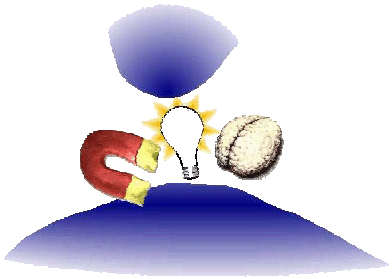
Final publishable summary

Advanced Scanning PRobes for Innovative Nanoscience and Technology (ASPRINT)

www.asprint.science.ru.nl



The aim of ASPRINT was to accelerate the development and application of scanning probe microscopy (SPM) methods in Europe. SPM methods employ the local interaction between a sharp probe and the addressed nano-objects. Representatives are Scanning Tunneling Microscopy (STM), Atomic Force Microscopy (AFM), and Scanning Near-Field Microscopy (SNOM).

ASPRINT advanced scanning probe methods and developed conceptually new, so far not yet possible modes. These new modes are important to nanoscience and technology. The possibilities for visualization, local manipulation, and spectroscopy, i.e.the performance of Scanning Probe Methods in general, represent key-technology for the development of nanoscience and technology at this stage. The tasks of ASPRINT are at the centre of these topics, which gives rise to a high impact. During the last years scanning probe methods became increasingly important for the economy. Awareness of- and access to SPM by the industry is being improved.

ASPRINT was a European project where 12 partners in the field of nanoscience and technology joint forces. The objectives of ASPRINT concerned nano-magnetic scanning probe methods, nano-optical scanning probe methods, and smart scanning probes. The project provided enhanced applicability, reached higher resolution, produced dedicated probes, and also new modes of scanning probe microscopy. As a result towards industry ASPRINT provided access to novel nanotools.

List of Partners

No.	*Participant name*	*Participant short name*	*Responsible*	*Role*
1	Radboud University Nijmegen	RU	Prof. Dr. Sylvia Speller	Diversification of spin-polarized STM
2	Universität Hamburg	UH	Prof. Dr. Roland Wiesendanger	Atomic manipulation and characterization of artificial nanostructures by spin-polarized scanning tunneling microscopy.

No.	*Participant name*	*Participant short name*	*Responsible*	*Role*
3	Universität des Saarlandes	USAAR	Prof. Dr. Uwe Hartmann	High frequency magnetic force microscopy
4	Trinity College Dublin	TCD	Prof. Igor V. Shvets	Preparation and characterisation of novel STM probes and nanotemplated oxide surfaces for nanomagnetic sensing applications.
5	Leiden University	LU	Prof. Dr. J.W.M. Frenken	Video rate SPM and beyond
6	COBRA-Inter-University Research Institute on Optical Communication	COBRA	Prof. Dr. Paul Koenraad	Spin-polarized scanning tunneling induced luminescence
7	Université de Bourgogne	UB	Prof. Dr. Alain Dereux	SNOM tips to selectively observe specific optical near-field effects Fabrication of nanostructures to tailor the optical Local Density of States (LDOS)
8	Westfälische Wilhelms-Universität Münster	WWU	Prof. Dr. Harald Fuchs	Scanning Fluctuating Electromagnetic Field Microscopy; imaging material properties on the nanometer scale
9	Institute of Photonic Science, Barcelona	ICFO	Prof. Dr. Niek F. van Hulst	Development of advanced probes and single molecule imaging of biomolecules. Near-field single molecule detection Fabrication of nano-antenna's, conventional NSOM probes, etc.
10	Nanoworld Services GmbH	Nanoworld	Dr. Thomas Sulzbach	Prototyping and commercial production of advanced magnetic scanning probes
11	Nascatec GmbH	Nascatec	Dr. Tomasz Debski	Developing, prototyping, and producing optical SPM sensors, micromechanics for application in R&D, characterization of surface topography and process control.
12	Omicron NanoTechnology GmbH	Omicron	Dr. Ingrid Oebbeke	SPM consultancy

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