



# Solar2Chem – Training Network for (Photo)Electrocatalytic Conversion of Valuable Chemicals

Solar2Chem ESRs,  
Jokotadeola Odutola & Sebastiano Gadolini

4<sup>th</sup> June 2021

#EUGreenWeek  
2021 PARTNER EVENT





1. Motivation
2. Objectives
3. Vision and Training
4. Project Network



## Key Features of:

1. Marie Skłodowska-Curie Actions
2. Innovative Training Networks

# Motivation

**1** NO POVERTY



**2** ZERO HUNGER



**3** GOOD HEALTH AND WELL-BEING



**4** QUALITY EDUCATION



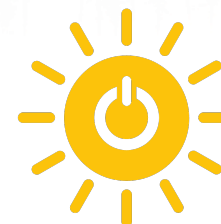
**5** GENDER EQUALITY



**6** CLEAN WATER AND SANITATION



**7** AFFORDABLE AND CLEAN ENERGY



**8** DECENT WORK AND ECONOMIC GROWTH



**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE



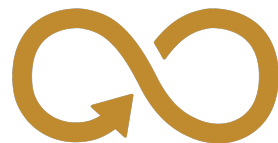
**10** REDUCED INEQUALITIES



**11** SUSTAINABLE CITIES AND COMMUNITIES



**12** RESPONSIBLE CONSUMPTION AND PRODUCTION



**13** CLIMATE ACTION



**14** LIFE BELOW WATER



**15** LIFE ON LAND



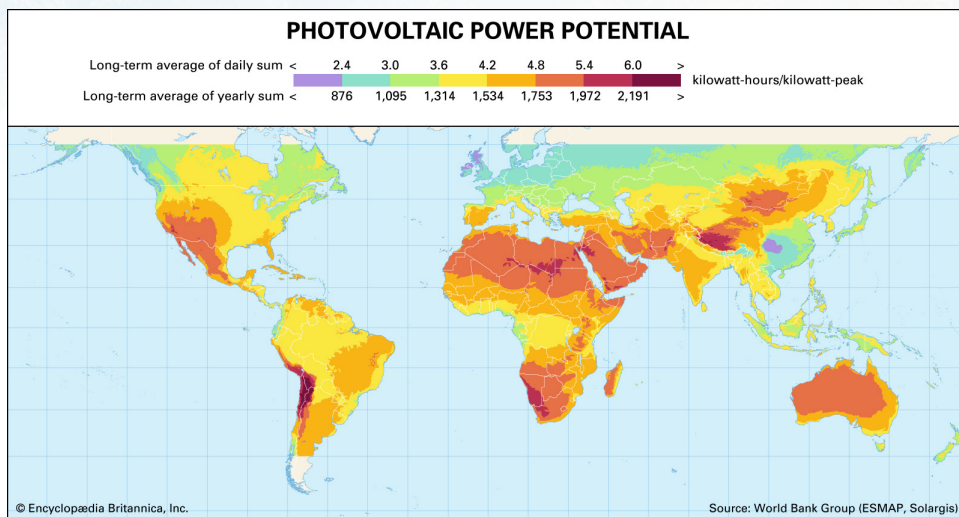
**16** PEACE, JUSTICE AND STRONG INSTITUTIONS



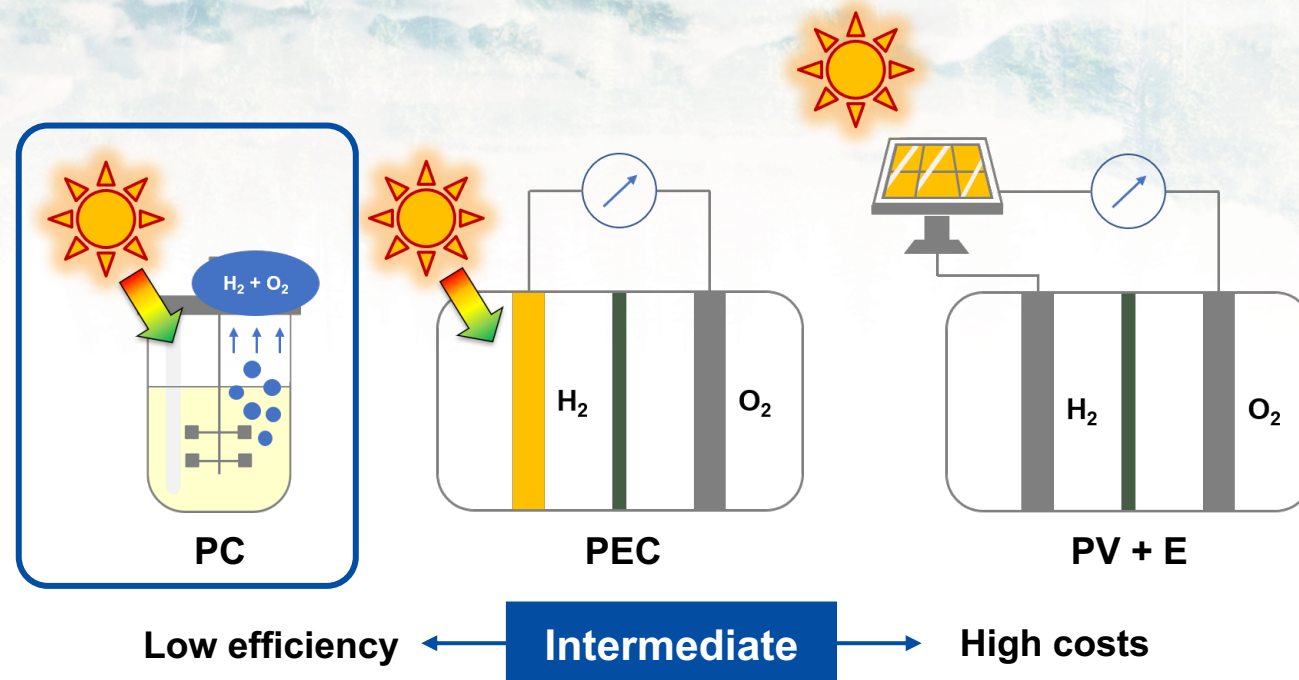
**17** PARTNERSHIPS FOR THE GOALS



**SUSTAINABLE DEVELOPMENT GOALS**



Ashok, S.. "Solar energy". *Encyclopedia Britannica*, 2020



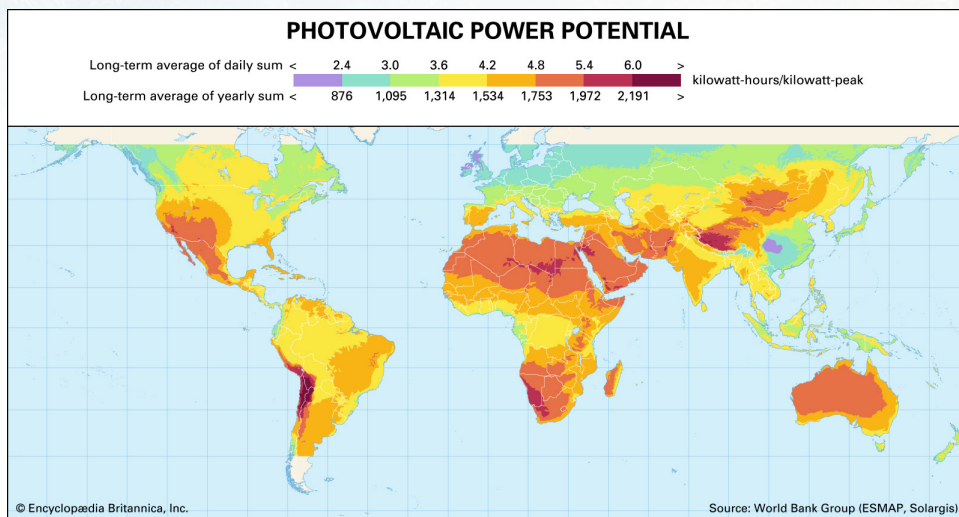
S. Chu, et al. *Nano Futures*, 2017, 1, 022001

## Depends on:

- (1) Solar energy capture/conversion
- (2) Solar energy storage

## Photocatalysis (PC)

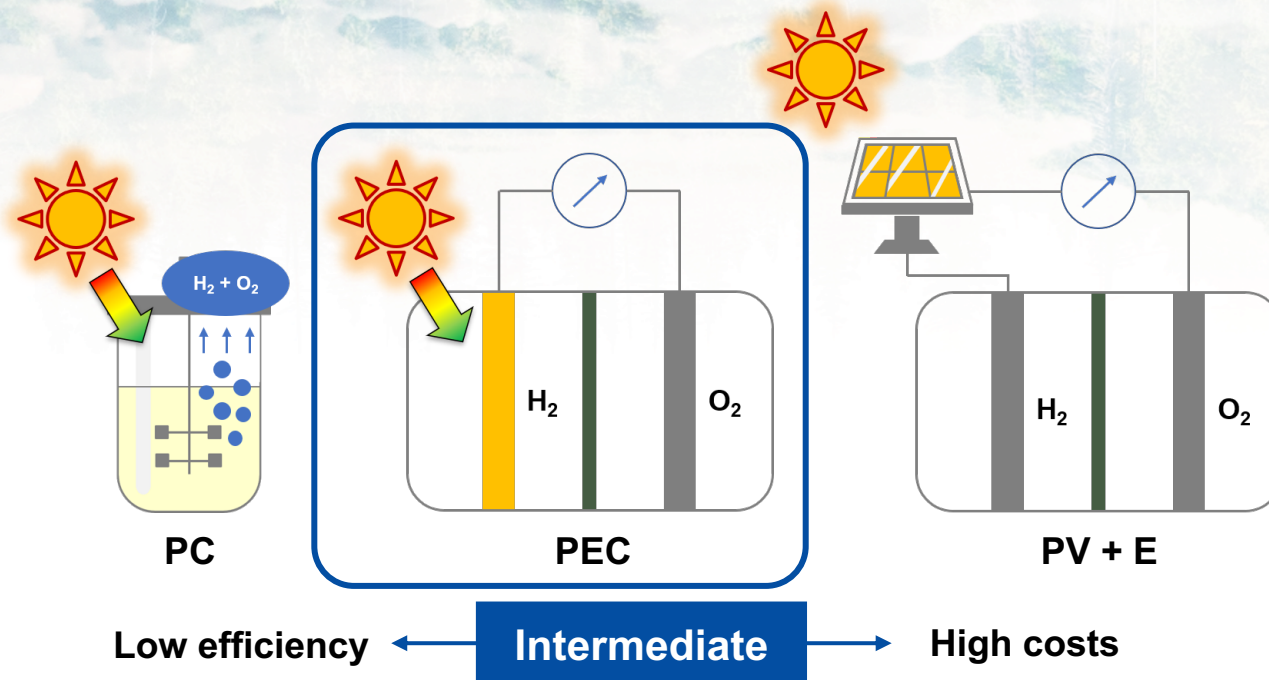
- RedOx catalysis
- Organic transformations / degradation
- **Hydrogen production**



