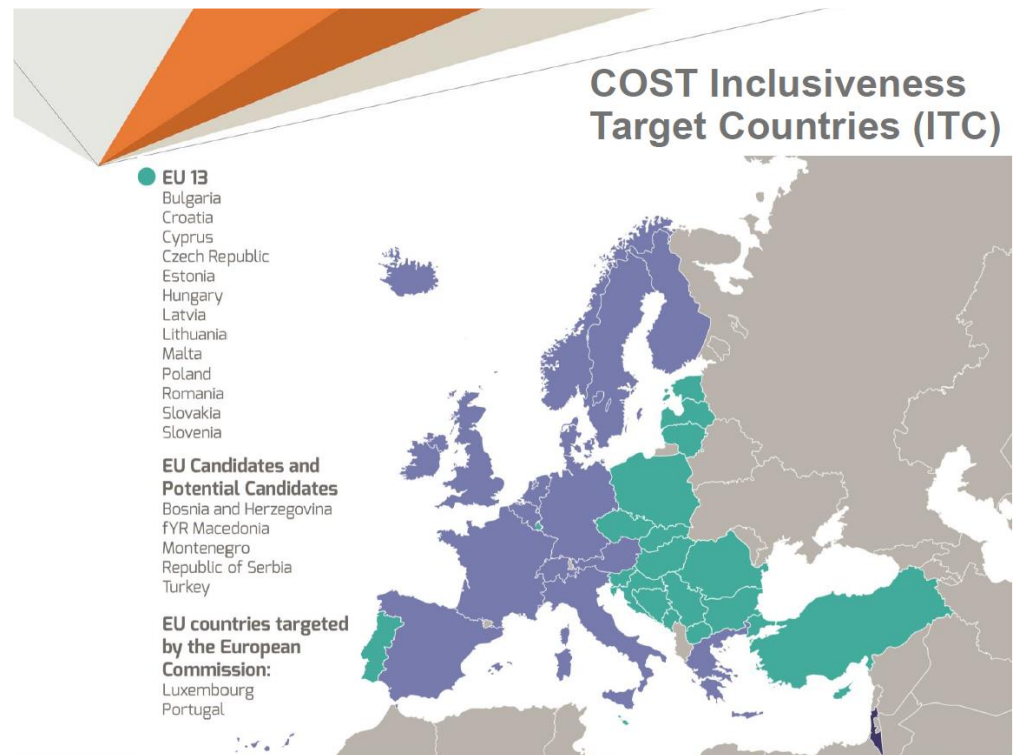




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of the European Union

[www.nanocohybri.eu](http://www.nanocohybri.eu)



*Science is about people*

*Open networks of people  
working in a topic*

*unexpected outcomes from formal/informal discussions can help shaping the Action...*



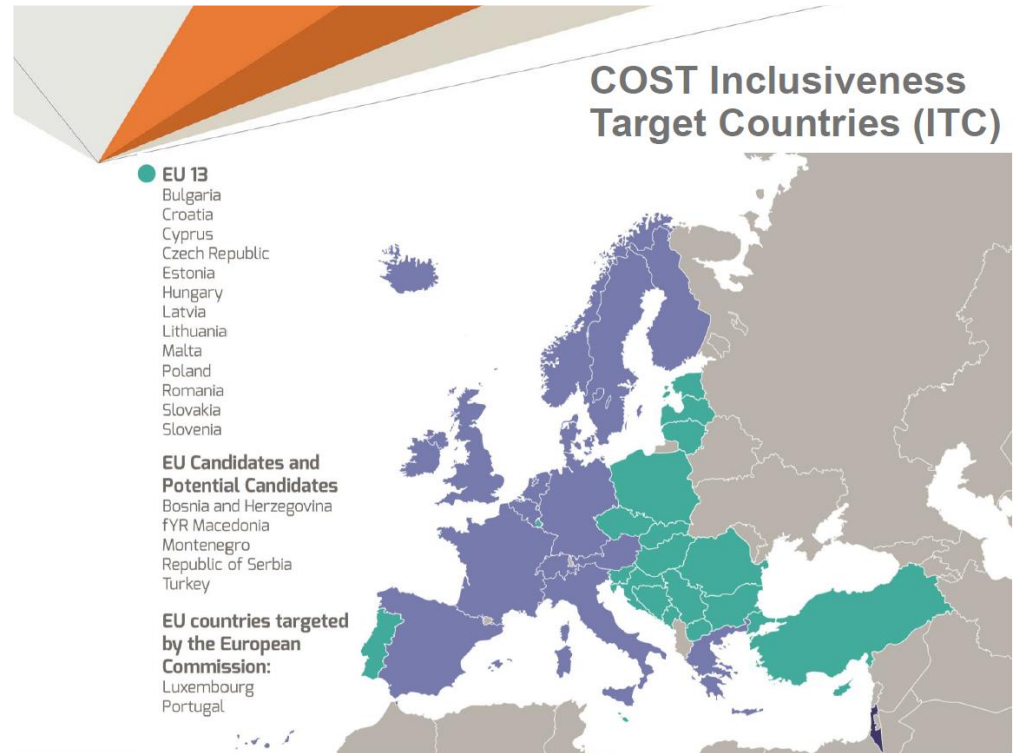
Funded by the Horizon 2020 Framework Programme  
of the European Union

