2025 年國科會補助博士生赴西班牙研習計畫 申請須知

2025 Internship Program in Spain forTaiwanese PhD. Candidates

2025/02/04

為促進臺灣與西班牙之合作研究交流，國科會與西班牙高等科學研究委員會共同辦理臺灣博士班研究生赴西班牙研習計畫。西班牙該委員會旗下各領域研究機構提供臺灣在學博士生(下稱學員)研習機會，以瞭解西班牙之文化，吸取其研究經驗及態度，協同雙方指導教授/研究人員討論及定位未來兩國可能合作之主題及方向，促進雙方團隊實質合作研究。

一、 學員資格

(一) 具中華民國國籍

(二) 在國內大學修習博士學位且已取得博士候選人資格之在學博士生

(三) 具良好英語書寫與口語之溝通能力

(四) 已取得西班牙研習單位指導員前往研習之同意文件

二、 補助項目及內容

(一) 國際交通費：自臺灣至西班牙研習單位往返經濟艙機票(得含內陸長途大眾運輸交通費)一張，新臺幣 60,000 元。

(二) 生活津貼：2,000 歐元 (由國科會及西班牙研習單位各支應1,000歐元)。

(三) 其他費用：簽證費及出國研習期間保額 400 萬之因公赴國外出差人員綜合保險費。

三、 作業時程

(一) 受理申請：**2025年2月10日~2025年3月20日**

(二) 公告結果：2025年6月底前(若因不可抗力因素、協議機構審查時間或雙邊年會時程延後等，本會得視情形調整公布審查結果時間。)

(三) 研習期間：2 個月(含)以上，應於 2025 年 7～12 月間執行完畢；研習日期應徵得西班牙研習單位同意。

四、 研習單位

(一) 西班牙高等科學研究委員會轄下各領域研究機構 2025 年計有7個單位(計8個名額)開放接受我國博士候選人前往研習，各研習單位、研究主題及指導員名單，詳如附件。

(二) 學員應評估表列研究主題與自身研究論文之相關性，並主動與表列指導員聯繫，以瞭解該研習單位之特別要求及相關規定。倘有2項以上適合之研習機會，學員應列出個人優先序，一次僅聯繫一個單位。

(三) 部份研習單位可安排免費或價位合宜之住宿，學員與指導員聯繫時，可同時洽問或請其協助。

五、 申請方式及文件

(一) 登入國科會網站(https://www.nstc.gov.tw/)之學術研發服務網

(二) 點選「學術獎補助及申辦查詢」

(三) 點選「國際合作」頁籤下的「年輕人員國外研習」

(四) 作業辦法頁面中是目前徵求中之計畫，請點選「確定」

(五) 在案件申請頁面中，點選「新增」

(六) 點選計畫類別「2025年國科會補助博士生赴西班牙研習計畫」。

(七) 點選「申請新計畫」，確認「個人基本資料」後，按「下一步(儲存)」

(八) 開始填寫計畫資料，並依線上系統要求，上傳下列申請資料：

1. 中英文計畫申請表（依附件格式但以中文及英文分別填具）
2. 英文推薦函二份（得含指導教授推薦函；信函格式請參用附件）
3. 研習單位指導人員同意函
4. 學生證正反面影本及取得博士候選人資格證明
5. 身分證正反面及護照核發頁影本
6. 其他參考資料：包括個人已發表論文目錄、英語(或西班牙語)能力證明、修讀博士期間修課英文成績單等

(九) 線上填寫及上傳完畢後送出

(十) 推薦機構(就讀學校)於線上彙整送出後，於**114年3月20日(週四)**前備函檢附申請清冊一式二份，向本會提出申請。

六、 注意事項

(一) 有關獲得補助之經費撥付、結報與報告繳交等事宜，請依本會核定公文內容辦理，學員應於計畫結束後三個月內繳交結案報告書並辦理經費結報。

(二) 學員於本會通知獲補助後，應自行處理下列事項：

1. 應自行聯繫及安排在西班牙期間之住宿。
2. 於確認研習期間後，自行購買機票及旅遊平安保險。
3. 應與研習單位簽妥研習期間之學習及生活規範合約。
4. 應與研習單位商洽及確認所需簽證種類，逕行申辦。

