

UV-Visible Spectroscopy (UV-VIS)

Category:

C. Particle Characterisation in and ex-situ and/or

Institute: Institut Català de Nanotecnologia (ICN)

Location: Campus UAB

Contact Details of Technology Expert:

Jordi Piella

Tel. +34-93 737 46 24

Email: jordi.piella@icn.cat

Short technology description/Overview:

UV-visible spectroscopy is a very common and well-known analytical technique. Several metallic NPs, such as gold, silver and copper, exhibit a characteristic absorbance maximum in the visible range (the surface plasmon resonance, SPR). This characteristic wavelength changes depending on the size and surface alterations. The SPR is sensitive to the surroundings of the NPs at the molecular level, and therefore the changes in the close environment of the NPs (such as conjugation) can be investigated using this technique.

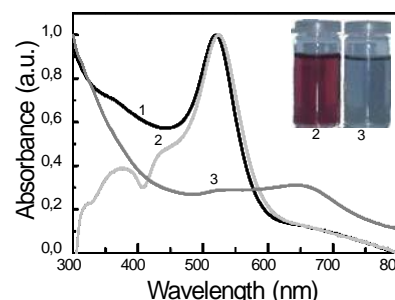
Sample preparation and experimental procedure.

- UV-Vis spectra are acquired with a Shimadzu UV-2400 spectrophotometer.
- 1 mL of the NP solution is placed in a cuvette, and 1 ml of the solvent that carry the NPs is placed in another cuvette and used as reference (blank).
- Spectral analysis is performed in the 300-800 nm range.

Main Features (Equipment Capabilities):

- Optical properties of NPs
- Tracking of conjugation
- size (Au, Cu, Ag)
- size distribution, concentration, functionalization, stability

Typical Samples & Images:



UV-vis spectra of AuNPs (1) AuNPs in cell culture media (2) and AuNPs destabilized with salts

Any further Information: