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

**Requested facilities/instrumentation form**

(Version January 2018)

**Note**

This form must be sent by e-mail to: [pascal.colpo@ec.europa.eu](mailto:pascal.colpo@ec.europa.eu)

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| --- | --- |
| **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 Tracing Analyser | Particle sizing | |  |  |  |
| Dynamic light scattering | Particle sizing and/or z-potential analyser | |  |  |  |
| Disk centrifuge sedimentation | Particle sizing | |  |  |  |
| BET instrument | NP surface area characterisation | |  |  |  |
| Analytical Ultracentrifuge | Particle and protein sizing | |  |  | \* n/a |
| Multi Angle Light Scattering | Particle sizing | |  |  |  |
| Tuneable Resistive Pulse Sensing Particle Sizer | Particle sizing | |  |  |  |
| Centrifugal Flow Field Fractionation | Particle sizing | |  |  |  |
| Asymmetric Field Flow Fractionation | Nanoparticle separation and sizing | |  |  |  |
| UV vis spectro-photometer | Nanoparticles and protein characterisation | |  |  |  |
| Circular dichroism | Protein characterisation | |  |  |  |
| HPLC with CAD, UV and Fluorescence detectors | Chemical composition analysis | |  |  |  |
| Inductively coupled Mass spectroscopy  (ICP-MS) | 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 | |  |  |  |
| 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 |

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| **BIOLOGY** |  | **Number Instrument days requested** | **Training to users required to perform the experiments**  **(Y/N)** | **User team performs the experiments**  **(Y/N)** |
| Cell culture facilities | In vitro assays (MTT, CFE, ...) |  |  |  |
| DNA Microarray scanner | Microarray reader |  |  |  |
| Fluorimeter | Fluorescence Spectroscopy Analysis |  |  |  |
| Cell colony counter | Cell colony counting |  |  |  |
| Microscope for high content analysis | Imaging system for live cells |  |  | \* n/a |
| Multimode plate reader | Absorbance Fluorescent and luminescence measurements |  |  |  |
| Flow cytometer | Cell sorting |  |  |  |
| Real time PCR | Real Time PCR |  |  |  |
| Impedance Spectrometer | Impedance Spectroscopy system for real-time cell analysis |  |  |  |

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| **Surface chemistry,**  **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)** |
| Micro-contact printer | Protein printing |  |  |  |
| Micro-spotter | Robot for biomolecule microspotting |  |  |  |
| Surface Plasmon Resonance Imaging Biosensor | Multiplexed Biomolecular real-time detection |  |  |  |
| Quartz crystal microbalance | Biomolecular real-time detection |  |  |  |
| Portable Surface Plasmon Resonance Imaging Biosensor | Multiplexed Biomolecular real-time detection |  |  |  |
| Surface Plasmon Resonance Biosensor | Biomolecular real-time detection |  |  |  |
| Microplate Reader | Modulus Microplate / Fluorimeter |  |  |  |
| ITC Isothermal Titration Calorimeter | Protein characterisation |  |  |  |
| Fluorescence lifetime spectroscopy | Protein Nanoparticle Characterisation |  |  |  |
| Atomic Force Microscope | Surface characterization |  |  |  |
| Field Emission Scanning Electron Microscope + Focused-Ion-Beam (FESEM+FIB) + EDX + E. Beam writer | Surface characterization and nanopatterning |  |  | \* n/a |
| Ellipsometer | Thin film characterisation |  |  |  |
| Electron kinetic analyser | Determination of Z potential of surface |  |  |  |
| Langmuir-Blodgett system | Surface functionalization |  |  |  |
| Mask aligner | 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.

\*\* TXRF instrumentation available from March 2018