七、 聯絡資訊

承辦人：國科會科教國合處李蕙瑩研究員及陳嘉苓小姐

電子信箱： vvlee@nstc.gov.tw; soniacc@nstc.gov.tw

八、 附件

(一) 2025 年西班牙高等科學研究委員會研習單位一覽表

(二) 中英文計畫申請表

(三) 推薦信(格式)

CSIC Scientific Supervisor /Contact	Host Center CSIC	Website	Vacancies	Researh Groups	Scientific area
Jonas Bruno Ruh jruh@icm.csic.es	Institute of Marine Science (ICM)	https://www.icm.csic.es/en/research-group/barcelona-center-subsurface-imaging	1	**Barcelona Center for Subsurface Imaging.** The group research in Earth Sciences has a multidisciplinary approach that spans across 1) theoretical development, 2) field data analysis and processing, 3) numerical modelling, and 4) final geological interpretation. In that line, two major aims of the group are to obtain new types of observations, and also more detailed and accurate measurements to improve and make more objective geological interpretations.	Geodynamic numerical modelling, mechanics of lithospheric deformation and the overall structure of the lithosphere. Ideal is a Master in geophysics or structural geology. The internship does not require any experience in geodynamic modelling and may be seen as a stepping stone for interested students. Knowledge on working with Matlab is required.
José Luis Pinilla jlpinilla@icb.csic.es	Institute of Carbochemistry (ICB)	https://www.icb.csic.es/grupo-de-conversion-de-combustibles/	1	**Conversion Group of Fuels.**The research activity of the Fuel Conversion Group has as its general objective the development of innovative processes and materials for, on the one hand, obtaining more efficient and environmentally friendly energy vectors such as hydrogen, biofuels, or light hydrocarbons; and on the other, the development of components of electrochemical devices for the efficient storage and conversion of energy.	Chemical Engineering, Chemistry, Materials or related disciplines
Olga Caballero Calero olga.caballero@csic.es	Micro and Nanotechnology Institute (IMN)	https://imn.csic.es/ https://finder.imn-cnm.csic.es/	1	**Functional Nanoscale Devices for Energy (FINDER).** FINDER is a multidisciplinary research group focused on developing nano-structured meta-materials with tailored thermal and transport properties, implementing measurement systems to characterize them and designing devices based on these nanostructured materials for more efficient energy harvesting.	Physics, materials engineering, with interest in experimental work and willing to learn
Javier Osca Cotarelo javier.osca@uib.cat	Institute for Cross-Disciplinary Physics and Complex Systems (IFISC)	https://ifisc.uib-csic.es/en/research/transport-and-information-quantum-systems/	1	**Understanding of Quantum Complex Phenomena (FISNANO)**. They play a key role in the development of Quantum Technologies identified as one of the most strategic areas for future research and innovation. In this research line, they are devoted to questions related to quantum transport for charge(nanoelectronics), spin (spintronics), energy (thermoelectrics) and information (quantum correlations), with a particular focus on nanostructures. They also investigate decoherence effects in complex environments, explore quantum probing, and emergent phenomena such as synchronization, with a focus on quantum correlations and thermodynamics and their impact on information processing.	Master's degree in Physics, Materials Science, or a related field Strong foundation in quantum mechanics and solid-state physics Excellent academic record with a focus on theoretical and computational physics Proficiency in programming languages such as Python or C++ Experience with numerical simulations and computational modelling Quantum transport phenomena in nanostructures Spintronics and nanoelectronics Thermoelectric effects at the nanoscale

