

# SHORT TERM SCIENTIFIC MISSION (STSM)

COST **CM1403** - THE EUROPEAN UPCONVERSION NETWORK: FROM THE DESIGN OF PHOTON-UPCONVERTING NANOMATERIALS TO (BIOMEDICAL) APPLICATIONS

## **Role of STSM Coordinator:**

- ensuring the evaluation of the STSM applications,
- the selection of successful candidates,
- the approval of the scientific report of the STSM applicants

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# OBJECTIVES OF STSM

Short Term Scientific Missions (STSM) are aimed at

- supporting individual mobility
- strengthening the existing networks
- fostering collaborations

by allowing scientists to

- visit an institution or laboratory in another Participating COST Country or an approved NNC institution or an approved IPC institution
- to learn a new technique or to take measurements using instruments and/or methods not available in their own institution/laboratory

The aim of this grant is to support the costs associated with the exchange visit. This grant will not necessarily cover all expenses; it is intended only as a contribution to the travel and subsistence costs of the participant.

# INTRODUCTION TO STSM

## **Applicants:**

- postgraduate student or postdoctoral fellow or employer of an institution of a COST Country/Action participant.
- Must be employed by or officially affiliated to an institution or legal entity. This institution is considered as the Home institution. Institutions may be public or private entities.
- Early Stage Researchers (ESR, less than PhD + 8 years) - the Management Committee may approve an extension to a duration beyond 3 months, but not more than 6 months in total
- During an STSM neither the MC, nor the COST Office nor the Grant Holder may be considered as an employer. Grantees must make their own arrangements for all health, social, personal security and pension matters.
- STSM grantees must make their own arrangements for all health, social, personal security and pension matters.

## **Duration:**

- min. one week (5 working days) up to
- max. 3 months
- In exceptional circumstances they may extend beyond 91 days, but a strong rationale will need to be provided for this

**Financial Support:** The grant covers only travel and subsistence (no research).

- 60-90 EUR/day for daily allowance (160 EUR/day max),
- 300 EUR for travel expenses (500 EUR max, the total must not exceed 2500 EUR up to three months)
- Variations may apply depending on the cost of living in host country

# INTRODUCTION TO STSM

## **HOME AND HOST INSTITUTION**

A STSM may only be approved:

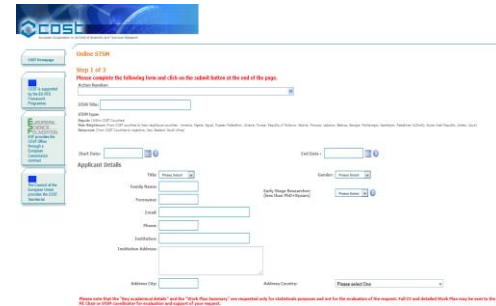
- from a home institution in a COST participating country to a host institution in another COST participating country or to a formally approved host institution in a non-COST country.
- from a formally approved home institution in a Near Neighbour country to a host institution in a COST participating country.

The Home and Host institution should be located in different countries. STSMs within the same country are not allowed.

The agreement on IP developed in the course of joined studies must be signed by the Home and Host institutions directly without involving MC.

# INTRODUCTION TO STSM

**Registration:** Online registration tool (<https://e-services.cost.eu/stsm>), applications may be submitted according to the schedules stipulated by the MC, the application together with the MC approval has to be sent to the Grantholder (at least 4 weeks before the STSM starts) - please select Action Number COST **CM1403**)

The image shows a screenshot of the STSM registration tool interface. At the top, there is a header with the 'ECSSE' logo and the text 'Welcome to STSM'. Below this, there is a navigation menu on the left side. The main content area displays a form titled 'Step 1 of 3' with the instruction 'Please complete the following form and click on the submit button at the end of the page.' The form includes several input fields: 'Action Number' (with a dropdown menu), 'Title' (text input), 'Start Date' (calendar icon), 'End Date' (calendar icon), 'Applicant Details' (with a 'View' button), 'Personal Data' (with 'Name', 'Last', 'Phone', and 'Email' fields), 'Institution Address' (with 'Institution Name', 'Address', 'City', and 'Country' fields), and 'Contact Details' (with 'Email' and 'Phone' fields). There are also 'Save' and 'Submit' buttons. At the bottom, there is a small red text disclaimer.