Ashok, S.. "Solar energy". *Encyclopedia Britannica*, 2020

## Depends on:

- (1) Solar energy capture/conversion
- (2) Solar energy storage



S. Chu, *et al.* *Nano Futures*, 2017, 1, 022001

## Photoelectrocatalysis (PEC)

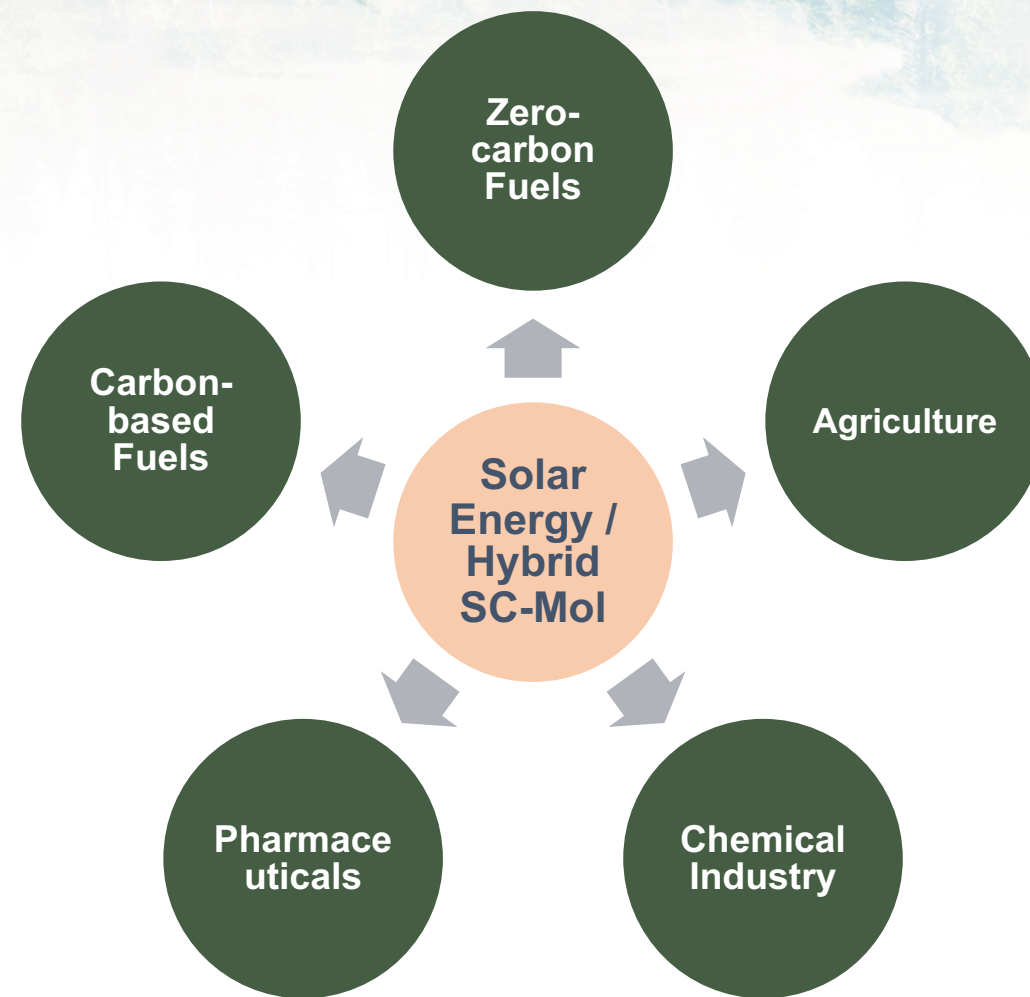
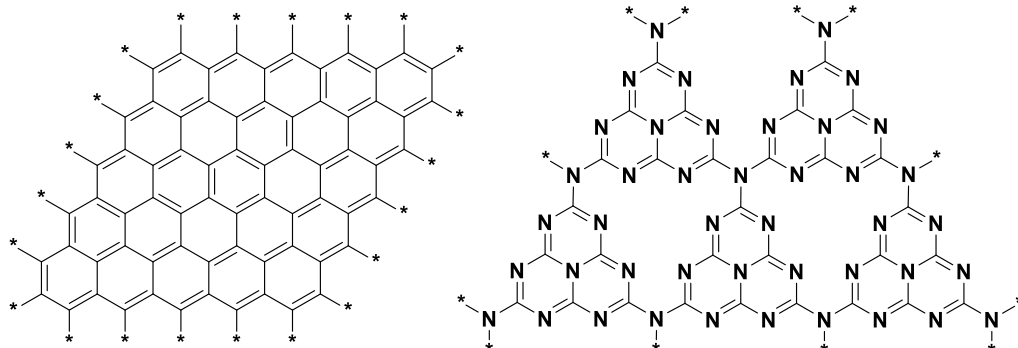
- Artificial photosynthesis, water splitting
- Solar chemicals (methanol, ammonia, etc.)
- **Hydrogen production**