CSIC Scientific Supervisor /Contact	Host Center CSIC	Website	Vacancies	Researh Groups	Scientific area
Bernabe Linares-Barranco bernabe@imse-cnm.csic.es	Seville Institute of Microelectronics-National Microelectronics Center (IMSE-CNM)	http://www.imse-cnm.csic.es/neuromorphs	2	IMSE Neuromorphic group develops sensory and processing microchips that mimic sensing and processing in biological beings. It also develops multi-chip and hybrid chip-FPGA systems to scale up to higher complexity systems. The group also works on algorithms and sensory processing for spiking information sensing, coding and processing. Chips use mixed signal, low current, and/or low power, circuit techniques, as well as high speed communication techniques. The group uses mixed or digital CMOS technologies, as well as application projections exploiting emergent nanoscale technologies or new devices like memristors	Analog and/or digital background profile on ASIC design, with knowledge on cadence virtuoso (for analog and mixed-signal), or vhdl/Verilog, GENUS or similar digital synthesis tools, DRC, LVS, PEX, etc. FPGA programming skills, vhdl/Verilog, VIVADO or similar. Software skills for AI/SNNs, eg. Python, C, matlab, and knowledge about learning neural systems.
Mariella Dimiccoli mdimiccoli@iri.upc.edu	Institute of Robotics and Industrial Informatics (IRI)	https://www.iri.upc.edu/	1	**Perception & Manipulatio**n. The research of PERCEPTION AND MANIPULATION group focuses on enhancing the perception, learning, and planning capabilities of robots to achieve higher degrees of autonomy and user-friendliness during everyday manipulation tasks. Some topics addressed are the geometric and semantic interpretation of perceptual information, construction of 3D object models, action selection and planning, reinforcement learning, and teaching by demonstration	Students with a degree in Computer science, Computer Engineering, AI or Data Science are specially encojuraged to apply
David Alonso Gimenez dalonso@ceab.csic.es	The Blanes Centre for Advanced Studies (CEAB)	https://www.ceab.csic.es/en/	1	**Theoretical and Computational Ecology**. Provide conceptual advance to ecological theory using as essential tools mathematical and computational techniques. By empowering ecology with fundamental principles of stochastic processes and quantitative methods, we are particularly interested in building a bridge between theory and data. We are a highly collaborative and multidisciplinary research group that develops specific research lines and provides general theoretical foundations of observational and empirical research in ecology. The group is particularly strong in the analysis of data-rich systems (field or lab) in the context of (1) Population Ecology, (2) Community Ecology and Biodiversity, (3) Movement Ecology, (4) Invasion Biology, and (5) Epidemics	Computational and Mathematical background or willing to go deep into it is required
	TOTAL		**8**		

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NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: **Jonas Bruno Ruh**	
EMAIL: jruh@icm.csic.es	**PHONE NUMBER: 681966859**
ICU'S (INSTITUT/CENTER/UNIT) NAME: Institute of Marine Science (ICM)	
ICU'S ADDRESS: Passeig Marítim de la Barceloneta 37-49	
RESEARCH GROUP: Barcelona Center of Subsurface Imaging	
CENTER/RESEARCH GROUP'S WEBSITE: https://www.icm.csic.es/en/research-group/barcelona-center-subsurface-imaging	
NUMBER OF STUDENTS WILLING TO WELCOME: 1	
BRIEF DESCRITION OF THE RESEARCH GROUP: The group research in Earth Sciences has a multidisciplinary approach that spans across 1) theoretical development, 2) field data analysis and processing, 3) numerical modelling, and 4) final geological interpretation. In that line, two major aims of the group are to obtain new types of observations, and also more detailed and accurate measurements to improve and make more objective geological interpretations.	
STUDENTS' ACADEMIC PROFILE (brief description of the student academic background): The student will work on geodynamic numerical modelling, mechanics of lithospheric deformation, and the overall structure of the lithosphere. Ideal is a Master in geophysics or structural geology. The internship does not require any experience in geodynamic modelling and may be seen as a stepping stone for interested students. Knowledge on working with Matlab is required.	
BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task): The student will have the possibility to enter the world of geodynamic modelling. A close supervision will allow him/her to learn how to setup and run state-of-the-art numerical models. After the internship, the student will return with the possibility to use the applied code, which will strengthen his/her future research profile. The ICM lays in the heart of Barcelona, where the student will find an open and motivated research group to host him/her, providing an ideal environment for a successful internship.	

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher: **Center Director:** **ICU Manager:**

RUH JONAS BRUNO - Y4705671T
Digitally signed by RUH JONAS BRUNO - Y4705671T
Date: 2024.12.19 11:05:29 +01'00'

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NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: José Luis Pinilla	
EMAIL: jlpinilla@icb.csic.es	**PHONE NUMBER: +34976733977**
ICU'S (INSTITUT/CENTER/UNIT) NAME: Instituto de Carboquímica	
ICU'S ADDRESS: C/ Miguel Luesma Castán, 4. Zaragoza	
RESEARCH GROUP: Fuel Conversion group	
CENTER/RESEARCH GROUP'S WEBSITE: https://www.icb.csic.es/grupo-de-conversion-de-combustibles/	
NUMBER OF STUDENTS WILLING TO WELCOME: 1	

BRIEF DESCRITION OF THE RESEARCH GROUP:

The research activity of the Fuel Conversion Group has as its general objective the development of innovative processes and materials for, on the one hand, obtaining more efficient and environmentally friendly energy vectors such as hydrogen, biofuels, or light hydrocarbons; and on the other, the development of components of electrochemical devices for the efficient storage and conversion of energy.

