



# The nano factory

Map layout at the beginning



# The Nano factory

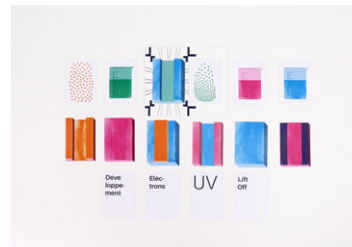
*A new way to popularize nanoscience*

This tool will allow you to present different aspects of the world of nanophysics : the clean room and its different zones, the lithography, the characterization tools, some of the related research areas, and some applications through the example of the smartphone. Just as in a board game, you will find different areas for cards, as indicated here. This manual describes all the contents. And then, it's up to you ! You will find on [www.vulgarisation.fr](http://www.vulgarisation.fr) an example of use with the associated talk, which lasts about 15 minutes. But it's completely free to you to choose what to present, in which order, and with various possible ways to interact with the public. You can even use it in a conference with a webcam moving on top of the game. In short, you are the master of the game!

Details of the different card games



**Applications**



**Lithography**

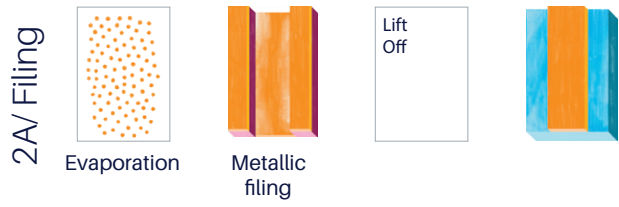
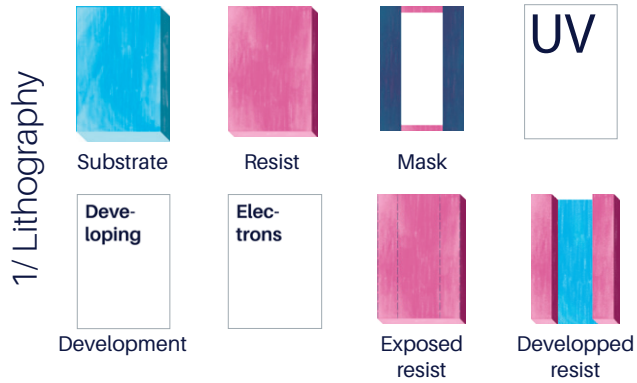


