



The newsletter of the Marie Curie Skłodowska European Training Network SPM2.0

SPM2.0 Recent Highlights

2nd Network Meeting, Montpellier (FRANCE), 26th January 2018

The SPM2.0 team got together at INSERM facilities in the beautiful French town of Montpellier the 26th January 2018 at the 2nd Network Meeting. The main purpose of the meeting was to review the progress evolution of the project and to meet the whole SPM2.0 family composed of the Early Stage Researchers (ESR), Principal Investigators and Supervisors, and Project Management.

The coordinator presented an overview of the project and project evolution, including general info, recruitment, training, boards, financial reporting, secondments, dissemination and communication actions, deliverables and milestones alignment and next meetings and doubts. In particular, details on the Personal Career Development Plan were discussed for its proper implementation along 2018.

Then, each beneficiary PI presented a short overview of their overall contribution to the project, followed by technical presentations by some of the ESRs (with more than 6 months experience) highlighting the first steps of their research projects within the SPM2.0 Network.

Finally, the Assessment Commissions meet each fellow to assess on an individual basis the ESR research project evolution and his/her integration within the host institution and the network. The Assessment Commissions are composed of three PIs or Supervisors belonging to beneficiaries other than the host institution, with different expertise and background.



SPM2.0 intends to...

SPM2.0 aims to consolidate Europe as the world leader in Scanning Probe Microscopy technologies and its emerging applications in key sectors like materials, microelectronics, biology and medicine.

The researchers of the network will acquire a solid state-of-the-art multidisciplinary scientific training in this field of research, covering from basic science to industrial applications, which should enable them to generate new scientific knowledge of the highest impact. In addition, they will receive a practical training on transferable skills in order to increase their employability perspectives and to qualify them to access to responsibility job positions in the private and public sectors.



Training Workshop 1, Montpellier (FRANCE), 22nd-25th January 2018

The first Training Workshop took place at the Centre of Structural Biochemistry, in Montpellier (France) coinciding with the second network meeting. This event was organized and hosted by Dr. Pierre-Emmanuel Milhiet (INSERM) and all 14 ESRs of the Network participated.

The courses offered were:

C1. Atomic force microscopy topographic and physical characterization modes. *The world leader AFM manufacturer KEYSIGHT offered an overview of the basic atomic force microscopy topographic modes and of some advanced physical characterization modes.*

C2. Introduction to high speed Atomic Force Microscopy. *An introduction to the principles and methods of high speed AFM together with selected applications in biology was offered by INSERM is one of the world leading groups in high speed AFM methods and applications. Practical demonstrations of high speed AFM operation were also given.*

N1. Designing a Personal Career Development Plan. *This short course done by IBEC introduced the concept of Personal Career Development Plan and provided guidelines for its elaboration. The course was given at the Kick-off Meeting (Supervisors) and in the 1st Training Workshop (Fellows). The practical implementation will be the definition of the PCDPs.*

N2. Scientific communication for scientists and non-scientists. *The course covered aspects of communication addressed to scientific and non-scientific audiences, skills in the oral and written expression, delivery of presentations and use of Open-Source repositories. Course performed by Bojan Markicevic (external consultant).*

Training Workshop 2, Modena (ITALY), 26th-29th June 2018

The second Training Workshop took place at the Università di Modena and Reggio Emilia, in Modena (Italy). The event was organized and hosted by Prof. Fabio Biscarini (UNIMORE) and all 14 ESRs of the Network participated.

The courses offered were:

C3: Composition sensitive Scanning Probe Microscopy techniques. *This course (UNIMORE and CSIC-ICMM) described the main composition sensitive Scanning Probe Microscopy techniques. Among others the course introduced techniques such as multifrequency AFM, quantitative electrostatic force microscopy and infrared near field optical microscopy.*

C4: Subsurface and tomographic scanning probe microscopy techniques. *In this course NANOGUNE and JKU introduced SPM sub-surface and tomographic techniques, based e.g. on SMM, EFM and IR s-SNOM.*

N3: Organization of scientific events. *The course done by CSIC-ICMM included aspects such as getting funding, finding appropriate places and dates, infrastructure needed, etc. for event organization. As a practical implementation of this course ESR will organize the 4th Network Meeting.*

Training Workshop 1



Training Workshop 2



Deliverables and Milestones completed within the second year (M12-M24)

Management Deliverables

- D8.1. Personal Career Development Plans (14). (INSERM).
- D8.2. Report of the assessment commissions (1st). (INSERM).
- D8.3. Network wide courses minutes (Training Workshop 1). (INSERM).
- D8.4. Network Newsletters. (BNC).
- D9.4. Network meeting minutes (Meeting 1). (IBEC).
- D9.5. Progress Report. (IBEC)
- D8.5. Network wide courses minutes (Training Workshop 2). (UNIMORE).
- D8.8. Network Newsletters (2nd). (BNC).

RTD Deliverables

- D2.1. Tip-sample interaction models for composition mapping. (CSIC).
- D2.2. Reconstruction algorithms for SPM 3D tomography. (IBEC).
- D7.1. Cantilever calibration good practices. (NPL).

Milestones

- MS1. Intranet and extranet website (BNC).
- MS2. Guidelines for Recruitment, Personal Career Development Plan (PCDP), Assessment Commission (AC), and Employment Plan (EP). (IBEC).
- MS3. ESRs Recruitment and PCDPs. (TUW).
- MS4. Assessment Commissions. (INSERM).
- MS5. Doctoral studies. (UNIMORE).

SPM2.0 Publications during the second year (M12-M24)

- **Simone Benaglia (ESR5, ICMM)**, Victor G. Gisbert, Alma P Perrino, Carlos A. Amo, Ricardo Garcia. Fast and high-resolution mapping of elastic properties of biomolecules and polymers with bimodal AFM. Nature Protocols, 13: 2890-2907 (2018). <https://doi.org/10.1038/s41596-018-0070-1>
<http://hdl.handle.net/10261/172908>

Future Actions

Network meeting 3, Linz (Austria), January 2019:

The third SPM2.0 Network Meeting will take place at the Johannes Kepler University in Linz- JKU (AUSTRIA) in January 2019. The main purpose of the meeting will be to review the progress evolution of the project with the EU Project Officer (Mercedes LEGUEY).

Training Workshop 3, Linz (Austria), January 2019:

The third Training Workshop will be done at the Johannes Kepler University in Linz - JKU (AUSTRIA) coinciding with the third network meeting. The courses offered include:

- N5: Entrepreneurship: creating technology based companies.
- C5: Winter school on single molecule biophysics for nano-biotechnology.
- N4: Intellectual property rights: protecting your discoveries and findings.