



**Finanziato  
dall'Unione europea**

**REP. N. 71/2023  
DATE: 14/12/2023**

**NextGenerationEU**

**Prot. 2576**

**THE ENGLISH LANGUAGE TRANSLATION OF THE CALL DOES NOT HAVE LEGAL VALUE IN ITSELF, THEREFORE DOES NOT SUPERSEDE THE ITALIAN VERSION OF THE CALL (BANDO).**

**The integral version is available at the following links:**

<http://host.uniroma3.it/uffici/ricerca/assegni-di-ricerca.aspx>

**Art.1**

Pursuant to the [Regolamento di Ateneo per gli assegni di ricerca](#), a public selection process is established to award ONE grant for temporary research fellowship (“*assegno di ricerca*”) for a period of 12 (twelve) months in the Department of Industrial, Electronic and Mechanical Engineering

Analysis and synthesis of metasurfaces for energy applications

The research activities, pertinent to the scopes of the AURORA (Smart Materials for Ubiquitous Energy Harvesting, Storage, and Delivery in Next Generation Sustainable Environments) research project (PRIN 2022 PNRR – Protocol number P2022PPSN8), will be focused on the modelling and design of metasurfaces for energy applications.

In particular, the idea is to design proper systems based on metasurfaces that are able i. at the access-point/base-station side to receive, store, and transmit wireless energy enabling a proper digital control of the re-transmitted energy wave and ii. at the mobile unit side to efficiently rectify the received power enabling charging of the terminal batteries.

The research activities expected by the post-doctoral fellow are as follows.

Activities (T0-T0+6M): State-of-the-art on energy-oriented meta-atoms. Development of analytical/numerical models of metasurface unit cells for energy collection, storage, and transmission. Design, simulation, and optimization of single- and multi-band smart skin unit cells for energy applications. Analysis of achievable phase control in transmission. Derivation of comparative analysis and operative guidelines concerning the achievable efficiency in energy collection, storage, and transmission.

Activities (T0+6-T0+12M): State-of-the-art on rectennas and rectifying metasurfaces for wireless power transfer applications. Implementation and numerical comparison of different classes of architectures for the energy-oriented receiver to be installed in the end-user device (e.g., a transport vehicle). Derivation of operative guidelines concerning the receiving system geometry and architecture and the resulting tradeoff in terms of end-to-end efficiency, collectable energy, and enabled services in mobility thanks to additional wireless power available.

**GROSS AMOUNT (paid in monthly installments), comprehensive of all fees due by the Administration): € 27.511,68**

The allowances is subjected to:

- the provisions of the article 4 of Law 08/13/1984, n. 476 (fiscal treatment);
- the provisions of the article 2, paragraphs 26 and following of the law 08/08/1995, n. 335, as further amended (social security);
- the provisions of the article 1, paragraph 788, of Law 27/12/2006, n. 296, as further amended (sick leave);
- the provisions of the Decree of the Minister of Labour and Social Welfare 12/07/2007, published in Official Gazette no. 247 of 23/10/2007 (maternity).

Apart from the cases provided for and regulated by the above provisions, is possible to suspend the research activity for a pre-determined number of months. Suspension is given by the Board of the Department; at the end of the suspension the “*assegno di ricerca*” will resume or will be permanently stopped.

In all cases of suspension the payment is immediately interrupted until the date of resumption of the activities, certified by the Director of the Department.

In the case of anticipate conclusion of the research activity, the monthly installment will be paid proportionally.

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#### Art.2

To participate  
mandatory to have gained:

in selection it is

- Master's degree (or equivalent) in Electronic, in Physics or in an equivalent technical-scientific discipline. Should the Master's degree have been obtained abroad, the course must be declared equivalent, solely for selection purposes, by the Academic Senate of the University.
- The candidate must possess the required qualification within the deadline specified in paragraph 3, under penalty of exclusion.

#### Art. 3

The signed and dated application form, compiled following the scheme available at the end of this Call (**ALLEGATO A**) must be sent by e-mail at PEC: [ricerca.ingegneria.iem@ateneo.uniroma3.it](mailto:ricerca.ingegneria.iem@ateneo.uniroma3.it) or E-MAIL: [ricerca.diiem@uniroma3.it](mailto:ricerca.diiem@uniroma3.it) and HAVE TO ARRIVE within the final deadline of **08/01/2024**, otherwise the applicant will be excluded.