**Examples of related research**



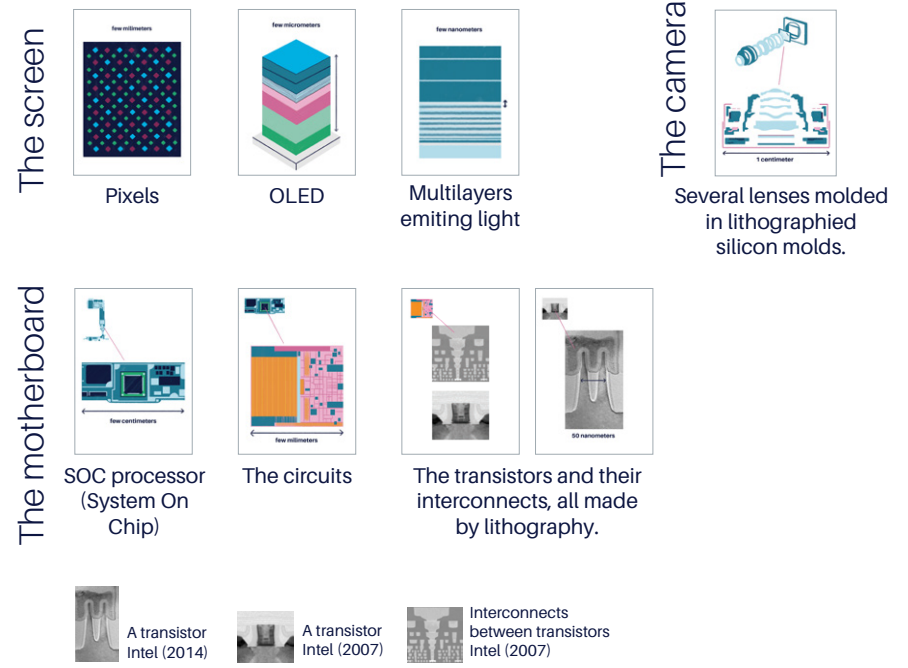
**Characterization instruments**

# Lithography



# Applications

in a smartphone



# Examples of related research

Microfluidic

Study of the liquids flow properties at micro and nanometer scale

This block features an image of a person working with microfluidic equipment. The text describes the study of liquid flow properties at the micro and nanometer scale.

Photonic

Study of the interaction of light with nano-objects

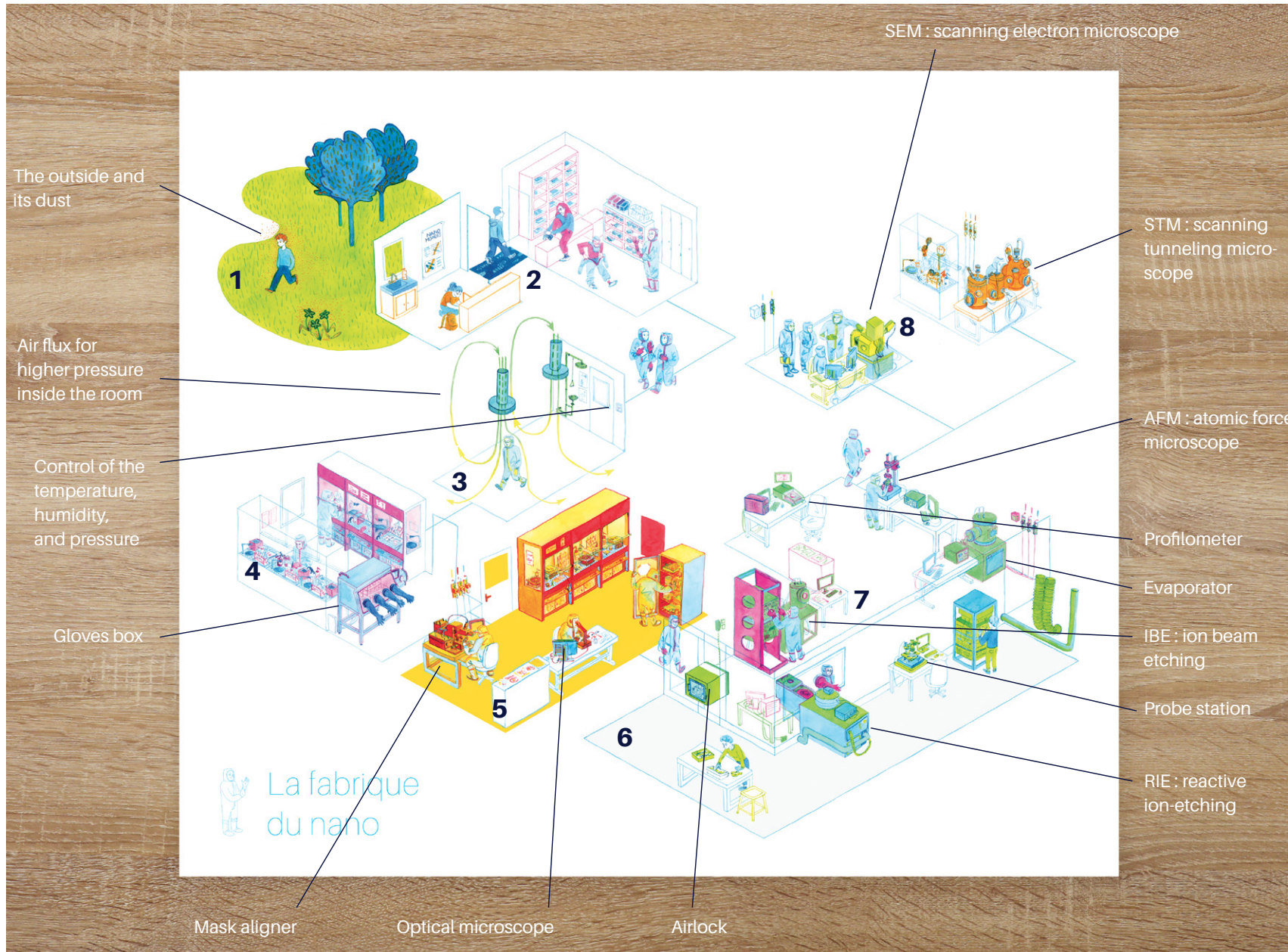
This block features an image of photonic research equipment. The text describes the study of the interaction of light with nano-objects.

