



POSTDIGITAL+

European Training Network on Post-Digital Computing +

Programme

HORIZON.1.2 - Marie Skłodowska-Curie Actions (MSCA) Main Programme

Topic

HORIZON-MSCA-2023-DN-01-01 - MSCA Doctoral Networks 2023

Call for proposal

HORIZON-MSCA-2023-DN-01



UNIT OF
EXCELLENCE
MARÍA
DE MAEZTU

IFISC Winter Solstice Event (2024)

Grant agreement ID: 101169118
DOI: 10.3030/101169118
Time-frame: 1/2/2025 – 31/1/2029
Coordinator: IFISC-UIB
Budget (EU Contribution): 3,681,576.00 €

Budget for IFISC-UIB

503,942.40 €

Budget for IFISC-CSIC

503,942.40 €

Total budget for IFISC

1,007,884.80 €



Aim

Training a cohort of **15+2** highly skilled doctoral candidates and form a new generation of engineers and researchers, offering them a uniquely broad interdisciplinary education that enables them to **design and develop unconventional computing systems**.

POSTDIGITAL+ builds on the success of training and research carried out under the trail-blazing ETN POSTDIGITAL (2020-2024) that provided a unique opportunity for 15 DCs in the interdisciplinary field of **disruptive neuromorphic computational technologies and their applications**.

Research pillars

Advanced efficient, low complexity **low-power-consumption algorithms** suitable for real-time neuromorphic technology implementation

Experimental demonstration of **photonic integrated systems** for neuromorphic computing

Design of **scalable** all-analogue photonic neural networks

Applications of neuromorphic signal processing in **telecom and imaging**

Supervising researchers



Claudio R. Mirasso
(COORDINATOR, PI)



Apostolos Argyris

IFISC-UIB



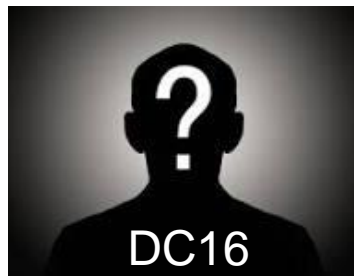
Miguel C. Soriano
(PI)



Ingo Fischer

IFISC-CSIC

Doctoral candidates





Brain-inspired computing based on photonic oscillators

This project aims at transferring recent concepts in cognitive neuroscience and machine learning over into the photonic domain.



Coupled laser networks for information processing

The project focuses on implementing fiber-coupled semiconductor laser networks for ultra-fast information processing.



Optical computing with few-mode and multimode fibers

The project makes use of the spatial information obtained from mode mixing along the fiber propagation in few-mode (multimode) fibers for optical computing.



Novel optical reservoir computing architectures with multiple delay loops and amplification

The project aims at designing novel optical reservoir computing architectures using telecom components.



Seven (7) additional DCs from the POST-DIGITAL+ consortium will be hosted for 2-month secondments at IFISC

All 4 positions will be hosted at IFISC and will be inscribed at the UIB doctorate school



<https://ifisc.uib-csic.es/en/about-ifisc/join-us/doctoral-positions-photonic-computing-research-center-excellence-mallorca/>

<https://euraxess.ec.europa.eu/jobs/286441>

Deadline for applications: 31/12/2024

Earliest starting date: 1/3/2025

THANK YOU

for your attention!

apostolos@ifisc.uib-csic.es



**Horizon Europe
2021-2027**



MARIE CURIE ACTIONS