STUDENTS' ACADEMIC PROFILE (brief description of the student academic background):

Background in Chemical Engineering, Chemistry, Materials or related disciplines.

BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task):

The main objective will be the development of metal catalysts supported on carbon nanofibers for processes aimed at producing sustainable aviation fuels. These catalysts will have potential applications in the conversion of liquid paraffinic products obtained through the hydrotreatment of fatty acids or Fischer-Tropsch (FT) synthesis. The distinctive feature of these bifunctional catalysts is that they must achieve an appropriate balance between acidic and metallic sites to hydrocrack and hydroisomerize long-chain linear hydrocarbons. To obtain the active phase, the support will be impregnated via wet impregnation with Pt or Ni solutions. The supports will be modified by doping with different heteroatoms.

The synthesized catalysts will be characterized using XRD, XPS, TPR, TPO, TPD, SEM, and TEM techniques. The identification of the components of the produced biofuels will be determined using

GC-FID and GC-MS. Finally, the catalysts will be tested in the hydroisomerization/hydrocracking reaction of FT waxes (long-chain linear paraffins) in a continuous trickle bed reactor capable of operating at high H2 pressures.

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher: **Center Director:** **ICU Manager:**

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NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: Dr. Olga Caballero Calero	
EMAIL: Olga.caballero@csic.es	**PHONE NUMBER: 918060700**
ICU'S (INSTITUT/CENTER/UNIT) NAME: Instituto de Micro y Nanotecnología (IMN. Micro and Nanotechnology Institute)	
ICU'S ADDRESS: Isaac Newton 8, 28760 Tres Cantos, Madrid, Spain	
RESEARCH GROUP: FINDER (Functional Nanoscale Devices for Energy)	
CENTER/RESEARCH GROUP'S WEBSITE: https://imn.csic.es/ **IMN;** https://finder.imn-cnm.csic.es/ **FINDER**	
NUMBER OF STUDENTS WILLING TO WELCOME: 1	
BRIEF DESCRITION OF THE RESEARCH GROUP: FINDER is a multidisciplinary research group focused on developing nano-structured meta-materials with tailored thermal and transport properties, implementing measurement systems to characterize them and designing devices based on these nanostructured materials for more efficient energy harvesting.	
STUDENTS' ACADEMIC PROFILE (brief description of the student academic background): Physics, materials engineering, with interest in experimental work and willing to learn.	
BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task): Join Us in Spain to Explore Cutting-Edge Thermoelectric Generators! We invite you to be part of an exciting research opportunity in the field of thermoelectric generators—devices capable of converting waste heat into electrical energy. This innovative technology has immense potential, such as powering sensors using the residual heat emitted by the human body. While traditional materials have limited efficiency due to their intrinsic properties, the advent of nanotechnology is revolutionizing the field by enhancing performance through nano-structured materials.	

The proposed research will take place within the FINDER group (Functional Nanostructured Devices for Energy Recovery) at the Institute of Micro and Nanotechnology (IMN-CNM, CSIC), located in Tres Cantos, Spain. The project focuses on developing thermoelectric generators through electrochemical deposition in flexible nanoporous matrices. You will engage in a range of activities, including:

- Fabrication: Developing thermoelectric generators using cutting-edge techniques.
- Characterization: Evaluating thermoelectric properties such as electrical conductivity, thermal conductivity, and Seebeck coefficient, while optimizing an experimental system for these measurements.
- Mechanical Analysis: Assessing flexibility and adaptability to various surfaces.
- Geometric Optimization: Utilizing advanced modeling tools like COMSOL Multiphysics to refine the final designs.

This research not only offers a chance to work in a state-of-the-art facility but also provides an incredible opportunity to immerse yourself in the vibrant culture of Spain. Gain hands-on experience with nanotechnology, and contribute to groundbreaking advancements in sustainable energy solutions.