## Objectives:

- Training 15 Early-stage Researchers (ESRs)
- Advancing knowledge on solar chemicals production
- Promoting solar chemicals within stakeholders

## Semiconductors:

- For example; Graphene-type materials as support



# Objectives



Organic waste



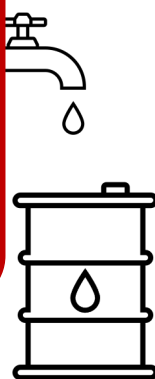
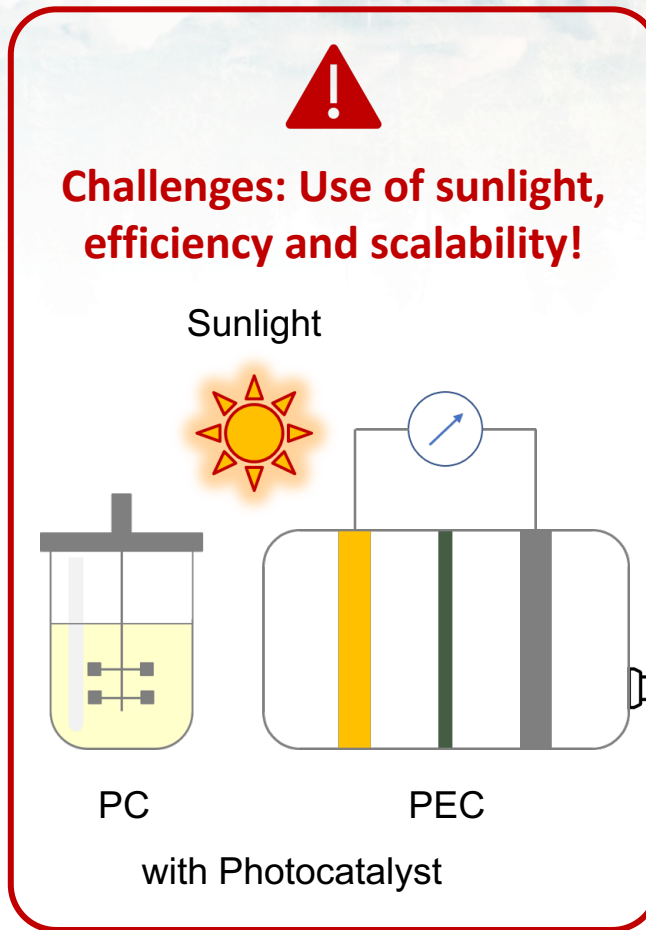
Chemicals



CO<sub>2</sub>



Water



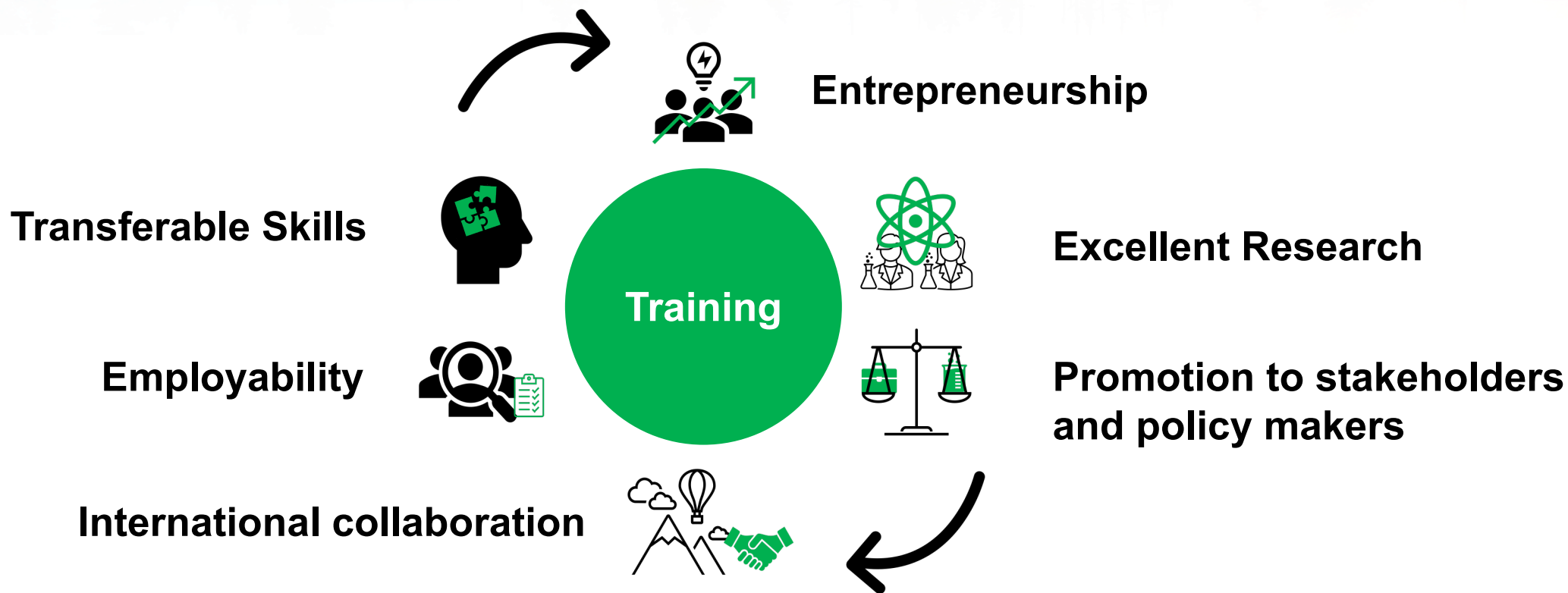
Solar chemicals for APIs and Pharma industry