Application must include:

- **appropriate scientific and professional curriculum demonstrating aptitude for research activities;**
- **autocertification for the Degrees (**ALLEGATO B**);**
- **(if any) list of other titles and or previous scientific publication (**ALLEGATO C**)**
- **Copy of a valid passport**

#### Art. 4

The Commission will define the criteria of the selection before proceeding with the evaluation.

The selection process consists of two different phases:

- 1) the evaluation of the candidate profile based on titles, CV and any other provided documentation;
- 2) an oral interview;

#### Art. 5

1. The research grant cannot be awarded to students enrolled in undergraduate, Master, or medical specialization in Italy or abroad, and involves placement on unpaid leave for employee in service with public administrations other than those referred to in point .3 below.

2. Participation in selection is not allowed for spouses, relatives and kin up to and including the 4th degree of the:

- teaching staff of the Department which has issued this notice;
- Rector;
- General Director;
- Members of the Board of Directors.

3. Permanent employees of Universities, research and experimentation institutes or public bodies, the National Institute for New Technologies, Energy and Sustainable Economic Development (ENEA), the Italian Space Agency (ASI) and institutions whose scientific specialization qualifications have been recognized as equivalent to a Ph.D. pursuant to article 74, fourth paragraph, of Presidential Decree no. 382 of 11 July 1980, cannot participate in selection.

4. The research grant cannot be combined with any scholarships, except those awarded by national or foreign institutes to supplement research activities of said temporary research fellows with permanence abroad.

5. The grant for carrying out research activities is governed by a specific individual contract, based on the following criteria: flexibility in meeting the needs of the activity, continuity, time allocation (not sporadic), coordination with the overall activities of the Department, close relationship with the implementation of a research program, autonomous activity within the scope of the program and absence of pre-determined working hours.

#### Art. 6

For anything not exposed here must be considered laws and rules regarding the “assegni di ricerca”.

Any other information can be found on: <http://host.uniroma3.it/uffici/ricerca/assegni-di-ricerca.aspx>

Rome, 14/12/2023

IL DIRETTORE DEL DIPARTIMENTO

REP. N. 71/2023 Prot. 2576

Signed **Prof. Salvatore Andrea Sciuto**

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ALLEGATO A

APPLICATION FORM

Al Direttore del Dipartimento di Ingegneria Industriale, Elettronica e Meccanica  
dell'Università degli Studi Roma Tre

Il sottoscritto (name and surname) .....  
nato a (born in) ..... (.....) il (date) ...../...../.....,  
residente in (city-nation of residence) ..... -  
Via (address) .....  
Tel. .... Mobile. .... E-mail .....

CHIEDE

di partecipare al concorso pubblico per l'attribuzione dell'assegno relativo al programma di ricerca dal titolo

**"Analysis and synthesis of metasurfaces for energy applications" REP. N. 71/2023 Prot. 2576** da svolgersi presso il  
**Dipartimento di Ingegneria Industriale, Elettronica e Meccanica**

DICHIARA SOTTO LA PROPRIA RESPONSABILITÀ:

- 1) di essere cittadino ..... (citizenship);
- 2) (MASTER OF) di possedere la laurea in ..... e di averla conseguita in data (date) ..... presso l'Università (University) di ..... con la votazione (final grades) di .....
- 3) di non usufruire (o di impegnarsi a rinunciare qualora risultasse vincitore) di altre borse di studio a qualsiasi titolo conferite (con l'eccezione di quelle concesse da istituzioni nazionali o straniere utili ad integrare, con soggiorni all'estero, l'attività di ricerca) o di altro assegno di ricerca;
- 4) di non avere già usufruito di assegni di ricerca ex L. 240/2010 per un periodo complessivo superiore a 60 mesi;
- 5) di non essere dipendente di ruolo presso le Università, gli Osservatori Astronomici, Astrofisici e Vesuviani, gli Enti pubblici e le Istituzioni di ricerca di cui all'art. 8 del D.P.C.M. 30.12.93, n.593 e successive modificazioni e integrazioni, l'ENEA e l'ASI.
- 6) di non avere un grado di parentela o di affinità, fino al quarto grado compreso, con un professore appartenente al Dipartimento presso cui sarà svolto l'assegno ovvero con il Rettore, il Direttore Generale o un componente del Consiglio di Amministrazione dell'Ateneo.
- 7) di essere a conoscenza di tutte le norme contenute nel bando di concorso;
- 8) di impegnarsi a comunicare tempestivamente ogni eventuale cambiamento della propria residenza o del recapito.