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher:	**Center Director:**	**ICU Manager:**
Dr. Olga Caballero Calero	Dr. María Luisa Dotor Castilla	Mrs. Paloma Blasco

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NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

<table>
<tr><td colspan="2">CSIC SCIENTIFIC SUPERVISOR: Javier Osca Cotarelo</td></tr>
<tr><td>EMAIL: javier.osca@uib.cat</td><td>PHONE NUMBER: +34 971 25 98 38</td></tr>
<tr><td colspan="2">ICU'S (INSTITUT/CENTER/UNIT) NAME: Institute for Cross-Disciplinary Physics and Complex Systems (IFISC)</td></tr>
<tr><td colspan="2">ICU'S ADDRESS: Edifici Instituts Universitaris de Recerca Campus Universitat de les Illes Balears E-07122 Palma, Mallorca, Spain</td></tr>
<tr><td colspan="2">RESEARCH GROUP: FISNANO</td></tr>
<tr><td colspan="2">CENTER/RESEARCH GROUP'S WEBSITE: https://ifisc.uib-csic.es/en/research/transport-and-information-quantum-systems/</td></tr>
<tr><td colspan="2">NUMBER OF STUDENTS WILLING TO WELCOME: 1</td></tr>
<tr><td colspan="2">BRIEF DESCRITION OF THE RESEARCH GROUP:
Understanding of Quantum Complex Phenomena plays a key role in the development of Quantum Technologies identified as one of the most strategic areas for future research and innovation.

In this research group, we are devoted to questions related to quantum transport for charge (nanoelectronics), spin (spintronics), energy (thermoelectrics) and information (quantum correlations), with a particular focus on nanostructures.</td></tr>
<tr><td colspan="2">STUDENTS' ACADEMIC PROFILE (brief description of the student academic background):
We are seeking a highly motivated candidate to join our research group focused on understanding quantum complex phenomena and their applications in quantum technologies. The ideal candidate will have the following qualifications and characteristics:

Academic Background</td></tr>
</table>

Master's degree in Physics, Materials Science, or a related field

Strong foundation in quantum mechanics and solid-state physics

Excellent academic record with a focus on theoretical and computational physics

Technical Skills

Proficiency in programming languages such as Python or C++

Experience with numerical simulations and computational modelling

Research Interests

The candidate should have a keen interest in:

Quantum transport phenomena in nanostructures

Spintronics and nanoelectronics

Thermoelectric effects at the nanoscale

BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task):

A PhD student working on topological insulators will be tasked with exploring the unique electronic properties of these fascinating materials at the frontier of condensed matter physics. The student will be working with transport models of topological insulators and in the research of potential applications. Ultimately, the student's work will contribute to the broader understanding of topological phases of matter and their potential technological implications.

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher: **Center Director:** **ICU Manager:**

NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: Bernabe Linares-Barranco (www.imse-cnm.csic.es/~bernabe)

EMAIL: bernabe@csic.es | **PHONE NUMBER:** +34954466666

ICU'S (INSTITUT/CENTER/UNIT) NAME: Instituto de Microelectrónica de Sevilla (IMSE-CNM), www.imse-cnm.csic.es

ICU'S ADDRESS: Av. Américo Vespucio 28, 41092 Sevilla, Spain

RESEARCH GROUP: Neuromorphic Systems (www.imse-cnm.csic.es/neuromorphs**)**

CENTER/RESEARCH GROUP'S WEBSITE: www.imse-cnm.csic.es , www.imse-cnm.csic.es/neuromorphs

NUMBER OF STUDENTS WILLING TO WELCOME: 2

BRIEF DESCRITION OF THE RESEARCH GROUP:

Our develops ASICs, FPGA systems, and Software algorithms for neuromorphic engineering systems, focusing on the following aspects:

- Dynamic Vision Sensors (DVS). We have developed several generations of DVS cameras [1-2], are presently looking at electronically foveated DVS [3], have 4 patents, and are co-founders of Prophesee (www.prophesee.ai).
- Spiking Neural Network Processors exploiting FPGAs [4-7]
- Spiking Neural Network chips exploiting emerging nanotechnology memristors [8-11]
- Software-based processing explorations for Spiking Neural Networks [12-16]

[1] J. A. Leñero-Bardallo, T. Serrano-Gotarredona, B. Linares-Barranco, "A 3.6us Asynchronous Frame-Free Event-Driven Dynamic-Vision-Sensor," *IEEE J. of Solid-State Circuits*, vol. 46, No. 6, pp. 1443-1455, June 2011.