Energy source (H<sub>2</sub>) and chemical industry

Solar fuels and chemicals

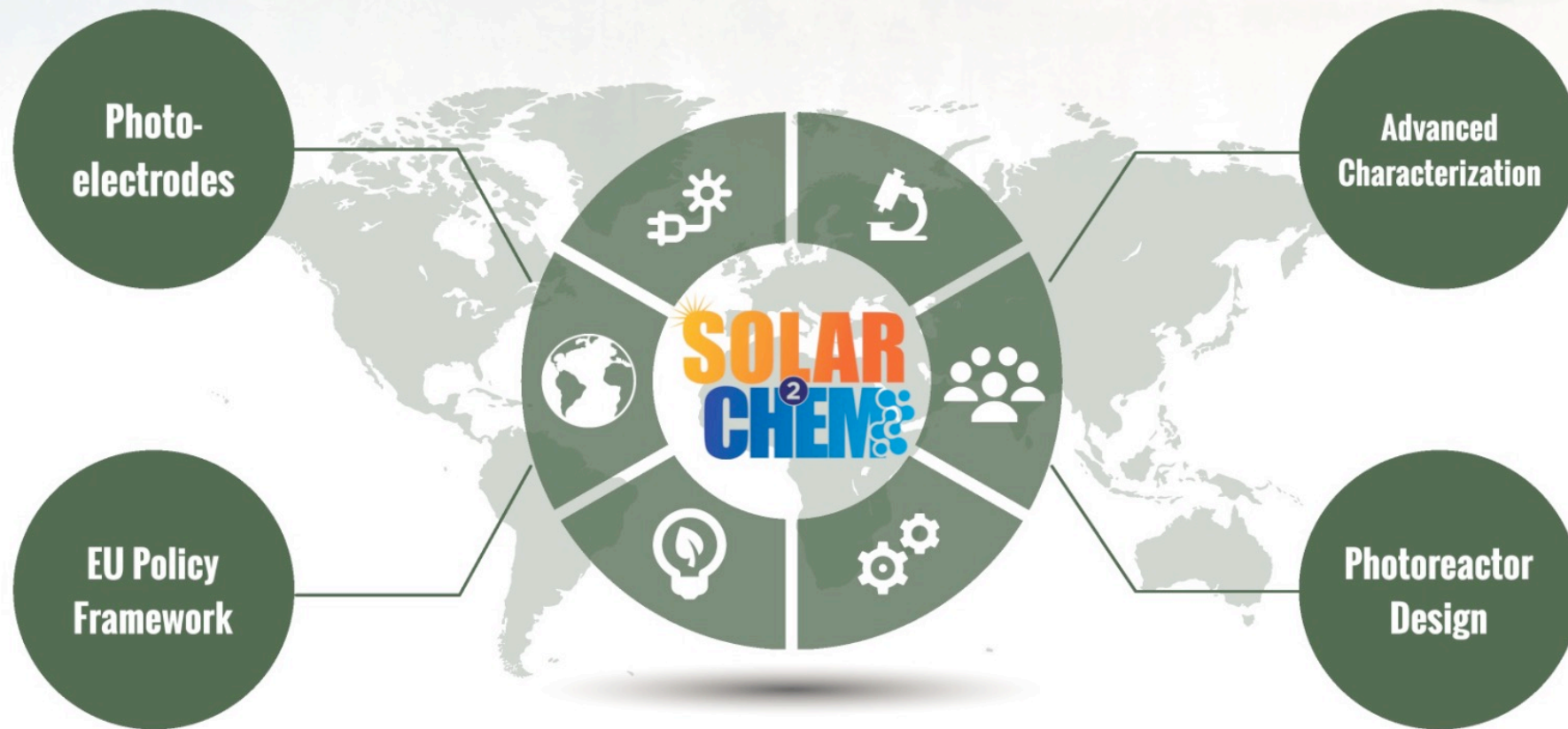
# Vision and Training

**Programme Vision:** to deliver technical, interdisciplinary and transferrable skills training to 15 ESRs throughout all areas of the production of solar chemicals Supply Value Chain