[www.nanocohybri.eu](http://www.nanocohybri.eu)

*36 Member States:* **Austria, Belgium,** Bosnia and Herzegovina, **Bulgaria,** Croatia, Cyprus, **Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary,** Iceland, Ireland, **Italy,** Latvia, Lithuania, Luxembourg, Malta, Montenegro, **The Netherlands,** Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, **United Kingdom,** the former Yugoslav Republic of Macedonia

and

*One cooperating state:* **Israel**



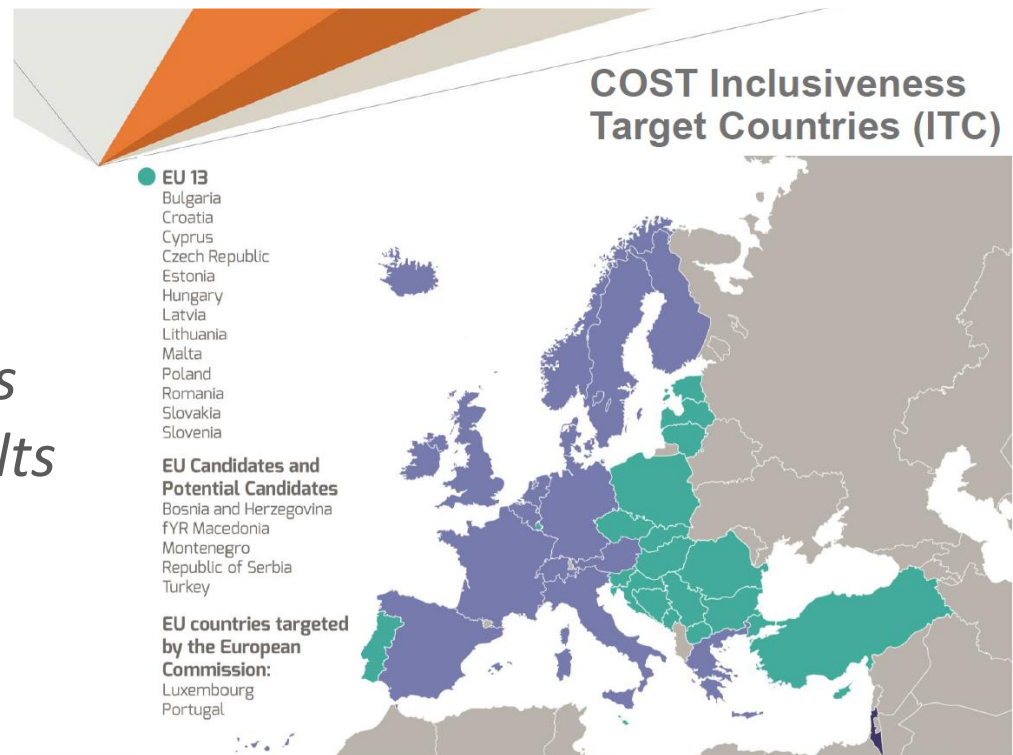


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of the European Union

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## *Cost Action should:*

- *Fulfill scientific objectives*
- *Provide expected deliverables*
- *Disseminate and exploit results*
- *Implement COST objectives*
- *Meet physically and interact*



*unexpected outcomes from formal/informal discussions can help shaping the Action...*

## *Ressources of a Cost Action:*

- *139k€ per year to be spent using a set of instruments:*

- *1 large and 1 small meeting*
- *Many short exchange visits (STSM)*
- *Conference grants (ITC Grant)*
- *Dissemination*
- *Clear management structure*



*unexpected outcomes from formal/informal discussions can help shaping the Action...*





- ✓ Bring together researchers working in Europe in the fields of **fundamental and applied superconductivity** aiming to boost **quantum technologies** to the next step.
- ✓ Triggered by the fundamental knowledge obtained in superconducting systems and the ability to control **magnetic flux, electron charge and spin**.
- ✓ Use the achieved understanding to **control the main superconducting parameters** in devices producing radically new behaviour.



## ***Working Groups definition***

### **WG1.**

**Low-dimensional hybrid  
systems**

### **WG2.**

**Novel devices from hybrid  
interfaces**

### **WG3.**

**Hybrids with nanoscale  
vortex pinning and  
nanofabrication for high  
magnetic fields**

# NANOCOHYBRI Action Working Plan

## WG1. Low-dimensional hybrid systems

Interface Superc with materials 2D  
character

Hybrids Superc/N, F, S

Obtain improved  $T_c$  by charging and/or  
confinement

Understand relationship between N and  
S phases

**M 1.1** Workshop including interface and monolayer superconductivity. **M 1.2** Contribution to midterm report.

**D 1.1.** Interface superconductors with novel properties. **D 1.2.** Behavior of phase, charge and flux in hybrid structures

## WG2. Novel devices from hybrid interfaces

Find hybrid systems for quantum

Junctions and Josephson

New systems to control quantum circuits

Improve photon detectors

Phase sensitive experiments unconv.

