



COST STSM Application Form

To be sent by the applicant as attachment by e-mail together with all the documents he/she would like to submit to support the application (full CV, detailed work plan, motivation, etc.) to the

- * Host (who will send his agreement to host the applicant to the MC Chair)
- * MC Chair for evaluation and approval

COST Office Science Officer: DR MAGDALENA RADWANSKA, magdalena.radwanska@cost.eu

COST MC Chair: PROF. PIERRE PAROT, parot@cea.fr

COST STSM Manager: PIERRE PAROT, pierre.parot@cea.fr

COST STSM Reference Number: COST-STSM-TD1002-11277

Period: 2012-10-01 00:00:00 to 2012-12-31 00:00:00

COST Action: TD1002

STSM type: Regular (from Spain to Italy)

STSM Applicant: Mr Giordano Tosolini, Microelectronics Institute of Barcelona. IMB-CNM (CSIC), Cerdanyola del Valles (ES), giordano.tosolini@imb-cnm.csic.es

STSM Topic: Biomolecule detection and atomic force spectroscopy using self sensing piezoresistive cantilevers

Host: Salvatore Cannistraro, Biophysics & NanoScience Centre, CNISM, DEB department, Università della Tuscia, Viterbo (IT), cannistr@unitus.it

Budget Request: Year-2012

| | |
|---------------------------|-----------|
| Travel | 200 Euro |
| Subsistence (hotel/meals) | 2300 Euro |
| Total | 2500 Euro |

Short CV:

-date of birth: 21/09/1981

-higher education degree:

- a) Master degree in micro- and nanoelectronic engineering (Autonomous University of Barcelona UAB - Spain)
- b) Engineer's degree in materials engineering (University of Trieste - Italy)

Currently i am working on my PhD thesis. I expect to defend it in June 2013.

Work Plan Summary:

1. Learn the AFS technique using a commercial atomic force microscope with standard cantilever and standard optical read out. I am interested especially in the functionalization strategies (and related problems) of the cantilever and of the sample.

(For this purpose a couple of well known ligand-receptor pair can be used (i.e. biotin-streptavidin)).

2. Integration of the piezoresistive cantilever chip into a commercial AFM present at the Biophysics & Nanoscience Center. The integration suppose two types of integration:

- a) Mechanical integration of the chip
- b) Electronic integration: the AFM should work with the signal coming from the piezoresistive chip. To this purpose, it has to be possible to perform a Fz curve without the signal from the photodetector.



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3. Use the piezoresistive cantilever produced in the clean room of Microelectronics Institute of Barcelona (IMB-CNM-CSIC) to detect the molecular interaction between ligand-receptor pair (AFS).

I request the approval of a COST Short Term Scientific Mission as described above

Applicant

Mr Giordano Tosolini

06 Jul 2012