

# Welcome to QualityNano Transnational Access (TA)

Fully funded access to equipment & technical expertise at 15  
nano-characterization laboratories in Europe

## Wageningen University



## Particle Characterisation

WUR-WU has an extensive and partly unique arsenal of facilities to characterise the nanostructured materials in different stages of the synthesis and functionalisation, including the expertise to interpret the data and understand the underlying principles.

### X-ray Photoelectron Spectroscopy

- X-ray Photoelectron Spectroscopy (XPS) is a quantitative surface analysis technique in which X-rays are absorbed by atoms and as a result photoelectrons are emitted. By determining the kinetic energy of the photoelectrons the elemental composition and the chemical or electronic state of the elements can be determined. In this way the XPS technique is used to investigate the chemistry at the surface of a sample.



### Auger Electron Spectroscopy



- Auger electron spectroscopy (AES) is an analytical technique for obtaining the chemical composition of the top few layers of a surface. It cannot detect hydrogen or helium, but is sensitive to all other elements. The surface is irradiated in a high vacuum chamber using an electron beam and as a result Auger electrons are emitted from the elements within the surface.

### Fluorescence spectrometer

- The spectrofluorimeter is offering combined steady state and **fluorescence lifetime** capabilities.

### FT-IR spectrometers

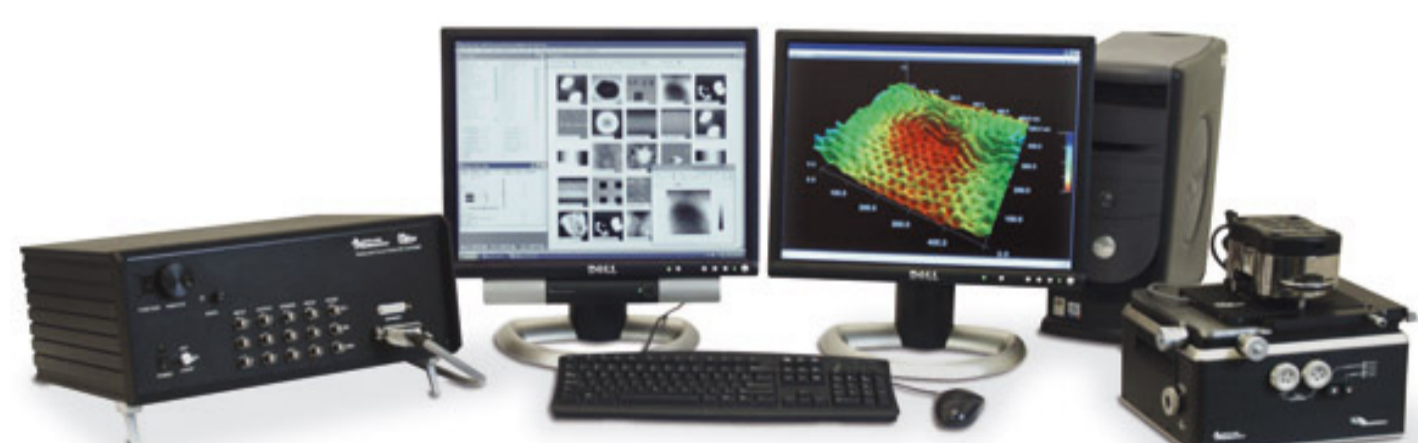
- We have two Fourier-Transformation Infra-Red spectrometers. (Bruker Tensor 27). Liquid nitrogen cooled MCT-detector for extra sensitive measurements and connected to a Bruker Hyperion 2000 IR-microscope. This microscope has also a liquid nitrogen cooled MCT-detector. Included is a Harricks Auto-Seagull for reflective absorption spectrometry (IRRAS)