**M 2.1.** Workshop on superconducting junctions for detectors and quantum devices. **M 2.2.** Contribution to midt. report

**D 2.1.** Unconventional superconductivity in hybrids and junctions. **D 2.2.** Devices from nanopatterned 2D systems.

## WG3. Hybrids with nanoscale vortex pinning and nanofabrication for high magnetic fields

Vortex pinning nanost landscapes

Vortex motion in nanopatterns

Design electric field patterns

Control vortex pinning

Enhance pinning by nanostructuring

Open new routes for dissipationless tr.

**M 3.1.** Workshop on vortex pinning. **M 3.2.** Contribution to midterm report.

**D 3.1.** Nanoengineering wht improved  $I_c$  and  $H_{c2}$ . **D 3.2.** Devices with improved noise. **D 3.3.** Nanopattern E-field control

## Tribe

(collection of squads with interconnected missions)

establish priorities, allocate budgets, and form interface with other tribes to ensure knowledge/insights are shared

### Tribe 1.

Low-dimensional hybrid systems  
(B. Leridon and S. Bending)



### Tribe 2.

Novel devices from hybrid interfaces  
(A.I. Buzdin and J. Villegas)



### Tribe 3.

Hybrids with nanoscale vortex pinning and nanofabrication for high magnetic fields  
(D. Kölle and A. Silhanek)



#### STSM Manager:

G. Kakazei or P. Samuely, M. Milosevic, A. Crisan

#### Industry collaboration:

T. Puig, W. Lang, R. Wördenweber, J. Robinson

#### Virtual laboratory:

D. Stornaiolo, I. Maggio-Aprile, O. Dobrovolskiy

#### Gender and ECI monitoring:

F. Lombardi, B. Kalisky

#### Science dissemination Manager:

Y. Anahory, A. Palau, I. Guillamón, A. Black-Schaffer, T. Samuely

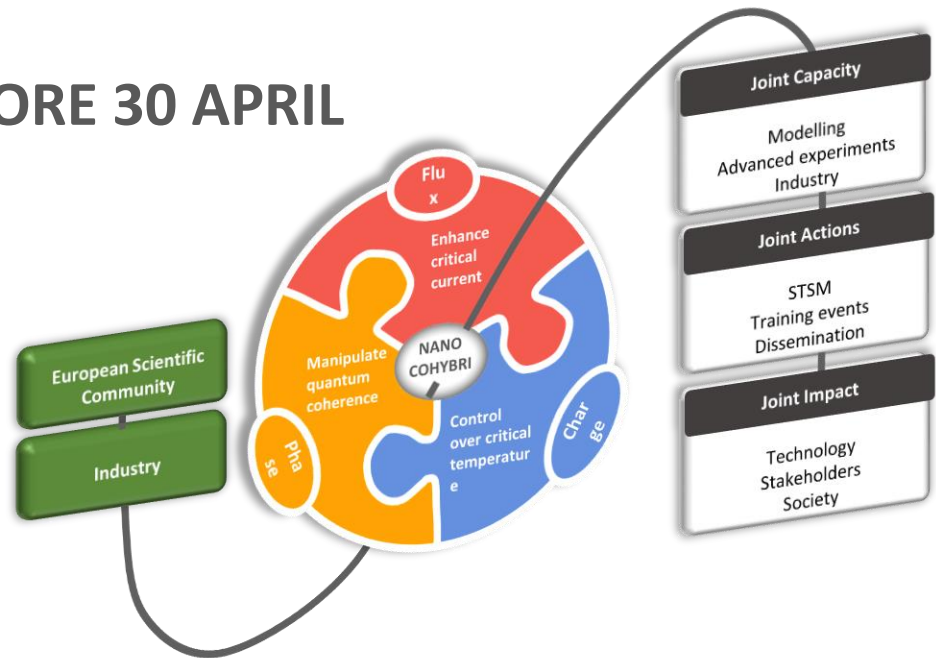
# Work Plan

ONE STSM CAN BE MADE BEFORE 30 APRIL

## Grant Periods

Start of the Action: **18 October 2017**  
(1<sup>st</sup> MC meeting)

1. **GP 1: 1 Nov 2017 – 30 April 2018**
2. **GP 2: 1 May 2018 – 30 April 2019**
3. **GP 3: 1 May 2019 – 30 April 2020**
4. **GP 4: 1 May 2020 – 30 April 2021**
5. **GP 5: 1 May 2021 – 30 Sept 2021**



Year		2017		2018		2019		2020		2021
G. period		1		2		3		4		5
WG1	T1.1									
	T1.2									
WG2	T2.1									
	T2.2									
WG3	T3.1									
	T3.2									
	T3.3									
Management	MC meeting	MC1	MC2			MC3		MC4		MC5
	Reporting					MR				FR
	Schools and conf.			TS				Conf		GW
	Workshops		W1		W2	W3		W4	W5	
	STSM		R1							
	Gender, ECI		R1							

- Training school week of 8th october 2018.
- Workshop start 2019.





