[**JRC Nanobiotechnology Laboratory**](https://ec.europa.eu/jrc/en/research-facility/nanobiotechnology-laboratory)

**Requested facilities/instrumentation form**

(Version September 2020)

**Note**

This form must be sent by e-mail to: JRC-OPEN-NANOBIOTECH@ec.europa.eu with copy to pascal.colpo@ec.europa.eu

|  |  |
| --- | --- |
| **Call** |  |
| **Proposal acronym**  |  |
| **Lead user** |  |
| **Date of submission** |  |

| **PHYSICAL CHEMICAL Characterisation**  | **Number Instrument days requested** | **Training needed to users to perform the experiments****(Y/N)** | **User team performs the experiments****(Y/N)** |
| --- | --- | --- | --- |
| NP synthesis facilities | TiO2, ZnO, CeO2, FexOy, SiO2, Ag, Au |   |  |  |
| Particle Tracking Analyser  | Particle sizing  |  |  |  |
| Dynamic light scattering  | Particle sizing and/or z-potential analyser |  |  |  |
| Disk centrifuge sedimentation | Particle sizing  |  |  |  |
| Single Particle Extinction and Scattering | Particle characterization and sizing |  |  |  |
| BET instrument | NP surface area characterisation |  |  |  |
| Analytical Ultracentrifuge | Particle and protein sizing  |  |  | \* n/a |
| Multi Angle Light Scattering | Particle sizing |  |  |  |
| Static light scattering | Particle sizing |  |  |  |
| Tuneable Resistive Pulse Sensing Particle Sizer | Particle sizing |  |  |  |
| Centrifugal Flow Field Fractionation  | Particle separation and sizing |  |  |  |
| Asymmetric Field Flow Fractionation | Nanoparticle separation and sizing with online coupled detectors |  |  |  |
| UV-vis spectro-photometer | Nanoparticle and protein characterisation |  |  |  |
| Circular dichroism | Protein characterisation |  |  |  |
| Inductively coupled Mass spectroscopy(ICP-MS) with Single particle analysis mode. | Trace element analysis |  |  | \* n/a |
| Total Reflection X-ray Fluorescence Spectrometer (TXRF)  | Trace element analysis |  |  |  |
| Imaging Ellipsometry  | Surface Characterisation |  |  |  |
| Transmission Electron Microscope with EDAX chemical analysis TEM | Electronic Microscopy |  |  | \* n/a |
| Raman-microscope | Material characterisation |  |  |  |
| FTIR-Microscope with focal-plane array technology | Material characterisation |  |  |  |
| FT-IR spectroscopy | Material characterisation |  |  |  |
| X-ray Diffractometer for structural analysis | Crystal structural analysis |  |  | \* n/a |
| TOF-SIMS surface analysis system | Surface chemistry Analysis |   |  | \* n/a |
| XPS surface analysis system | Surface chemistry Analysis |  |  | \* n/a |
| Liquid and gas chromatrography instrumentation (HPLC-DAD, FLD; GC-MS) | Quantification and identification of analytes. |  |  |  |
| Climatic environmental chambers | Emission studies under controlled conditions & gaseous exposure studies. |  |  |  |
| Air sampling and particle counters |  |  |  |  |

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| **Surface chemistry, sAMple preparation,****micro-nano fabrication, molecular detection** | **Number Instrument days requested** | **Training to users required to perform the experiments****(Y/N)** | **User team performs the experiments****(Y/N)** |
| Cryo-milling | Plastic particle size refinement |  |  |  |
| Micro-spotter  | Robot for biomolecule microspotting |  |  |  |
| Surface Plasmon Resonance Imaging Biosensor  | Multiplexed Biomolecular real-time detection |  |  |  |
| Quartz crystal microbalance  | Biomolecular real-time detection |   |  |  |
| Surface Plasmon Resonance Biosensor  | Biomolecular real-time detection |  |  |  |
| Microplate Reader | Modulus Microplate / Fluorimeter |  |  |  |
| Atomic Force Microscope | Surface characterization  |  |  |  |
| Field Emission Scanning Electron Microscope + Focused-Ion-Beam (FESEM+FIB) + EDX  | Surface characterization and nanopatterning |  |  | \* n/a |
| Ellipsometer | Thin film characterisation |  |  |  |
| Electron kinetic analyser  | Determination of Z potential of surface |  |  |  |
| Langmuir-Blodgett system  | Surface functionalization |  |  |  |
| Photo lithography | Micro patterning of surface  |  |  |  |
| Plasma reactor | Plasma etching |  |  |  |
| Plasma reactor  | Plasma polymerisation Acid acrylic |  |  |  |
| Plasma reactor | Plasma polymerisation PEO |  |  |  |
| Surface functionalisation | Thiol and Silane chemistries |  |  |  |
| Magnetron sputtering reactor | Au, Ti, Ag deposition |  |  |  |

**Legend**

\* n/a: not applicable – usually this instrument is operated in collaboration with JRC specialists.