**Assessment:** Selection through the STSM coordinator or committee (assessment panel) nominated by MC. The STSM coordinator will make the scientific and budgetary assessment and take the final decision.

**Approval:** The STSM coordinator is responsible for circulating the application for decision in the assessment panel and has to inform the Grantholder about the decision. The Grantholder informs the applicant about the outcome of the assessment and will arrange all necessary formalities. The decisions and assessments regarding all STSM applications shall be reported to the next MC meeting in the minutes of the meetings.

# BEFORE STSM

In order to receive a STSM grant, the applicant must:

- Complete the online application form (see <https://e-services.cost.eu/stsm>)
- Send the completed file as e-mail attachment together with the necessary supporting documents (in single PDF file)
  1. Applicant CV (max 3 pages) + list of publications,
  2. full work plan (1-2 pages) - When preparing the work plan the applicants should explain the necessity of their work in accordance with the Action's MoU, objectives of COST, WPs (e.g. WP1.3 and not just WP1-see slide #12) and expected outcome
  3. letter of support from the home institution,
  4. written agreement with hosting institution etc. (see template in appendix1)

to the the STSM coordinator ([A.Bednarkiewicz@int.pan.wroc.pl](mailto:A.Bednarkiewicz@int.pan.wroc.pl)) for evaluation purposes as well as to STSM host institution (hosting group). The PDF application file need to be named as follows: **Application\_COSTSTSM-CM1403\_LastNameFirstName**

## STSM's Timeline :

- Preliminary information should be send before end of each year in order to estimate number of STSM and the associated costs for the coming year
- The detailed proposal (as described in BEFORE and AFTER slide) minimum 6 weeks before actual start of STMS
- Maximum 2 weeks for proposal assesment

## Assessment and Grant Letter:

- The MC (STSM Coordinator or Committee) will perform the scientific and budgetary assessment of the applications considering the Action objectives and define an acceptable funding level;
- Once approved by the MC (STSM Coordinator or Committee), the Grant Holder (Univ.Regensburg) needs to receive the approval and then send a grant letter generated from e-COST to the applicant. More information is provided below.

# SELECTION CRITERIA FOR STSM (1/2)

## GENERAL INFORMATION

The decision on whether the application for a STSM will be supported or not, will be made according to the following criteria:

1. STSM application must contribute to WPs' objectives of the Action. Please write explicitly, which WPs of CM1403 Action will be addressed
2. The application serves the goal of fostering collaboration in the field of UCNPs : materials, instrumentation, biotoxicity etc.) in particular, establishing new scientific contacts. Preference will be given to new cooperations within the European cooperation network on upconverting nanomaterials.
3. The STSM serves for the exchange of know-how, meaning that researchers either exchange expertise due to the planned scientific visit, get practical skills of using unique equipment not available in their home institution or learn new theoretical methods or experimental approaches.
4. The scientific quality of the proposed STSM is high, its timeliness is justified, and the work plan for its realization is well founded.
5. Mainly early stage researchers (graduate students and young postdocs) will be supported although senior scientists can also get support. STSMs of senior scientists that include teaching young scientists in other institutions will also be encouraged.
6. The application should be financially justified meaning that the estimate of expenses is reasonable. Obtaining support from other sources will be evaluated positively.
7. When other conditions are equal preference will be given to scientists from institutions, which did not get support from COST before.
8. Every care will be taken to avoid any bias on the grounds of gender, age or nationality.

# SELECTION CRITERIA FOR STSM (2/2)

## GENERAL INFORMATION

1. In the work plan the scientific problem of the STSM should be introduced. The applicants should describe their background related to this problem as well as the tasks, expected results and outcome of the STSM. When preparing the work plan the applicants should explain the necessity of their work in accordance with the Selection criteria.
2. Both parties, the visiting scientist and the group leader from the host institute, should prepare the application together and should therefore agree about the work plan, all terms and expenses.
3. Early Stage Researchers (less than PhD + 8 years) will be prioritized
4. As a general rule STSM are favored when a clear multidisciplinary proposal is presented.



# SELECTION OF STSM

The STSM committee (STSM coordinator and Grant Chair / vice-Chair) will peer review the application, soliciting opinions when necessary.

The following selection criteria must be addressed in the application:

- Scientific quality,
- Originality of the work plan,
- Training benefit for the applicant,
- Benefit for the Network.

