6 DC positions within the program
Horizon Europe (HORIZON)

Marie Skłodowska-Curie Actions
Doctoral Networks (DN)

"NextBase"
"Base metal-catalytic cross-coupling methodologies towards sustainability"

(HORIZON-MSCA-2022-DN-01, project number 101119574 —NextBase)

OPEN CALL: 1st December 2023-15th January 2024

The **Horizon Europe MSCA-Doctoral Network (DN)** ***NextBase*** ("Base metal-catalytic cross-coupling methodologies towards sustainability") is run by a Consortium of **four academic** and **two non-academic groups** that offers highly attractive PhD positions in the field of transition metal-catalytic methodologies for organic synthesis to 6 Doctoral Candidates (DCs).

1. BENEFICIARIES

→ Università degli Studi di Milano (UMIL), Department of Chemistry – ITALY – Coordinator

→ Universität Graz (UNI GRAZ), Institute for Chemistry – AUSTRIA

→ Université de Caen Normandie (UNICAEN), Molecular and Thio-organic Chemistry Laboratory – FRANCE

→ Leibniz Institut für Katalyse e.V. an der Universität Rostock (LIKAT), Department of Synergies in Catalysis – GERMANY

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→ F.I.S. Fabbrica Italiana Sintetici S.p.A. (FIS), Research & Development Department – ITALY

→ Janssen Pharmaceutica N.V. (JANSSEN), Chemical Process Research and Development/HTE – BELGIUM

2. ASSOCIATED PARTNERS

→ DSM-Firmenich A.G. (FIRMENICH), R&D Division – SWITZERLAND

3. NextBase expected results

The research groups within the DN NextBase with various areas of expertise will cooperate towards the strategic goal of **replacing noble metals with 3d 'base metals'** (e.g., V, Mn, Fe, Co, Ni, Cu) as catalysts for a range of key chemical transformations:

- visible light-promoted C-heteroatom and C-C coupling;
- cross-coupling by C(sp^2)-H or C(sp^3)-H activation promoted by heterosubstituted cyclopentadienyl Co- and Fe-complexes;
- deoxygenative coupling of carbonyl compounds and lignin-derived building blocks;
- iron-catalyzed Kumada-type couplings;
- application of the methodologies to the synthesis of industrial targets (fine chemicals, APIs or API intermediates).

Within the *NextBase* research program, applicants can choose among **6 different PhD projects**, exploring base metal-catalyzed cross-coupling via different approaches. The state-of-the-art technologies and methodologies relevant to the project are listed below:

- organometallic chemistry;
- organic synthesis;
- photoredox catalysis;
- high-throughput experimentation;
- heterogeneous catalysis;
- ionic liquid-stabilized nanoparticles.

4. DOCTORATE COURSES/SCHOOLS

Each PhD project within ***NextBase*** will be carried out in one of the following Doctorate courses/schools and research groups.

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Beneficiary	DC	PhD-delivering institution	Doctorate Course/School	URL
Università degli Studi di Milano (UMIL)	DC1	UMIL	Doctoral Course in Industrial Chemistry	https://www.chimica.unimi.it/ecm/home/didattica/dottorati/dottorato-in-chimica
Universität Graz (UNI GRAZ)	DC2	UNI GRAZ	Doctoral School Chemistry	https://chemie.uni-graz.at/en/studying/doctoral-school-chemistry/
Université de Caen Normandie (UNICAEN)	DC3	COMUE Normandie Université	Ecole Doctorale Normande de Chimie (EDNC)	https://ed508-nc.normandie-univ.fr/
Leibniz Institut für Katalyse (LIKAT)	DC4	Universität Rostock (UROS)	Graduate Academy	https://www.uni-rostock.de/forschung/nachwuchsfoerderung/graduiertenakademie/
Fabbrica Italiana Sintetici S.p.A. (FIS)	DC5	UNI GRAZ	Doctoral School Chemistry	https://chemie.uni-graz.at/en/studying/doctoral-school-chemistry/
Janssen Pharmaceutica N.V. (JANSSEN)	DC6	UMIL	Doctoral Course in Industrial Chemistry	https://www.chimica.unimi.it/ecm/home/didattica/dottorati/dottorato-in-chimica

Each DC will attend the following **training activities**:

- **training through research** at the home institution;
- advanced courses/seminars and acquisition of **soft and transferable skills** provided by the doctorate course/school he/she is enrolled in;
- **network-wide training activities** at the *Network Meetings*, *Virtual Meetings*, *Summer Schools* and *International Symposium*;
- **Intersectoral secondments** (typically, 7 months + 3 months) to complement the training through research methods offered at the home institutions;

5. Why to participate into the *NextBase* program?

- ❖ Cutting-edge research on a high-impact topic related to sustainability
- ❖ Exposure to industrial research and process sustainability
- ❖ Top research centers in Europe
- ❖ Intersectoral program
- ❖ Advanced courses; summer schools; seminars
- ❖ International mobility plan
- ❖ Training-through-research opportunities in enterprises

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6. DCs RECRUITMENT

Each DC will receive a **36-month grant** to cover her/his participation costs, living, travel and installation allowance, family allowance, as follows:

Doctoral Candidate	Recruiting institution	Living allowance[a]	Mobility allowance	Family allowance[b]	Total maximum GROSS amount from REA (36 month)[c]
DC1	UMIL	3311,60	600,00	660,00	164577,60
DC2	UNI GRAZ	3614,20	600,00	660,00	175471,20
DC3	UNICAEN	3957,60	600,00	660,00	187833,60
DC4	LIKAT	3342,20	600,00	660,00	165679,20
DC5	FIS	3311,60	600,00	660,00	164577,60
DC6	JANSSEN	3400,00	600,00	660,00	167760,00[d]

[a] The amount is dependent on a country correction coefficient which takes into account the cost of living in the country of the recruiting institution.