[2] T. Serrano-Gotarredona and B. Linares-Barranco, "A 128x128 1.5% Contrast Sensitivity 0.9% FPN 3us Latency 4mW Asynchronous Frame-Free Dynamic Vision Sensor Using Transimpedance Amplifiers," *IEEE J. Solid-State Circuits*, vol.48, No. 3, pp. 827-838, March 2013.

[3] F. Faramarzi, B. Linares-Barranco, T. Serrano-Gotarredona, "A 128×128 Electronically Multi-Foveated Dynamic Vision Sensor with Real-Time Resolution Reconfiguration," *IEEE Access*, vol. 12, pp. 192656-192671, 2024

[4] C. Zamarreño-Ramos, A. Linares-Barranco, T. Serrano-Gotarredona, and B. Linares-Barranco, "Multi-Casting Mesh AER: A Scalable Assembly Approach for Reconfigurable Neuromorphic Structured AER Systems. Application to ConvNets," *IEEE Trans. on Biomedical Circuits and Systems,* vol. 7, No. 1, pp. 82-102, Feb. 2013.

[5] A. Yousefzadeh, M. Jablonski, T. Iakymchuk, A. Linares-Barranco, A. Rosado, L. A. Plana, S. Temple, T. Serrano-Gotarredona, S. Furber, and B. Linares-Barranco, "On Multiple AER Handshaking channels over High-Speed Bit-Serial Bi-Directional LVDS Links with Flow-Control and Clock-Correction on Commercial FPGAs for Scalable Neurmorphic Systems," *IEEE Trans. on Biomedical Circuits and Systems*, vol. 11, No. 5, pp. 1932-4545, Oct. 2017.

[6] L. Camuñas-Mesa, Y. Domínguez-Lázaro, A. Linares-Barranco, T. Serrano-Gotarredona, and B. Linares-Barranco, "A Configurable Event-Driven Convolutional Node with Rate Saturation Mechanism for Modular ConvNet Systems Implementation," *Frontiers in Neuromorphic Engineering. Front. Neurosci.*, vol. 12, 2018

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STUDENTS' ACADEMIC PROFILE (brief description of the student academic background):

We welcome students with good academic profile in the following areas:

- Analog and/or digital background profile on ASIC design, with knowledge on cadence virtuoso (for analog and mixed-signal), or vhdl/Verilog, GENUS or similar digital synthesis tools, DRC, LVS, PEX, etc.
- FPGA programming skills, vhdl/Verilog, VIVADO or similar.
- Software skills for AI/SNNs, eg. Python, C, matlab, and knowledge about learning neural systems.

BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task):

The tasks could be some of the following:

- Design an analog and/or mixed signal component for a neuromorphic system (either sensor or processor)
- Design a memristor based circuit exploiting some emerging device in hybrid CMOS/memristor technology (HfOx memristor, Ferroelectric FET, FTJ, etc)
- Program a learning spiking neural network rule onto FPGA
- Program a stereo vision algorithm (or part of it) for DVS cameras on FPGA
- Develop some code for training an event-driven spiking neural network using DVS recorded data

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher: **Center Director:** **ICU Manager:**

NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: Mariella Dimiccoli	
EMAIL: mdimiccoli@ir.upc.edu	**PHONE NUMBER:** +34667330940
ICU'S (INSTITUT/CENTER/UNIT) NAME: Institut de Robòtica e Informàtica Industrial (CSIC-UPC)	
ICU'S ADDRESS: Carrer de Llorens i Artigas 4-6, 08028, Barcelona	
RESEARCH GROUP: Perception & Manipulation	
CENTER/RESEARCH GROUP'S WEBSITE: www.iri.upc.edu	
NUMBER OF STUDENTS WILLING TO WELCOME: 1	
BRIEF DESCRITION OF THE RESEARCH GROUP: The research of PERCEPTION AND MANIPULATION group focuses on enhancing the perception, learning, and planning capabilities of robots to achieve higher degrees of autonomy and user-friendliness during everyday manipulation tasks. Some topics addressed are the geometric and semantic interpretation of perceptual information, construction of 3D object models, action selection and planning, reinforcement learning, and teaching by demonstration.	
STUDENTS' ACADEMIC PROFILE (brief description of the student academic background): Students with a degree in Computer science, Computer Engineering, AI or Data Science are specially encojuraged to apply.	
BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task): The student will join the group efforts to develop a model for long-term anticipation of actions, given the observation of an initial video interval. The model will be validated on public benchmark datasets as Ego4D and EPIC-Kitchen.	