Quantic

Study of matter properties at the nanometer scale and quantum phenomenon

This block features an image of quantic research equipment. The text describes the study of matter properties at the nanometer scale and quantum phenomena.

# The board




- 1** Outside
- 2** Airlock
- 3** Air control
- 4** Humid area with fume cupboard
- 5** Photolithography area
- 6** Grey area
- 7** Characterization area and etching system
- 8** Microscopes

# Characterization instruments




## What represent the scientific images

 DNA plasmids on mica  
Nathalie Lidgi Guigui, SABNP, Université d'Évry

 Honeycomb lattice of superconducting resonators  
Alexis Morvan, LPS, Université Paris Saclay - CNRS

 Silicon atoms  
Guillaume Baffou, LPPM, Université Paris Saclay - CNRS

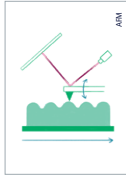
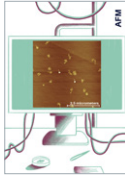
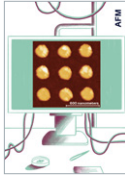
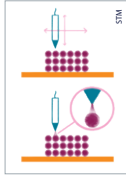
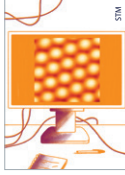
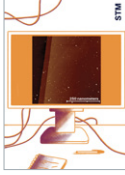
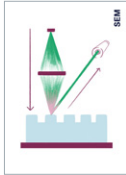
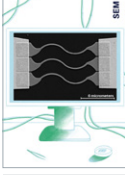
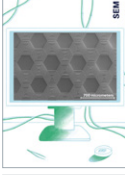
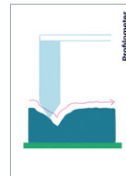


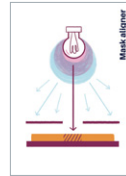


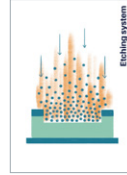


 Quantum dots based on carbon nanotubes  
Richard Deblock, LPS, Université Paris Saclay - CNRS

 Gold nanocylinders on glass  
Nathalie Lidgi Guigui CSPBAT, Université Paris 13 - CNRS

 Photonic crystal  
Jeanne Solard, C(PN), LPL, Université Paris 13 - CNRS

 Au nanoparticles composed of 147 atoms pinned on graphite HOPG  
Nathalie Lidgi Guigui, NPRL, University of Birmingham

 Connected magnetic nanotrack  
Jean Yves Chauleau, LPS, Université Paris Saclay - CNRS

	Instrument	Principle	Images	
Etching system	AFM			
	STM			
	SEM			
Mask aligner	Profilometer			
	Mask aligner			
	Etching system			

This project is the result of a collaboration between Clara Hinoveanu and Zoé Lemaire from the DSAA “Design d’illustration scientifique” of Ecole Estienne, the “Physics Reimagined” team (LPS, Univ. Paris-Saclay) and Nathalie Lidgi-Guigui (Univ. Paris 13).

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#### Image credit

Richard Deblock, Raphaël Weill, LPS  
CNRS Photothèque, Jeanne Solard,  
Nathalie Lidgi-Guigui, Intel, Guillaume  
Baffou, Jean-Yves Chauleau