Each selection criteria will be evaluated with a maximum of 3 points; maximum quantitative result for the four selection criteria is 12 points. The minimum quantitative result acceptable for approval is 8 points; a score with 7 or less points will lead to rejection of the application. In case of rejection, the STSM coordinator informs the applicant. Resubmissions are accepted.

In case of approval, the STSM coordinator will inform the Grant Holder by e-mail. The Grant holder will subsequently inform the successful applicants by sending them a Grant letter with an official approval of the STSM application, a "Payment Request" (to be completed after the completion of the STSM) and the level of the financial grant given. The Applicant has to notify acceptance of the grant by returning the Grant letter, with his/her signature.

Note: a fixed grant is made, in line with COST regulations, and is paid after the STSM has been completed. The grant will be paid directly into the bank account entered onto the e-Cost system.

# AFTER STSM

The grantee is required to submit a (A) short scientific report (no more than 3 pages – tamplate 2), (B) output report (template 3) and (C) a poster (1 page, template 4) to the host institution (for information) and STSM coordinator for approval within 30 days after the end date of the STSM containing: These should contain information on:

- Purpose of the STSM;
- Description of the work carried out during the STSM;
- Description of the main results obtained;
- Future collaboration with the host institution (if applicable);
- Foreseen publications/articles resulting from the STSM (if applicable);
- **Confirmation by the host institution of the successful execution of the STSM;**
- Other comments (if any).

The STSM coordinator is responsible for approving the scientific report and informing the Grant Holder that the STSM has been successfully accomplished; After receipt of the approval by email, the Grant Holder will execute the payment of the grant.

The documents need to be sent electronically, as **one single e-mail having all the documents (STSM scientific report, poster and STSM outcome) form attached, to:**

- the STSM Coordinator, Artur Bednarkiewicz (A.Bednarkiewicz@int.pan.wroc.pl)
- the Host institution of the STSM.

Please follow the requests for naming convention as explained in templates. Please note that the poster and outcome report will be placed on the Action Webpage, after the completion of the STSM.

# AFTER STSM

## **NOTICE OF COMPLETION**

The STSM coordinator will approve the final report, and will send a "notice of completion" of the STSM, together with the short scientific report, to the Grant Holder. The Grant Holder will then execute the payment of the fixed grant directly to the grantee or the host institute, as requested in the application.

## **ACKNOWLEDGMENTS**

If the results from the STSM visit are publishable in a journal, please add the following acknowledgment in your manuscript: "Part of this work was supported by the COST Action CM1403 The European Upconversion Network From The Design Of Photon-upconverting Nanomaterials To (Biomedical) Applications".

# WORKING GROUPS OF UPCONVERSION NETWORK

## **WG 1. Materials Research and Photophysical Characterization**

- 1. More homogeneous distribution of dopant ions and improved core shell UCNMs*
- 2. Avoiding the formation of sodium vacancies and isomorphous substitution of sodium ions*
- 3. Shifting the excitation wavelength from 980 nm to lower NIR wavelengths*
- 4. Plasmonic enhancement of UCNMs*
- 5. Identification of energy loss channels by time-dependent luminescence spectroscopy*
- 6. Reference materials*

## **WG 2. Surface Functionalisation**

- 1. Dispersibility*
- 2. Biocompatibility*
- 3. Coupling of biomolecules*
- 4. Long-term stability*

## **WG 3. Instrument Development**

- 1. Instruments for measuring absolute quantum yields and luminescence lifetime of UCNMs*
- 2. Laser development*
- 3. Development of a single molecule microscope for UCNMs*
- 4. Development and customisation of instruments*

## **WG 4. Assays, Sensors and Imaging**

- 1. Diagnostic assays*
- 2. Chemo- and biosensors*
- 3. Encoding schemes for multiplexed analyte detection*
- 4. Fluorescence imaging and microscopy*
- 5. Single molecule applications*

## **WG 5. Toxicity**

- 1. Interaction with cells*
- 2. Cytotoxicity testing*
- 3. Safety Evaluation*

# Extra information

**Reciprocal STSM (RSTSM)** – The aim of the RSTSM is to enhance the potential impact of global networking and foster knowledge creation and exchange between scientists in COST Actions with host institutions in IPC that benefiting from a reciprocal agreement with COST (Argentina, Australia, New Zealand, South Africa). The reciprocal agreement (COST 4115/13) is based on the ascertained mutual benefit to network.