A minimum of €1.200 FOR LIVING EXPENSES WILL BE THE FINANCIAL CONTRIBUTION FROM THE CSIC CENTER TO THE STUDENTS

Responsible Researcher: Firmado por DIMICCOLI MARIA - ****1755* el día 18/12/2024 con un

Center Director: **ICU Manager:**

NSTC-CSIC PHD INTERNSHIP PROGRAMME 2025

EXPRESSION OF INTEREST

CSIC SCIENTIFIC SUPERVISOR: **David Alonso Gimenez**	
EMAIL: dalonso@ceab.csic.es	**PHONE NUMBER: 647841899**
ICU'S (INSTITUT/CENTER/UNIT) NAME: CEAB	
ICU'S ADDRESS: Carrer Acces Cala Sant Francesc, 14. 17300-Blanes. Spain	
RESEARCH GROUP: Theoretical and Computational Ecology	
CENTER/RESEARCH GROUP'S WEBSITE: https://theelab.net/	
NUMBER OF STUDENTS WILLING TO WELCOME:	
BRIEF DESCRITION OF THE RESEARCH GROUP: Our aim is to provide conceptual advance to ecological theory using as essential tools mathematical and computational techniques. By empowering ecology with fundamental principles of stochastic processes and quantitative methods, we are particularly interested in building a bridge between theory and data. We are a highly collaborative and multidisciplinary research group that develops specific research lines and provides general theoretical foundations of observational and empirical research in ecology. The group is particularly strong in the analysis of data-rich systems (field or lab) in the context of (1) Population Ecology, (2) Community Ecology and Biodiversity, (3) Movement Ecology, (4) Invasion Biology, and (5) Epidemics	
STUDENTS' ACADEMIC PROFILE (brief description of the student academic background): **Computational and Mathematical background or willing to go deep into it is required.**	
BRIEF EXPLANATION THAT MOTIVATES THE STAY OF THE STUDENT(S) WHO WOULD MAKE THE STAY (brief description of the student's task): **The student will implement simulation eco-evolutionary models (from consumer-resource interactions to evolution of mating**	

strategies, depending on student's preferences) based on stochastic processes in continuous time, and strategies of model selection technics to test them with observational and empirical data.

Firmado por ALONSO GIMENEZ DAVID - DNI 36981503X el día 27/12/2024 con un certificado emitido

A minimum of €1.200 FOR LIVING EXPENSES

CONTRIBUTION FROM THE CSIC CENTER TO TH

Responsible Researcher: David Alonso **nter**

Director: Marc Rius **ICU Manag**

2025 年國科會補助國內博士生赴西班牙研習計畫
中文申請表

姓　名			
性　別	□ 男　□ 女	出生日期(西元)	(yyyy/mm/dd)
電話/手機		研究室電話	
E-mail1/E-mail2			
通訊地址			
就讀學校	(請寫全名)		
系所/年級	(請寫全名)；博生班第___年		
指導教授	姓名(中/英)： 服務單位／系所： 聯絡電話： E-mail:		
第一位推薦人	姓名(中/英)： 服務單位／系所： 聯絡電話： E-mail:		
第二位推薦人	姓名(中/英)： 服務單位／系所： 聯絡電話： E-mail:		
預訂之博士論文題目			
近三年 獲獎事蹟			
研究成果	參與或執行學術研究之個人論文發表情形？ □ 國際學術期刊 已發表____篇；期刊審稿中 ____篇 □ 國際會議____篇 □ 國內會議____篇 □ 其他：_____		