### Bruker Avance III 400MHz NMR spectrometer

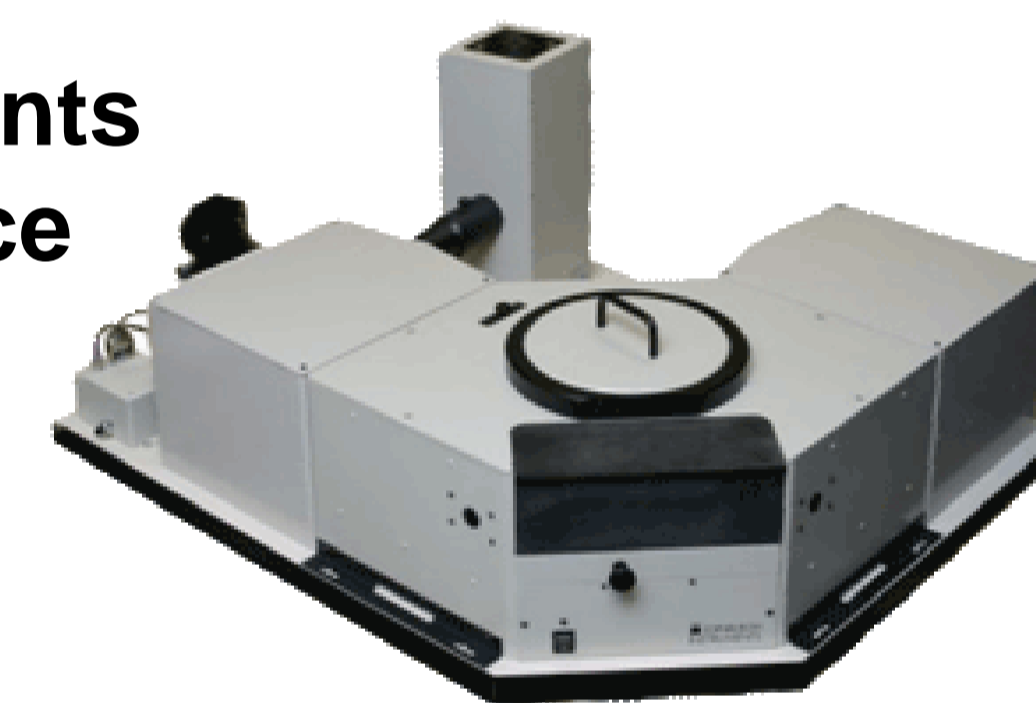
- For NMR experiments we have a Bruker Avance III 400MHz NMR spectrometer. The system includes an inverse broadband probe fitted with a Z-axis gradient and with automatic tuning and matching. The inner coil is optimized for  $^1\text{H}$  and the outer coil can be tuned from  $^{31}\text{P}$  to  $^{97}\text{Mo}$  (and others in between). So X-frequencies are ranging from 162 to 27 MHz.

### Atomic Force Microscopy & Scanning Tunneling Microscopy

- We have two SPM systems a **JSPM-5400** which can be configured as either an atomic force microscope (AFM) or scanning tunneling microscope (STM), and an **MPF3D**, which has a 100 micron closed-loop XY-stage allows for AFM imaging as well as precise sample positioning



### Edinburgh Instruments FLS900 Fluorescence spectrometer



## About QualityNano

QualityNano is an analytical research infrastructure whose purpose is to drive high quality research and testing practices for assessment of the potential risks posed by nanomaterials.

QualityNano will provide Users with access to 15 major European facilities for nanomaterials processing, characterisation and exposure assessment to support their ongoing research in these areas.

Access is via a single application and evaluation process.

QualityNano is able to meet the Users' costs for:

- Research (bench fees and consumables)
- International travel
- Local accommodation while based at the TAF
- A per diem to contribute towards living costs.

Note: TA results must be made publically available via publication / patent / PhD thesis etc.

#### Contact at KIT (TA-Leader):

Dr. A.T.M. Marcelis  
Laboratory of Organic Chemistry  
Wageningen University  
Dreijenplein 86703 HB Wageningen  
The Netherlands  
Phone: +31 (0) 317 482366  
Email: ton.marcelis@wur.nl

#### Proposal submission:

Access is granted via a unified application process via 6-monthly TA call, available on-line under: [www.qualitynano.eu](http://www.qualitynano.eu)

#### Contact (User Office):

Centre for BioNano Interactions,  
University College Dublin,  
Belfield, Dublin 4.  
IRELAND  
Phone: 353 1 716 2459  
Email: [TA@qualitynano.eu](mailto:TA@qualitynano.eu)



Follow @QualityNano



QualityNano is funded by the European Commission  
Grant Agreement No: INFRA-2010-262163