritto di conseguire il brevetto per le invenzioni realizzate a seguito di attività di ricerca scientifica, svolta utilizzando comunque strutture e mezzi finanziari forniti dall'Università, è regolata in via generale dal Regolamento brevetti dell'Università.

Art. 8 - Trattamento fiscale, previdenziale e assicurativo

L'Università provvede alla copertura assicurativa per quanto riguarda i rischi da infortuni e responsabilità civile alle condizioni previste dalle relative polizze stipulate dall'Ateneo.

Grant Holders are employees of the Public Administration, they must be placed on unpaid leave.

Art. 7 – Confidentiality and intellectual property
Should the Grant Holders come into contact during the performance of their duties with information or data, which are covered by confidentiality agreements signed by the Department for which they work, then the Grant Holders must consider this sensitive information. They hereby pledge to keep all of this information and data confidential.

Attribution of the right to register a patent for the inventions produced on the basis of any scientific research activity carried out with the facilities and funds of the University of Padova is generally governed by the University's Patent Regulations.

Art. 8 – Tax, social security and insurance
The grants within this present announcement are governed by a series of laws: Art. 4 of Law no. 476 dated 13 August 1984, for tax; Art. 2, paragraphs 26 and following of Law no. 335 dated 8 August 1995, plus subsequent amendments and additions, for social security; the Ministry of Labour and Social Security decree dated 12 July 2007 for maternity leave (see Official Gazette no. 247 dated 23 October 2007); and Art. 1 paragraph 788 of Law no. 296 dated 27 December 2006, plus subsequent amendments, for sick leave.

The University shall provide insurance coverage for accidents and civil liability in accordance with the
conditions stated in the policies taken out by the University.

Should Grant Holders be sent on official university business, then the costs shall be sustained by the Research Project Supervisor's funds, or by the Grant Holders from their research funds, or by the host organization in accordance with the University Regulations Governing Official University Business.

Art. 9 – Verifying the Grant Holder's activity

The Department Board establishes that Grant Holder activity will be verified as follows:

1) At the end of each year of activity, the Grant Holder must submit to the Director of the Department a report, signed by the supervisor, in which the activities carried out within the project and the results achieved will be illustrated;

2) If the research grant is activated on a doctoral research project, and therefore the Grant Holder is a doctoral student without a scholarship, the annual reports of the research activity will be sent to the Director of the Department together with the judgment received by the Board of doctorate and signed by the Supervisor Professor.

3) All reports will be evaluated by the Department Council, which may possibly invite the Supervisor to report on the activities carried out by the research fellow.

4) The negative evaluation of the activity carried out within the scope will lead to termination of the contract, without prior notice, by the University.
Art. 10 – Final Provisions

For anything not specified within this present announcement, reference shall be made to the provisions of Law no. 240/2010 and subsequent amendments and implementing provisions, to the University of Padova's current Regulations Governing Research Grant Awards in accordance with Art. 22 of Law no. 240/2010, and to current law.

The Department reserves the right to verify the truthfulness of the candidate's self-certifications and statutory declarations, in accordance with Italian Presidential Decree DPR 445/2000, at any stage of the procedure. If the aforementioned statements are found to be false, then the declarer shall forfeit any benefits gained from these false statements and may be subject to sanctions provided for by the Italian criminal code or by special laws on this matter governed by Art. 76 of Italian Presidential Decree DPR no. 445/2000.

The person responsible for the selection procedure is the Secretary of Department, Dr. Agnello Marco.

Art. 11 – Processing Personal Data

Personal data shall be processed in accordance with the EU’s General Data Protection Regulation (GDPR, 27.04.2016, no. 679).

A complete version of the University's data-processing information guide is available at http://www.unipd.it/privacy.
Il presente bando è tradotto anche in lingua inglese a soli fini divulgativi; per ogni effetto di legge è valida esclusivamente la versione italiana. / The English version of this selection announcement has the sole purpose of enabling candidates to understand the content thereof; only the Italian version of the selection announcement is legally binding.

Padova, 31/08/2023

Il Direttore del Dipartimento
The Director of Department
Prof. Flavio Seno