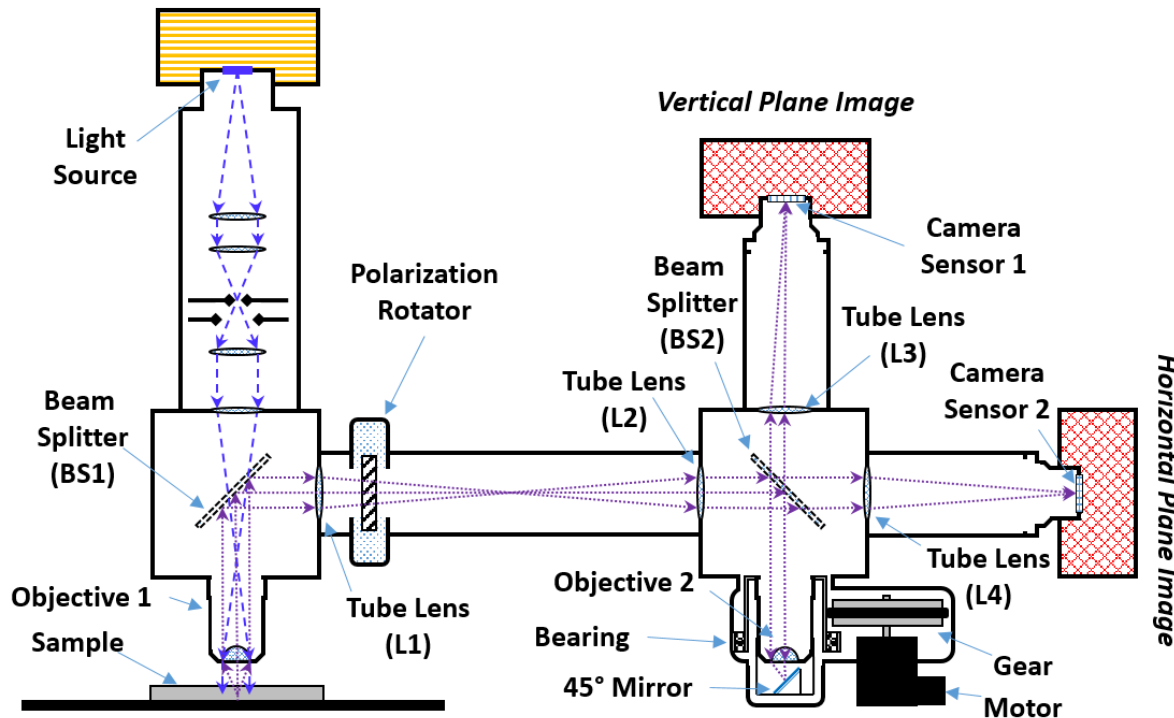


# OPTICAL MICROSCOPE WITH 3D SUPER-RESOLUTION



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**KEYWORDS:**

Optical Microscopy  
Plasmonic Resonance  
Super Resolution  
Nanoparticles

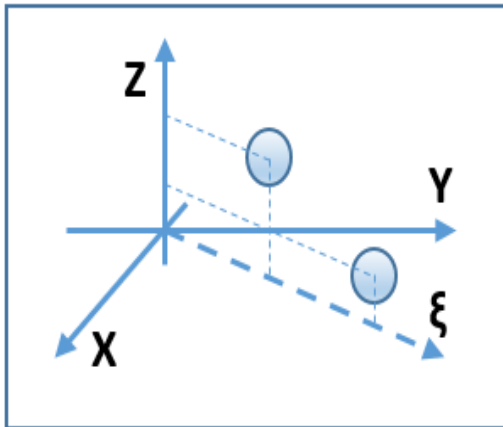
A completely automated optical microscope for a fast readout of samples containing metallic nanoparticles immersed in a transparent dielectric media. Its uniqueness is in the capability of reaching nanometric resolution thanks to a fast, automated and three-dimensional analysis method.

# OPTICAL MICROSCOPE WITH 3D SUPER-RESOLUTION



## DESCRIPTION :

The developed technology refers to an optical microscope for the detection and characterization of metallic particles of nanometric size in a dielectric medium or nuclear emulsions. Thanks to the special design of the optical system and to the use of polarized light, also exploiting the plasmon resonance effect, the microscope is capable of achieving nanometric accuracy in position determination along all the three dimensions, thus allowing analysis of shape and dimensions of particles. The analysis system, different orders of magnitude faster than that of traditional methods such as X-ray or electronic microscopy, and the non-invasive investigation make the system suitable and advantageous for the analysis of impurities in some types of materials.



## ADVANTAGES:

- 3D scanning of nanometric objects;
- Non-destructive samples analysis;
- Faster response than electronic and X-rays microscopy;
- Analysis of particles reaching a depth of several  $\mu\text{m}$  inside the sample.

## APPLICATIONS:

- Ultra-fast analysis of surfaces and volumes for the detection of nanometric and metallic particles or impurities;
- Analysis of the shape and size of nanometric particles inside an organic or dielectric material.