[b] Amount corresponded to the DCs having or acquiring family obligations (i.e. persons linked to them by (i) marriage, or (ii) a relationship with equivalent status to a marriage recognized by the legislation of the country or region where this relationship was formalized; or (iii) dependent children who are being maintained by the them) during the action duration.

[c] These are the maximum GROSS amounts paid by the European Research Executive Agency (REA). Net salaries will depend on the national taxation applied by the recruiting institution's country and on possible extra-benefits granted by the employing institution.

[d] DC6 will be hired with a Janssen Pharmaceutica N.V. contract and will receive additional benefits as part of the company policy.

The cost of the PhD educational activities, as well as all expenses related to travels performed to attend schools, workshops, and network-organized events, will be paid by the network through the HORIZON EUROPE MSCA-DOCTORAL NETWORK grant.

DCs will be provided with office space and all facilities for their research project.

7. ELIGIBILITY CRITERIA

There are **strict eligibility requirements** for the DC positions in MSCA-Doctoral Networks (DNs). Please ensure to be qualified before applying, as ineligible candidates cannot be considered.

- Admission to the program is *open* to applicants who hold a **2nd Level Master Degree** (120 ECTS + 180 ECTS in a bachelor degree) or a **Single Cycle Degree** (minimum 300 ECTS), or a **comparable university degree** (Second Cycle qualification), as required by the partner universities for admission to doctoral studies. Applicants must submit a certified copy of any degree achieved by the **deadline of 15th January 2024**.
- At the time of recruitment applicants must (i) not have been awarded a doctorate and (ii) not have resided or carried out their main activity (work, studies, etc.) in the country of their host organization for more than 12 months in the 3 years immediately before their recruitment date.

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Compulsory national service and/or short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

- Requirements set by the Consortium concern Master's degree (or equivalent) graduates in the fields of chemistry, industrial chemistry, pharmaceutical chemistry, environmental chemistry, chemical engineering.

The Supervisory Board will pay special attention to respect gender balance.

8. SELECTION CRITERIA

The DCs will be selected on the basis of the following criteria (in random order):

- scientific skills and research experience;
- team work attitude and communication skills;
- career profile and potential for excellence;
- expected impact of the proposed training on their career.

9. HOW TO APPLY

Applicants can apply for **up to 3 PhD projects**, indicating the **order of preference**. All applications will have to be written in English and will be checked for eligibility. Ineligible or incomplete applications will not be considered.

Applications must be submitted on NextBase website (www.nextbase.network/) from **1st December 2023 at 17:00 central European time** (http://www.timeanddate.com/time/zones/cet) to **15th January 2024 at 17:00 central European time**.

Applicants are required to submit the following documents by **uploading them as PDF files along with the application form:**

- Detailed *curriculum vitae* (European format – List of publications, participation in funded research projects, other qualifications, if any, must be included);
- Certified copy of Academic Degree/s in original language along with a certified translation into English, and/or Diploma Supplement (if applicable);
- Certified copies of official Academic Transcripts relating to all academic courses taken to earn every degree (bachelor/master or equivalent), translated into English, and correspondent grade point average;
- Letter of research statement, describing the applicant's research experience in relation with

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the project/s s/he is applying for (max 1500 words). The letter will report a description of the applicant's master research project and a self-evaluation on scientific and soft skills (Form 1);

- Motivation letter (Form 2);
- Copy of passport (or, for EU citizens, equivalent ID document).

Handwritten applications and applications sent by email, post or fax will **not** be accepted.
Instructions on submission are provided on https://www.nextbase.network. For more information you may also send an email to nextbase@nextbase.network.
Additionally, **two recommendation letters** (prepared using the template contained in Form 3) must be sent directly by the referees to nextbase@nextbase.network, without putting the applicant in cc.
Failure to submit any of the above documents or lack of any of the required reference letters implies exclusion from the *NextBase* assessment procedure.
All data provided by the applicants are processed solely for the purpose of the *NextBase* call for applicants.

10. SELECTION PROCEDURE

NextBase will adopt the principles of the **European Charter for Researchers and Code of Conduct for the Recruitment of Researchers** promoting open, merit-based and transparent recruitment and attractive working and employment conditions.
The two-step procedure for applicants' selection is based on assessment of the documents attached to the application and on an interview (videoconference) to those applicants who have passed the first-step selection. The threshold to qualify for the interview will be set by the Supervisory Board and published on the *NextBase* website soon after the call deadline.
Shortlisted applicants will be informed of the interview process **within two weeks from the deadline for applications** by consulting the *NextBase* website.
Upon completion of the two-step procedure an **applicants' ranking list** will be published on the *NextBase* website based on the total score assigned to each applicant. A reserve list will be created.

For further information please contact:
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