



SPM2.0

The newsletter of the Marie Curie Skłodowska
European Training Network

SPM2.0 Objectives

Scanning probe microscopies for nanoscale fast, tomographic and composition imaging

SPM2.0 is a **Marie Curie Skłodowska European Training Network** (MSCA-ITN-ETN) aiming to train a new generation of researchers in the science and technology of Scanning Probe Microscopes, in which Europe is currently in a leading position, in order to enforce their further development and quick and wide commercialization and implementation in public and private research centers, as well as in industrial and metrology institutions.

Advanced Microscopy techniques are widely recognized as one of the pillars onto which the research and manufacture of nanotechnology based products is sustained. At present, the greatest challenge faced by these techniques is the realization of fast and non-destructive tomographic images with chemical composition sensitivity and with sub-10 nm spatial resolution, in both organic and inorganic materials, and in all environmental conditions.

Scanning Probe Microscopes are currently the Advanced Microscopy techniques experiencing the fastest evolution and innovation towards solving this challenge. Scanning Probe Microscopes have crossed fundamental barriers, and novel systems exist that show potential unparalleled performance in terms of 3D nanoscale imaging capabilities, imaging speed and chemical sensitivity mapping.



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.



Project Consortium

The unique consortium formed by world leading **academic and industrial research groups**, which have already decisively contributed to the latest developments of these advanced SPM techniques and in the development of Nanotechnology based products, constitutes a guarantee for the success of the Network and for a brilliant future of the network Fellows. The network consists of **10 beneficiaries and 2 partners, from 6 countries: Austria, France, Germany, Italy, Spain, and UK.** <https://spm20.eu/consortium/>

Institute for Bioengineering of Catalonia (IBEC).	Spain	Gabriel Gomila
Institut National de la Santé de la Recherche Medicale (INSERM)	France	Pierre-Emmanuel Milhiet
Centro Superior de Investigaciones Científicas (CSIC-ICMM)	Spain	Ricardo Garcia
Johannes Kepler University of Linz (JKU)	Austria	Peter Hinterdorfer
Nanoscience Cooperative Research Centre (NANOGUNE)	Spain	Rainer Hillenbrand
National Physical Laboratory (NPL)	UK	Fernando Castro
Keysight Technologies Oesterreich GmbH (KEYSIGHT)	Austria	Ferry Kienberger
Technische Universität Wien (TUW)	Austria	Ulrich Schmid
Bio Nano Centre Ltd (BNC)	UK	David Sarphie
Università degli studi di Modena e Reggio Emilia (UNIMORE)	Italy	Fabio Biscarini
SCL-Sensor. Tech. Fabrication GmbH (SCL)	Austria	Ernest Fantner
Infineon Technologies (INFINEON)	Germany	Thomas Schweinboeck



Work Packages

The research programme of the Network is organized into six research Work Packages (WPs):

- **WP2** will deal with the theoretical modelling of the novel SPM techniques.
- **WP3** will deal with the development of novel advanced SPM instruments for high-speed imaging, composition sensitive mapping and 3D tomographic reconstruction.
- **WP4** will include the development of novel SPM probes and other accessories to enhance the capabilities of the new SPM techniques.
- **WP5** will include relevant applications of the novel techniques to the Materials and Electronics sectors.
- **WP6** will include those relevant for the Biology and Medicine sectors.
- **WP7** will cover metrology and standardization aspects of the novel techniques.

For more information please visit the following link: <https://spm20.eu/project-summary/>

SPM2.0 Recruited ESRs

The consortium recruited the 14 ESRs among the applying candidates, of which 5 were women and 9 men, giving a ratio of 36%, close to the 40% targeted in the proposal. More detailed information on each fellow is presented in the SPM2.0 website (<https://spm20.eu/fellows/>).

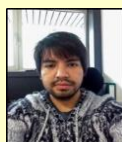
ESR1	IBEC	Martina Di Muzio	Female	IT
ESR2	IBEC	Harishankar Balakrishnan	Male	IN
ESR3	INSERM	Oscar Saavedra	Male	CL
ESR4	INSERM	Sara Rombouts	Female	BE
ESR5	ICMM	Simone Benaglia	Male	IT
ESR6	JKU	Daniel Canena	Male	BR
ESR7	NANO GUNE	Divya Virmani	Female	IN
ESR8	NANO GUNE	Lars Mester	Male	DE
ESR9	NPL	Filipe Richheimer	Male	PT
ESR10	KEYSIGHT	David Toth	Male	HU
ESR11	KEYSIGHT	Ivan Alic	Male	HR
ESR12	TUW	Jonas Hafner	Male	DE
ESR13	BNC	Maria Elena Piersimoni	Female	IT
ESR14	UNIMORE	Sofia Drakopoulou	Female	EL



ESR1



ESR2



ESR3



ESR4



ESR5



ESR6



ESR7



ESR8



ESR9



ESR10



ESR11



ESR12



ESR13



ESR14

Project Progress

Project kick-off meeting (January 2017):

The project kick-off meeting took place at the Parc Científic de Barcelona (PCB) in Barcelona (SPAIN), where Institute for Bioengineering of Catalonia (IBEC) is located. The kick-off meeting lasted for 2 days: 26th 27th January 2017 being focused in the main management aspects for the network at this stage of the project (i.e. recruitment, rules, budget allocation, first training activities, etc.). All ten beneficiaries and one partner organisation were represented in the kick-off meeting. The Supervisory Board members were appointed during the kick-off meeting.

Future Actions

Network meeting 2 (January 2018):

Second SPM2.0 will be hosted by INSERM (FRANCE). Main purpose of the meeting will be to present the spirit of the project to all ESR fellows but putting also big emphasis on the relevance of the training part to be implemented within the network.

Training Workshop 1 (January 2018):

The first Training Workshop will be done at INSERM coinciding with the second network meeting. The courses to be trained will be:

- C1. Atomic force microscopy topographic and physical characterization modes.
- C2. Introduction to high speed Atomic Force Microscopy.
- N1. Designing a Personal Career Development Plan.
- N2. Scientific communication for scientists and non-scientists.