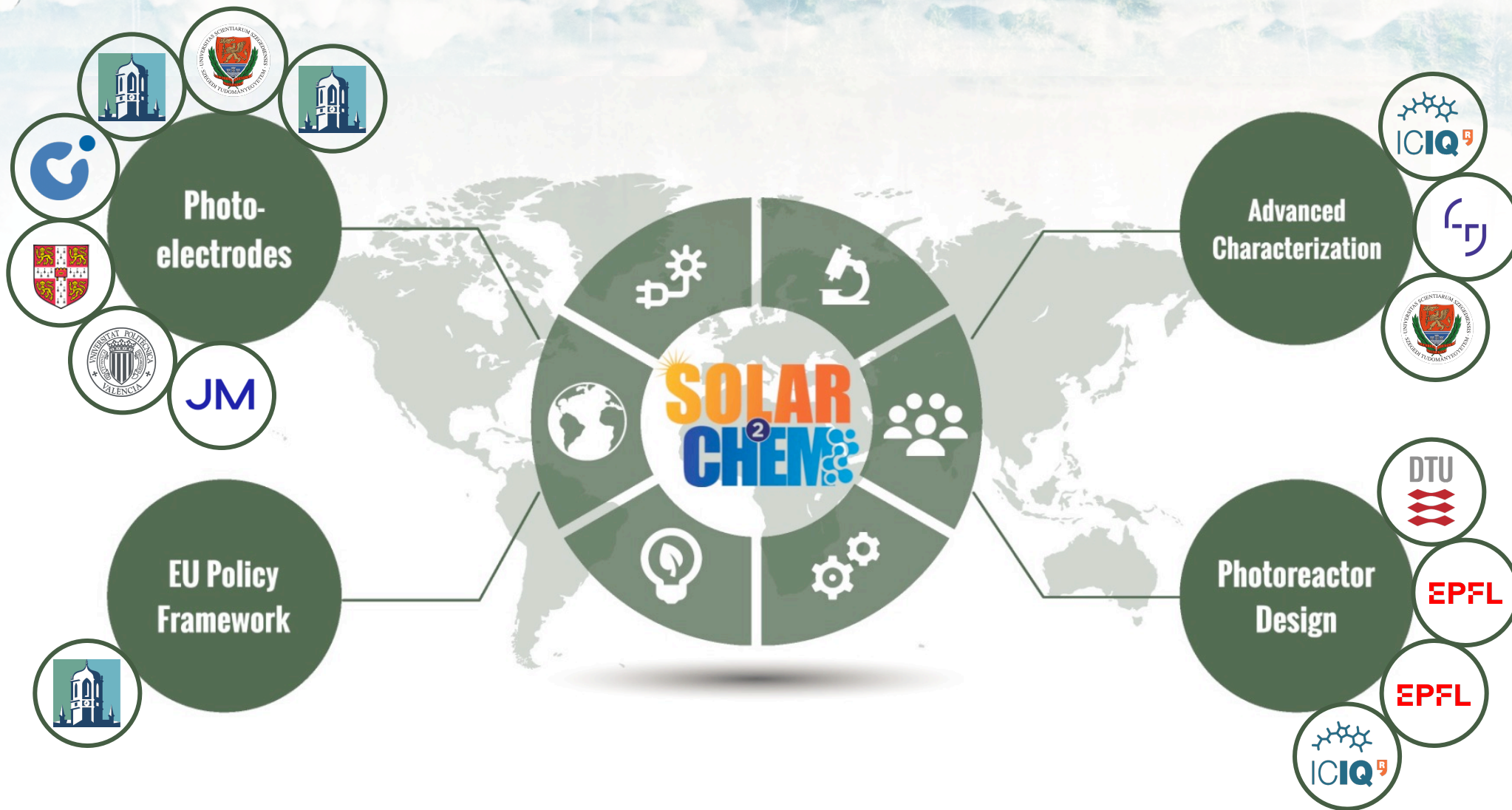




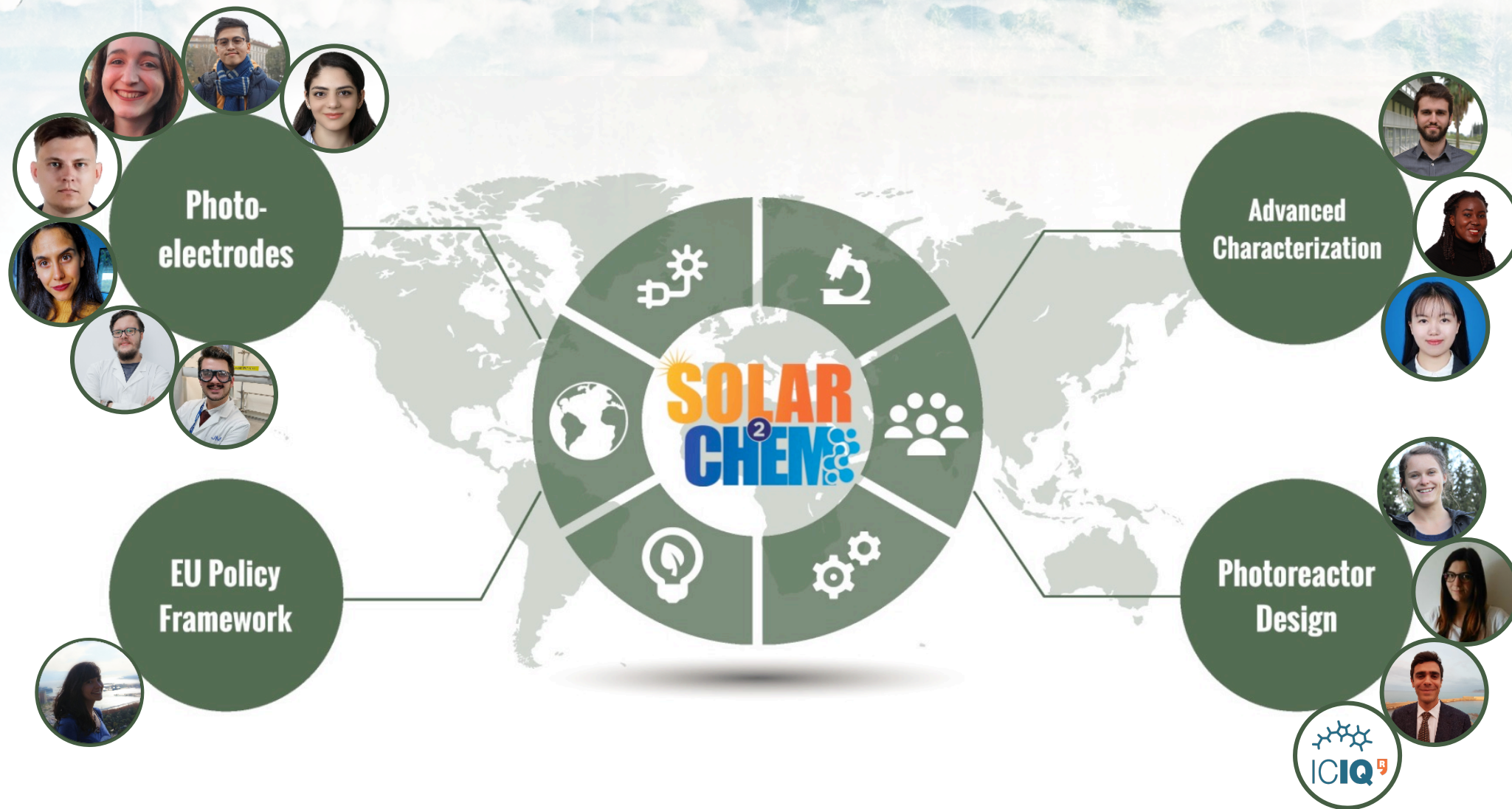
# Project Network



# Project Network



# Project Network





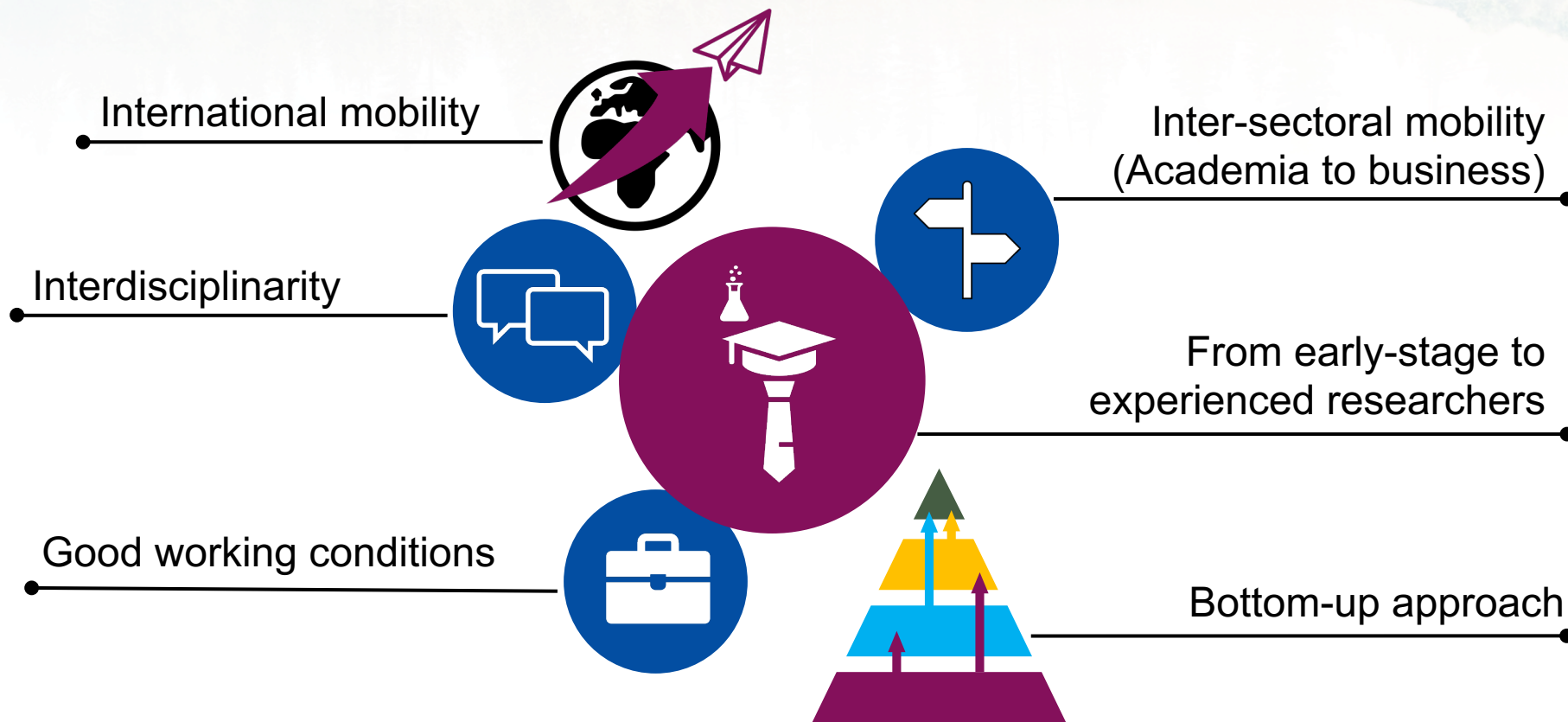
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## Key Features of:

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# Marie Skłodowska-Curie Actions Features



# Marie Skłodowska-Curie Actions

## ITN

Innovative Training Networks



High-quality research training (doctoral level) delivered through international and interdisciplinary networks, industrial doctorates or joint doctorates.