School 8<sup>th</sup>-12<sup>th</sup> October, 2018  
Bom Jesus, Braga (Portugal)





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[www.nanocohybri.eu](http://www.nanocohybri.eu)

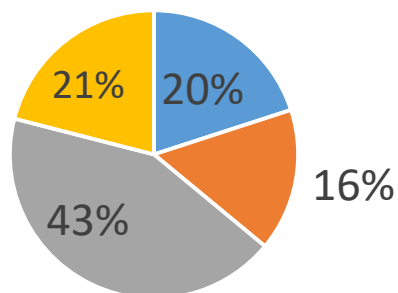
## *Cost policy: Excellence + inclusiveness*

- *Geographical coverage*
- *All career stages, involving Early Career Investigators (ECI) in leading roles and having access to all activities.*
- *Gender balance*



*unexpected outcomes from formal/informal discussions can help shaping the Action...*

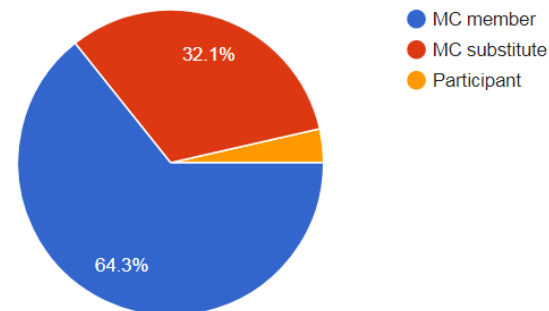
## %Female



■ PhD ■ Postdoc

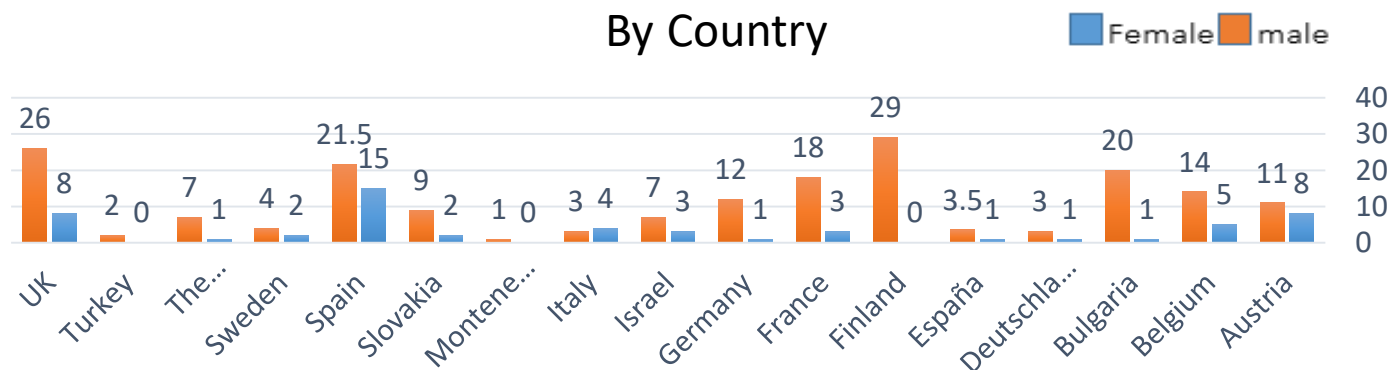
	%Female	Total
PhD	20	100
Postdoc	16	38
Technician	43	15
Staff	21	65
Total	21.6	218
Total with PI	19.1	246

## Participation: 28 responses



● MC member  
● MC substitute  
● Participant

## By Country





# quiero ser científica

Un análisis de los sesgos de género en ciencia



Lunes 19 de febrero, 11h,

Universidad Autónoma de Madrid  
Sala de conferencias, Facultad de Ciencias, módulo 0

**IfiMAC**  
Catalan Women Physics Center

**11Febrero**  
Día Internacional de la mujer  
y la niña en la ciencia

**ift** Instituto de Física Teórica  
UAM-CSIC

**iuem** Instituto universitario de estudios de la MUJER

Unidad de Igualdad de Género

Cincuenta Aniversario  
1968-2018 UAM

Dibujos cortesía de Candela y Alba Mozo, Diana y Helena Bueno

11h00 - Inauguración del acto:  
**Rafael Garesse**

Rector de la UAM

11h10 - Intervenciones:

Creación de la vocación científica: estereotipos de género en la educación preuniversitaria.