語言能力	英語： 1. 是否曾在歐美國家留學一年以上? □ 是 □ 否 2. 提供之英語能力證明文件名稱及分數(或等級) _____ 3. 若 1 及 2 均無，請自評個人在聽、說、讀及寫之程度 (如：流利、佳、普通、少許、不會)
	西班牙語：(請參考英語欄位自評個人在聽、說、讀及寫之程度)
擬申請在西班牙 CSIC 研習之資訊	
研習單位簡稱	
研習主題	
計畫主持人姓名	
預訂研習期間	(起迄日期)yyyy/mm/dd ~ yyyy/mm/dd (計 X 個月)
住宿	□ 由研習單位協助安排 □ 自行安排
研習動機	(請說明參與此研習計畫之適合性、預期效益及未來發展合作研究的可能性。說明請勿超過 1 頁。請用標楷體或新細明體字型，12 號字，單行間距。)

學習及研究現況	(請提供目前學習或研究之興趣、主題及參與計畫之簡要說明，包括廣義之研究興趣及深入研究主題。說明請勿超過 1 頁。請用標楷體或新細明體字型，12 號字，單行間距。)

申請人簽名：_____ 日期：

臺灣指導教授簽名：_____ 日期：

2025 Internship Program in Spain for Taiwanese PhD. Students
Application Form

Name	Last Name: First Name:		
Sex	☐ Male ☐ Female	Birthday	(yyyy/mm/dd)
Telephone/Mobile		Lab Telephone	
E-mail1/E-mail2			
Mailing Address			
University	(Please provide the full name, not using abbreviations)		
Institute/year	(Please provide the full name, not using abbreviations); / Enrolled Year __		
Taiwanese Supervisor	Name (Chinese and English)： Uni/Institute: Telephone: E-mail:		
Recommender 1	Name (Chinese and English)： Uni/Institute: Telephone: E-mail:		
Recommender 2	Name (Chinese and English)： Uni/Institute: Telephone: E-mail:		
Tentative Title of Thesis			
Awards in the last 3 years			
Research Papers	Journal: ☐ Published _____ ; ☐ Under review_____ International Conference: ☐ Published _____ ; ☐ Under review_____ Local academic conference: ☐ Published ____ ; ☐ Under review____ ☐ Others: _____		

Language	English (listening/speaking/reading/writing)： Spanish (listening/speaking/reading/writing)：
Hosting Laboratory/Unit in CSIC	
Name of CENTRO	
Topic of Study	
Name of PI	
Duration	from (yyyy/mm/dd) to (yyyy/mm/dd), for the period of ___ months
Housing	Housing arranged by PI：□Yes／□No
Statement of Purpose	(Explain your unique qualifications for participation in the Internship Program and list the benefits the program will provide to your professional development. May not be exceeding one page. Please type in single space in size 12.)

Description of Current Studies	(Provide a summary of your current studies and/or research projects, and interests. Please write the summary for a technical audience and identify both a general field of study and specific research interests. May not be exceeding one page. Please type in single space in size 12.)

Signature of Applicant: _____ Date:_____

Signature of Supervisor: _____ Date:_____

2025 年國科會補助國內博士生暑期赴西班牙研習計畫推薦信

Recommendation Letter for NSTC-CSIC Internship Program in Spain for Taiwanese PhD.

申請人(學生)姓名 Name of Applicant	中文: 英文: (Last name), (First name)
推薦人姓名 Recommender	中文: 英文: (Last name), (First name)
服務單位/系所 Uni /Institute	中文: (請寫完整名稱) 英文:
推薦人聯絡電話 Telephone	
推薦人 E-mail	

1. How long, and in what capacity, have you known the applicant?

2. In specific terms, explain how the Internship Program will benefit to the applicant. What unique approaches, opportunities, or skills will the applicant obtain in Spain?

3. Briefly describe the applicant's research contributions, the quality of the research, and the potential significance of the research to your discipline or field.

4. I rank this applicant in the top____(one-ten) among ten of PhD students I have supervised over the last three years.

5. Please check one of the two statements below.
   a. ____My identity and this report must be held in confidence.
   b. ____This report may be released to the applicant upon request.

   I have read and understood the terms and conditions of the Internship Program in Taiwan, and I endorse this applicant's full participation in the program.

Signature：

Date：

Note:

1. Please give your comments in English for student in items 1-3.
2. The completed recommendation letters are necessary for applicants' submission. Failure to return this form in a timely fashion will jeopardize the application.