## IF

Individual Fellowships



Opportunities to work on personal research projects (post-doctoral) by moving between countries and possible sectors to acquire new skills.



MARIE CURIE ACTIONS



## RISE

Research and Innovation Staff Exchange

The exchange of staff members involved in research and innovation to develop sustainable collaborative projects.



## COFUND

Co-Funding of Regional, National and International Programmes

Regional, national or international programmes to foster excellence in researchers' training, mobility and career development.

## ITN

Innovative Training Networks



High-quality research training (doctoral level) delivered through international and interdisciplinary networks, industrial doctorates or joint doctorates.

## Who applies?

International networks of research organisations from academic and non-academic sectors.

## Who is funded?

Early stage researchers (less than four years of full-time research experience and no doctoral degree).



## PhotoReAct

*Photocatalysis as a tool for synthetic organic chemistry*

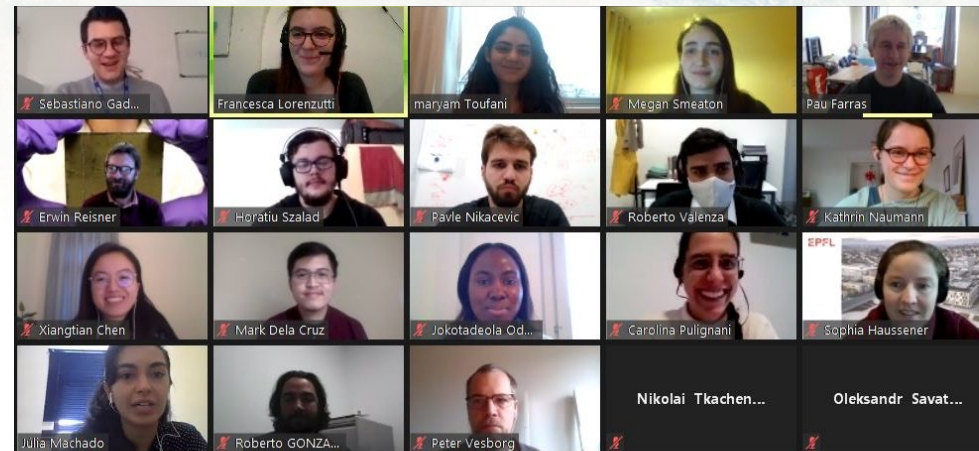


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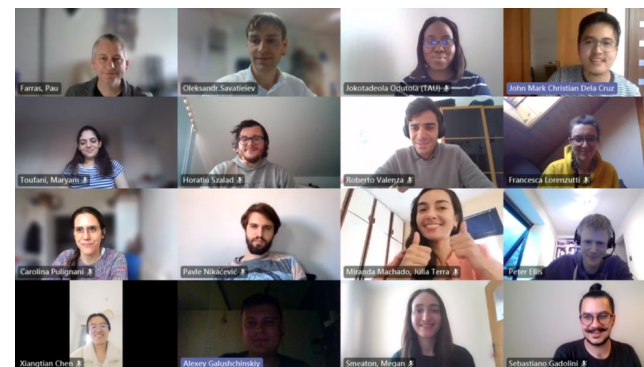
*For the development of an artificial leaf*

# Acknowledgments

ESR 1 – NUIG	<b>Megan Smeaton</b>	ESR 8 – EPFL	<b>Francesca Lorenzutti</b>
ESR 2 – NUIG	<b>Maryam Toufani</b>	ESR 9 – EPFL	<b>Roberto Valenza</b>
ESR 3 – UCAM	<b>Carolina Pulignani</b>	ESR 10 – TAU	<b>Jokotadeola Odutola</b>
ESR 4 – DTU	<b>Kathrin Naumann</b>	ESR 11 – SZTE	<b>Xiangtian Chen</b>
ESR 5 – MPICI	<b>Alexey Galushchinskiy</b>	ESR 12 – SZTE	<b>John Mark Christian Dela Cruz</b>
ESR 6 – UPV	<b>Horatiu Szalad</b>	ESR 13 – JM	<b>Sebastiano Gadolini</b>
ESR 7 – ICIQ	<b>Pavle Nikacevic</b>	ESR 14 - NUIG	<b>Julia Terra Miranda</b>



NUIG	<b>Dr. Pau Farràs</b> <b>Dr. Brendan Flynn</b>	ICIQ	<b>Prof. Núria López</b>
UCAM	<b>Prof. Erwin Reisner</b>	EPFL	<b>Prof. Sophia Haussener</b>
DTU	<b>Prof. Ib Chorkendorff</b> <b>Dr. Peter Vesborg</b>	TAU	<b>Prof. Nikolai Tkachenko</b>
MPICI	<b>Prof. Markus Antonietti</b> <b>Dr. Aleksandr Savateev</b>	SZTE	<b>Prof. Csaba Janáky</b>
UPV	<b>Prof. Hermenegildo Garcia</b>	JM	<b>Dr. Peter Ellis</b> <b>Dr. Crina Corbos</b>



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