**Eulalia Pérez Sedeño**

Profesora de investigación,  
Instituto de Filosofía, CSIC

Desigualdad de género en la carrera científica profesional:  
factores generales y sesgos específicos.

**Pilar López Sancho**

Profesora de Investigación,  
Instituto de Ciencia de Materiales, CSIC

Participación de científicas en toma de decisiones.

**María Blasco Marhuenda**

Directora del Centro Nacional  
de Investigaciones Oncológicas

Políticas institucionales relacionadas con la desigualdad de género en ciencia.

**Carmen Vela Olmo**

Secretaria de Estado de Investigación,  
Desarrollo e Innovación, MINECO

Moderadora:

**Marina Rodríguez Baras**

Doctoranda del Departamento de Física Teórica, UAM

12h00 - Mesa redonda

12h45 - Clausura del acto

Al final se ofrecerá un vino español

# Implementation:

- **Networking tools**
- **COST Administrative Rules and Guidelines**



# COST Networking Tools





# Meetings



## Reimbursement rules

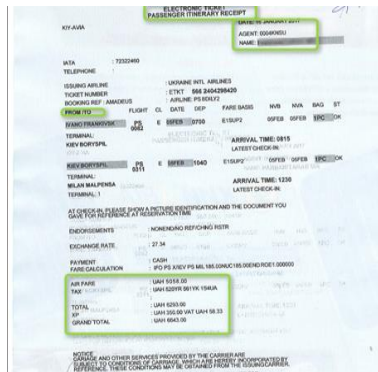
- Accept or Decline the invitation on e-cost
- Sign attendance list
- Submit your claim online with relevant supporting documents
- **Claim Submission Deadline: 30 days**

# Long distance travel = cross border travel

## Flight expenses:

- Economy class only
- Max EUR 1200

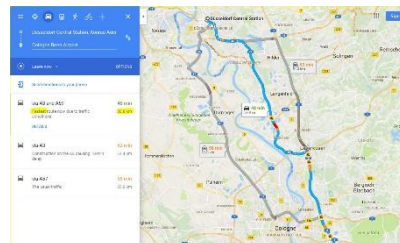
**You must submit an invoice and full itinerary**



## Car travel expenses:

- Maximum distance 2000 km at
  - ✓ EUR 0.20 per km
  - ✓ EUR 0.30 per km with 2 or more eligible participants

**Proof of distance**  
(i.e Google Maps)



## Trains, bus and ferry expenses:

- First, second and business class

**You must submit invoice / receipts**



# Local Transport – travel within 1 country

Public transport expenses  
(shuttle, bus, train, metro,  
tram and ferry):

- $\leq$  EUR 25  $\rightarrow$  No receipts required
- $>$  EUR 25  $\rightarrow$  All receipts required



Taxi expenses:

- No other means of public transport
- To/From airport between 10pm and 7am

AND

Up to EUR 80 in total with receipts



Car travel

- Proof of distance

Other eligible expenses

- Luggage fees
- Parking expenses
- Visa fees



# Accommodation Expenses

- Flat rate: EUR 120 per night
- No receipts
- Maximum nights = actual number of meeting days attended + 1 night before the event
- MC decision: lower flat rate
- Same flat rate



# Meals expenses

- Flat rate: EUR 20 for lunch and dinner
- No receipts
- Based on travel
- Offered meals by Local  
Organiser Support (LOS)
- MC decision: lower flat rate
- Same flat rate



## Meetings – non-eligible expenses

- Registration, lecture fees and honoraria
- Insurance (life, medical, health, luggage, etc.)
- Fuel, road tolls and car rental
- Charges for a rebooked travel ticket
- Expenses associated with obtaining visas



# How to submit your Online Travel Reimbursement Request



e-COST

## Step 1/5 Accept or Decline

### Invitation to COST Association Event

Dear Dr

You are invited to the following COST event. Please indicate below if you wish to participate.

#### Training School Details

Training School ID ECOST-TRAINING\_SCHOOL-TD1409-010517-087354

Title ICMS Modelling Camp

Start Date 2017/05/01

End Date 2017/05/04

Location ICMS, Edinburgh, United Kingdom

Step 1/5

Invitation

Please advise us if you intend to come to the event.

Accept

Decline

## Step 2/5 Reimbursement?

### Invitation to COST Associaton Event

Mr Ertuğrul Altuntaş

#### Meeting Details

Meeting ID

Title Building with Bio-Based Materials: Best Practice and Performance Specification

Start Date 2017/09/06

End Date 2017/09/07

Location Lisboa, Zagreb, Croatia

Step 1/5 Invitation

☒ Accepted

Decline

Step 2/5 Reimbursement

☒ Yes

No

If you decided to NOT submit a claim, please click the 'No' button above.

To be able to electronically sign documents, your browser needs to be activated for strong authentication. This is a one time operation for every browser used. If later on you use a different browser, you will be prompted to activate that browser before it can be used to sign documents electronically.

Please click the button below to proceed. You will receive an e-mail containing an activation code which you will be prompted to enter in the next screen.