Allega alla presente:

autocertificazione relativa alla laurea, con l'indicazione del titolo della tesi discussa e della votazione ottenuta in sede di esame di laurea.  
In caso di laurea ottenuta all'estero il titolo dovrà essere corredato dell'opportuna equivalenza o dovrà essere sottoposto al Consiglio di Dipartimento per il riconoscimento ai soli fini concorsuali – **ALLEGATO B**;  
copia delle pubblicazioni e degli eventuali altri titoli ritenuti utili per il giudizio della Commissione;  
dettagliato curriculum scientifico-professionale da cui risulti l'idoneità all'attività di ricerca da svolgersi.

Il/la sottoscritto/a autorizza l'Università degli Studi Roma Tre al trattamento dei dati personali, nel rispetto del D.lgs. n. 196 del 30/06/03.

Date, \_\_\_\_\_

\_\_\_\_\_  
(Signature)

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**ALLEGATO B**

**AUTOCERTIFICATION FOR THE DEGREES**

(DPR 28/12/2000, n° 445 "Testo Unico delle disposizioni legislative e regolamentari in materia di documentazione amministrativa")

Il sottoscritto (name and surname) .....  
nato a (born in) ..... (.....) il (date) ...../...../.....,  
residente in (city-nation of residence) ..... -  
Via (address) .....  
Tel. .... Mobile. .... E-mail .....

**DICHIARA (OBBLIGATORIO)**

1b. di aver conseguito la **LAUREA (MASTER OF)**

in .....  
in data \_\_\_\_/\_\_\_\_/\_\_\_\_ c/o l'Università .....  
rilasciata dalla Facoltà ....., con la votazione di \_\_\_\_/\_\_\_\_ (barrare in caso di LODE)

1b. di aver conseguito la **Dottorato di Ricerca (Ph.D)**

in .....  
in data \_\_\_\_/\_\_\_\_/\_\_\_\_ c/o l'Università .....  
rilasciata dalla Facoltà ....., con la votazione di \_\_\_\_/\_\_\_\_ (barrare in caso di LODE)

Il/la sottoscritto/a autorizza l'Università degli Studi Roma Tre al trattamento dei dati personali, nel rispetto del D.Lgs. n. 196 del 30/06/03.

Date, \_\_\_\_\_

\_\_\_\_\_  
(Signature)

**ALLEGARE FOTOCOPIA DI UN DOCUMENTO DI IDENTITA' (fronte - retro)**

**an ID card (or passport) MUST be enclosed**

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**ALLEGATO C**

**LIST OF OTHER TITLES OR PREVIOUS SCIENTIFIC PUBLICATION**  
(DPR 28/12/2000, n° 445 "Testo Unico delle disposizioni legislative e regolamentari in materia di documentazione amministrativa")

Il sottoscritto (name and surname) .....  
nato a (born in) ..... (.....) il (date) ...../...../.....,  
residente in (city-nation of residence) .....  
Via (address) .....  
Tel. .... Mobile. .... E-mail .....

**DICHIARA CHE SONO PIENAMENTE CONFORMI AGLI ORIGINALI**

le allegate copie dei seguenti titoli (**OTHER TITLES - that must be enclosed to the form**)

- a) .....
- b) .....
- c) .....
- d) .....
- e) .....
- f) .....
- g) .....
- h) .....

nonché le allegate copie delle seguenti pubblicazioni (**SCIENTIFIC PUBLICATIONS - that must be enclosed to the form**)

- a) .....
- b) .....
- c) .....
- d) .....
- e) .....
- f) .....
- g) .....
- h) .....
- i) .....
- j) .....
- k) .....

Il/la sottoscritto/a autorizza l'Università degli Studi Roma Tre al trattamento dei dati personali, nel rispetto del D.Lgs. n. 196 del 30/06/03.

Date, \_\_\_\_\_

\_\_\_\_\_  
(Signature)

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