EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Directorate F – Health, Consumers & Reference Materials
Consumer Products Safety Unit

JRC Nanobiotechnology Laboratory

Requested facilities/instrumentation form

(Version November 2022)

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 (checkbox)	User team performs the experiments (checkbox)
NP synthesis facilities	TiO_2, ZnO, CeO_2, Fe_xO_y, SiO_2, Ag, Au	None	☐	☐
Particle Tracking Analyser	Particle sizing	None	☐	☐
Dynamic light scattering	Particle sizing and/or z-potential analyser	None	☐	☐
Disc centrifuge sedimentation	Particle sizing	None	☐	☐
Single Particle Extinction and Scattering	Particle characterisation and sizing	None	☐	☐
BET instrument	NP surface area characterisation	None	☐	☐
Analytical Ultracentrifuge	Particle and protein sizing	None	☐	* n/a
Multi Angle Light Scattering hyphenated to AF4	Particle sizing	None	☐	☐
Static light scattering	Particle sizing	None	☐	☐
Tuneable Resistive Pulse Sensing Particle Sizer	Particle sizing	None	☐	☐
Single Particle Extinction and Scattering	Particle sizing and characterisation	None	☐	☐
Centrifugal Flow Field Fractionation	Particle separation and sizing	None	☐	☐

PHYSICAL CHEMICAL CHARACTERISATION		Number Instrument days requested	Training needed to users to perform the experiments (checkbox)	User team performs the experiments (checkbox)
Asymmetric Flow-Field Flow Fractionation (AF4)	Nanoparticle separation and sizing with online coupled detectors (MALS, DLS, UV/VIS)	None	☐	☐
UV-vis spectro-photometer	Nanoparticle and protein characterisation	None	☐	☐
Circular dichroism	Protein characterisation	None	☐	☐
Inductively coupled Mass spectroscopy (ICP-MS) with Single particle analysis mode.	Trace element analysis (normal mode); Particle counting and sizing (single particle mode)	None	☐	* n/a
Total Reflection X-ray Fluorescence Spectrometer (TXRF)	Trace element analysis	None	☐	☐
Imaging Ellipsometry	Surface Characterisation	None	☐	☐
Transmission Electron Microscope with EDAX chemical analysis TEM	Electronic Microscopy	None	☐	* n/a
Raman-microscope	Material characterisation	None	☐	☐
FTIR-Microscope with focal-plane array technology	Material characterisation	None	☐	☐
FT-IR spectroscopy	Material characterisation	None	☐	☐
X-ray Diffractometer for structural analysis	Crystal structural analysis	None	☐	* n/a
TOF-SIMS surface analysis system	Surface chemistry Analysis	None	☐	* n/a
XPS surface analysis system	Surface chemistry Analysis	None	☐	* n/a
Liquid chromatography (HPLC-DAD, FLD)	Quantification and identification of organic non-volatile analytes	None	☐	☐
Gas chromatography (GC-MS, GC-FID/ECD)	Quantification and identification of organic volatile analytes	None	☐	☐
Pyrolysis GC-MS	Identification and quantification of e.g. polymers	None	☐	☐
Climatic environmental chambers	Emission studies under controlled conditions (temperature, RH and air exchange rate) & gaseous exposure studies	None	☐	☐

SURFACE CHEMISTRY, SAMPLE PREPARATION, MICRO-NANO FABRICATION, MOLECULAR DETECTION		Number Instrument days requested	Training to users required to perform the experiments (checkbox)	User team performs the experiments (checkbox)
Cryo-milling	Plastic particle size refinement	None	☐	☐
Micro-spotter	Robot for biomolecule microspotting	None	☐	☐
Surface Plasmon Resonance Imaging Biosensor	Multiplexed Biomolecular real-time detection	None	☐	☐
Quartz crystal microbalance	Biomolecular real-time detection	None	☐	☐
Surface Plasmon Resonance Biosensor	Biomolecular real-time detection	None	☐	☐
Microplate Reader	Modulus Microplate / Fluorimeter	None	☐	☐
Atomic Force Microscope	Surface characterisation	None	☐	☐
Field Emission Scanning Electron Microscope + Focused-Ion-Beam (FESEM+FIB) + EDX	Surface characterisation and nanopatterning	None	☐	* n/a
Ellipsometer	Thin film characterisation	None	☐	☐
Electron kinetic analyser	Determination of Z potential of surface	None	☐	☐
Langmuir-Blodgett system	Surface functionalisation	None	☐	☐
Photo lithography	Micro patterning of surface	None	☐	☐
Plasma reactor	Plasma etching	Not available	Not available	Not available
Plasma reactor	Plasma polymerisation PEO	Not available	Not available	Not available
Surface functionalisation	Thiol and Silane chemistries	None	☐	☐
Magnetron sputtering reactor	Au, Ti, deposition	None	☐	☐

BIOLOGY		Number Instrument days requested	Training to users required to perform the experiments (checkbox)	User Teams performs the experiments (checkbox)
Cell culture facilities	In vitro assays (MTT, CFE, ...)	Not available	Not available	Not available
DNA Microarray scanner	Microarray reader	None	☐	☐
Confocal fluorescence Microscope	3D image analysis	None	☐	* n/a
Microscope for high content analysis	Imaging system for live cells	Not available	Not available	Not available
Multimode plate reader	Absorbance Fluorescent and luminescence measurements	None	☐	☐
Flow cytometer	Flow cytometer	None	☐	☐
Real time PCR	Real Time PCR	None	☐	☐
Impedance Spectrometer	Impedance Spectroscopy system for real-time cell analysis	Not available	Not available	Not available

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