Proceed with the activation

Note: Additional information of the Strong Authentication is available [here](#).



## Step 3/5 Fill in your travel expenses

### Travel information and expenses

**Please note:**

- Local organiser has paid 1 meal(s) for this meeting, which has/have been automatically deducted from the number of eligible meals that you can claim.

Please carefully read the [Travel Reimbursement Request \(TRR\) Rules](#) before you encode your expenses.

#### Travel dates (Door to Door)

Travel Start      Date    2016-04-13          Time    10:00 - 10:59    ▾

Travel End      Date    2016-04-15          Time    22:00 - 22:59    ▾

#### Meeting Attendance

Please indicate by clicking on the check box below which days you attended the COST event as confirmed by you signing the attendance list.

14 Apr 16



# Upload receipts

## Supporting Documents

Download ALL

Attached Document 1

flight tickets

Download

Attached Document 2

taxi receipt

Download

Attached Document 3

local car travel itinerary

Download

Attached Document 4

flight invoice

Download

Attached Document 5

parking invoice

Download

Current Total

## Step 4/5 Select Bank account

Bank Account

JOHN CH. SMITH / BE000000000000002

Add A New Account

Select the Bank Account you would like to get reimbursed on above. To select a non-listed account , click "Add a new account".

After selecting your bank account, you will be able to preview a draft version of your TRR (Travel Reimbursement Request) Form to verify the details.

Once you have selected your bank account you will be able to review your TRR and submit your claim.

Save

## Step 5/5 Submission

### Submission

☒ I declare that the above expenses are not being reimbursed from any other source.

*The COST Association reserves the right to correct this document after signature by the participant to comply with COST Rules.*

Click to submit your claim electronically. You will be prompted to enter your e-COST password to verify your identity.

[Submit e-Claim](#)

Note: Additional information of the Strong Authentication is available [here](#).

Dr John Smith

*Your online reimbursement request has been successfully submitted. You may download the Travel Reimbursement Request(TRR) in pdf format for personal filing. No further action is required from your side.*

[Download](#)  

### Meeting Details

Meeting ID	ECOST-MEETING -140416-072346
Title	Management Committee meeting
Start Date	2016/04/14
End Date	2016/04/14
Location	COST Association, 149 Avenue Louise, B-1050, 15th Floor, Brussels, Belgium



## Online Submission vs Paper Travel Reimbursement Request (TRR)

- Secure
- Faster
- Paperless
- Original documents are the responsibility of the participant (!)



The background of the slide features a grayscale photograph of two scientists in a laboratory. A woman on the left is wearing safety goggles and a lab coat, holding a beaker. A man on the right is wearing a hairnet and a lab coat, pointing towards the camera with a smile. In the center, there is a piece of laboratory equipment, possibly a spectrometer or a similar analytical instrument. The overall tone is professional and scientific.

# Short Term Scientific Mission (STSM)

# STSMs – Financial Support

- Duration:
  - minimum 5 days
  - maximum 90 days

STSM activities: within 1 Grant Period

- **Selection of Grantees:** responsibility of the MC
- **Financial support:** fixed contribution (grant= no receipts)
  - up to EUR 160 per day
  - max EUR 2500 for up to 90 days