## USEFUL DOCUMENTS

- Chapter 6 in the COST\_Vademecum\_Part\_1\_28062013
- Full proposal for a new COST Action : The European Upconversion Network: From the Design of Photon-upconverting Nanomaterials to (Biomedical) Applications

# Appendixes

- *Please copy the template to Word (or any other word processor), fill in and save to pdf files*
  - *Please keep naming conventions as provided in individual templates (where provided)*

# Appendix 1 – template for Expression of intention to host STSM

*Use Institutional letterhead*

## Expression of intention to host a Short-Term Scientific Mission European Upconversion Network (EUN)

### STSM Applicant FULL NAME

#### Home

Supervisor name  
Institute + address

#### Host

Supervisor name  
Institute + address

### Period 01.01.2015 – 01.01.2015 (no of weeks)

I hereby inform that we welcome the visit that Mr/Ms/Dr \_\_\_\_\_ plans to perform in our lab at \_\_\_\_\_ in \_\_\_\_\_ (month) \_\_\_\_\_ (year), within the framework of the **European Upconversion Network** Short-Term Scientific Mission (STSM) programme.

The STSM will be scientifically based on the work plan described by Mr/Ms/Dr \_\_\_\_\_ in the STSM Application. The STSM will have a mutual benefit for the applicant and our group, in consideration of both the specific activities to be performed and the expected strengthening of cooperation between the Home and Host institutions.

Yours sincerely,

First name and last name: \_\_\_\_\_

Signature: \_\_\_\_\_

# APPENDIX 2 – template for Scientific Report from STSM (max 3 pages)

Save to filename REPORT\_COST-STSM-CM1403\_LASTNAMEFIRSTNAME.PDF

**European Upconversion Network (EUN)**

**REPORT FROM STSMs  
COST-STSM-CM1403-XXXX**

**„Title of proposal”**

**STSM Grantee**

**Home**

Supervisor name  
Institute + address

**Host**

Supervisor name  
Institute + address

**Period 01.01.2015 – 01.01.2015 (no of weeks)**

1. Purpose of the STSM, main objectives;
2. Description of the work carried out during the STSM; contribution to WPs
3. Description of the main results obtained;
4. Future collaboration with the host institution (if applicable);
5. Foreseen publications/articles resulting from the STSM;



# APPENDIX 3 – template for Output Report from STSM (max 1 page)

Save to filename OUTPUT\_COST-STSM-CM1403\_LASTNAMEFIRSTNAME.PDF

## European Upconversion Network (EUN)

OUTPUT FROM STSMs  
COST-STSM-CM1403-XXXX

„Title of proposal”

### STSM Grantee

#### Home

Supervisor name  
Institute + address

#### Host

Supervisor name  
Institute + address

Period **01.01.2015 – 01.01.2015 (no of weeks)**

### EUN WG

**Objective of the collaboration**

**Results of the collaboration**

### Notes:

- **EUN WG:** please write the number of the Working Group within which the cooperation was meant to be established.
- **Objective of the collaboration:** you can report even the STSM title and maybe expand it a little bit to make it clearer, if necessary (**maximum 150 characters with space**).
- **Results of the collaboration:** please write a very concise synthesis with the outcomes (**maximum 400 characters with space**). Be aware that this information is meant to be presented as a record of a big table for the whole STSM program; is not necessary extended descriptions as they are already reported in the STSM scientific report.



**APPLICANTS NAME**

## TITLE OF THE PROPOSAL

please present MAJOR OBJECTIVES and MAJOR RESULTS in a graphically interesting way

APPENDIX 4 – template for POSTER (max 1 page)

Save to filename POSTER\_COST-STSM-CM1403\_LASTNAMEFIRSTNAME.PDF

HOME GROUP  
SUPERVISOR,  
INSTITUTE NAME +  
ADDRESS

HOST GROUP  
SUPERVISOR,  
INSTITUTE NAME +  
ADDRESS

PERIOD  
01.01.2015 –  
01.01.2015



Chemistry and Molecular  
Sciences and Technologies  
(CMST)



ESF provides the COST Office  
through a European  
Commission contact



COST is supported by the EU  
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