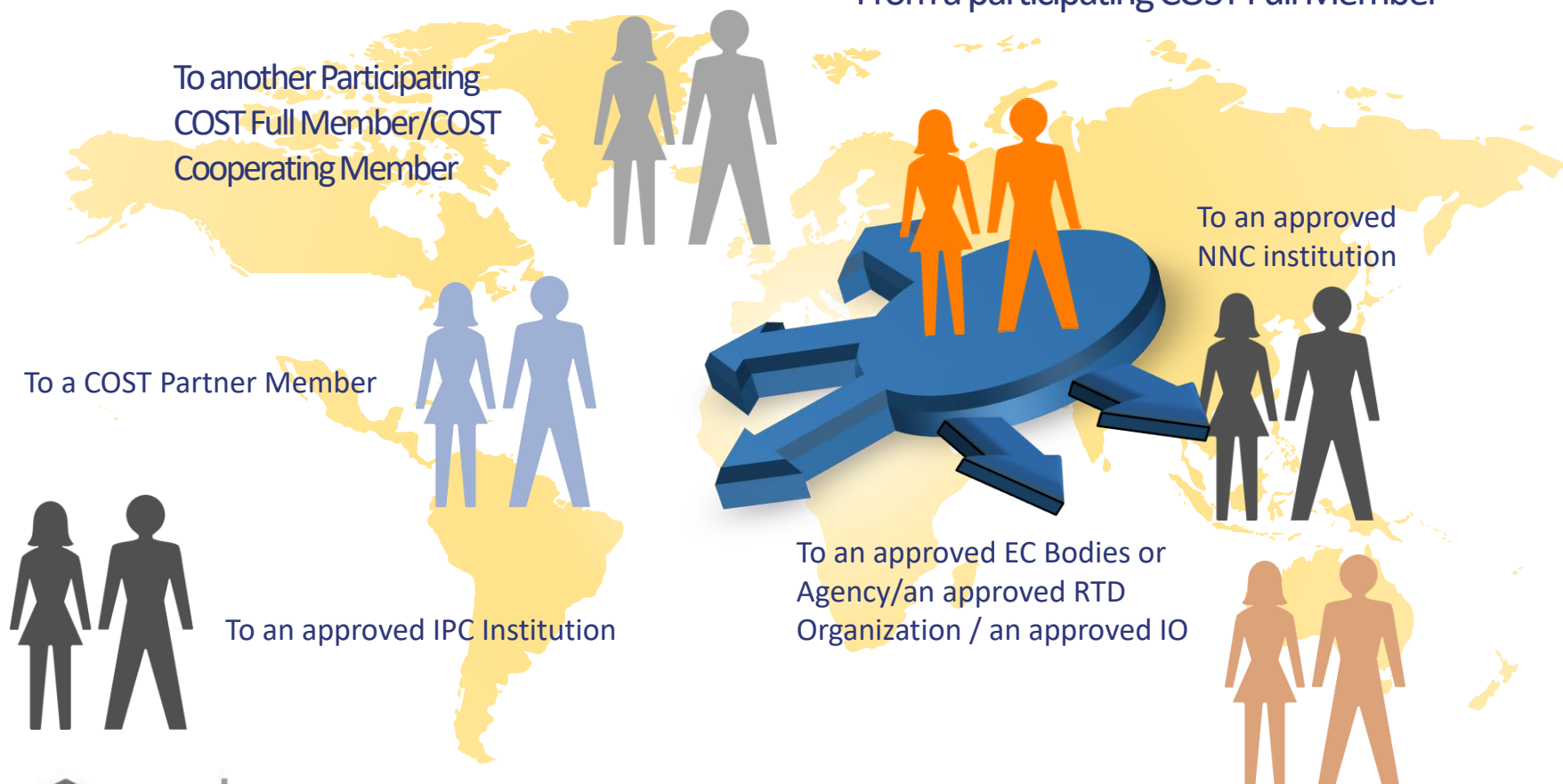
## STSM – Specific Provisions

- **Early Career Investigators (PhD + 8 years)**
  - time frame of between 91 days and 180 days
  - maximum amount of € 3500
- **Researchers from Participating Inclusiveness Target Country (ITC) :**

50% of the grant upon completion of the 1st day of the STSM

# STSM - From where to where?

From a participating COST Full Member



# ITC Conference Grants

Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic,  
Estonia, FYR Macedonia, Hungary, Latvia, Lithuania, Luxembourg,  
Malta, Montenegro, Poland, Portugal, Romania, Serbia, Slovakia,  
Slovenia, Turkey



## Conference Grants – Eligibility

- PhD students and Early Career Investigators (ECI) with affiliation in a Participating Inclusiveness Target Country (ITC)
- Oral/poster presentation
- Listed in the official programme
- Pre-Approval by the MC



## Conference Grants – Financial Support

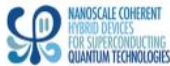
- Maximum EUR 160 per day for accommodation and meals
- Maximum EUR 2 500 (including conference fees up to EUR 500)
- Scientific report approved before payment



A conceptual image featuring a hand reaching out from the left side. Overlaid on the hand and the background is a network of white dots connected by thin lines, resembling a molecular or digital structure. The background is a blurred image of a modern building with large windows. In the top left corner, there are geometric shapes in orange and grey.


# Dissemination

## Webpage




NANOSCALE COHERENT  
HYBRID DEVICES  
FOR SUPERCONDUCTING  
QUANTUM TECHNOLOGIES

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[The Project](#)
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[Opportunities](#)
[News](#)
[Virtual Institute](#)
[Contact](#)



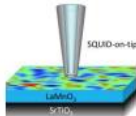
NANOSCALE COHERENT  
HYBRID DEVICES  
FOR SUPERCONDUCTING  
QUANTUM TECHNOLOGIES



Kick-off meeting Brussels




Recent News and Events



SQUID-on-tip


STM of Yonathan Anahory at the Universidad Autonoma de Madrid (Spain)

[Read More](#)




Women and girls in science day 2018

[Read More](#)




STM of Prof Oleksandr Dobrovolskiy at the Universidade do Porto (Portugal)

[Read More](#)



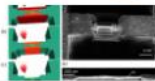
Publications



Quantitative magneto-optical investigation of superconductor/ferromagnet hybrid structures

28th February 2018

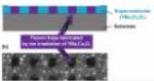
[read more](#)



Vortex Lattice Instabilities in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Nanowires

23th February 2018

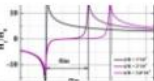
[read more](#)



Unconventional critical state in  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  thin films with a vortex-pin lattice fabricated by masked  $\text{He}^+$  ion beam irradiation

16th February 2018


[read more](#)




Magnetic flux penetration into finite length thin-walled niobium cylinders

1st February 2018

[read more](#)




cost  
EUROPEAN COOPERATION  
IN SCIENCE & TECHNOLOGY




News

[Read Publications](#) | [News](#) | and other practical info



Contact

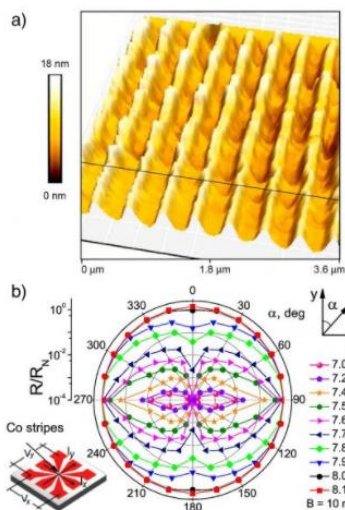
Do you want to join the network? Contact us to get more information. Get in touch →



Events

[Training Schools](#) | [STM General Information](#) | [Virtual Institute](#) | [Conference Grants](#)

## Publications

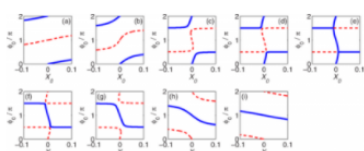


### Focused electron beam induced deposition meets materials science

24th January 2018 Publications

Authors: M.Huth, F.Porrati and O.V.Dobrovolskiy  
Microelectronic Engineering Volumes 185–186, 5  
January 2018, Pages 9-28 Focused electron beam  
induced deposition (FEBID) is a direct-write method  
for...

[Read more](#)



### Anomalous Josephson effect controlled by an Abrikosov vortex

24th January 2018 Publications

Authors: S. Mironov, E. Goldobin, D. Koelle, R. Kleiner,  
Ph. Tamarat, B. Lounis, and A. Buzdin Phys. Rev. B Vol.  
96, Iss. 21...

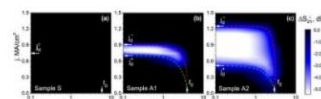
[Read more](#)

### Disentangling vortex pinning landscape in chemical solution deposition superconducting $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ films and nanocomposites

31st January 2018 All, Publications

Authors: Anna Palau, Ferran Valles, Victor Rouco, Mariona Coll Bau, Ziliang Li, Cornelia Pop, Bernat Mundet, Jaume Gazquez, Roger Guzman, Joffre Gutierrez, Xavier Obradors and Teresa Puig Superconductor Science and Technology in press In-field angular...

[Read more](#)

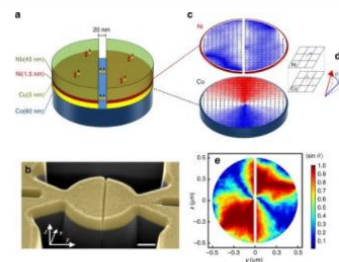


### Mobile fluxons as coherent probes of periodic pinning in superconductors

31st January 2018 All, Publications

Authors: Oleksandr V. Dobrovolskiy, Michael Huth, Valerij A. Shklovskij and Ruslan V. Vovk  
Scientific Reports volume 7,  
Article number: 13740(2017) The interaction of  
(quasi)particles with a periodic potential arises in  
various...

[Read more](#)



### Controlling supercurrents and their spatial distribution in ferromagnets

1st February 2018 All, Publications

Authors: Kaveh Lahabi, Morten Amundsen, Jabir Ali Ouassou, Ewout Beukers, Menno Pleijster, Jacob Linder, Paul Alkemade and Jan Aarts Nature Communications volume 8,  
Article number: 2056 (2017) Spin-triplet Cooper pairs  
induced in ferromagnets form the centrepiece...

[Read more](#)

Social media



**NanocoHybri** @nanocoHybri · 4h

The first conference "Coherent superconducting hybrids and related materials" of our @nanocoHybri #COST Action will take place next week in Les Arcs 1800 (France). A great opportunity for stimulating discussions and networking. More information on [nanocoHybri.eu](http://nanocoHybri.eu)



@nanocoHybri

# QUESTIONS?

[irene.gonzalezmartin@uam.es](mailto:irene.gonzalezmartin@uam.es)

Skype: irene.gonzalez.martin

Phone: 0034 658 20 25 46

## Thanks for your attention!

**COST Association Vademecum**

<http://www.cost.eu/participate>

# Important Links

**COST Association Vademecum**

<http://www.cost.eu/participate>

**COST Website**

<http://www.cost.eu/>

**e-COST**

<https://e-services.cost.eu/>

**COST strategy and visual identity: COST brand book**

<http://www.cost.eu/visualidentity>

**Guidelines for Dissemination of COST Action results:**

[http://www.cost.eu/Action\\_dissemination\\_guidelines](http://www.cost.eu/Action_dissemination_guidelines)

