# Welcome to QualityNano Transnational Access (TA)

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

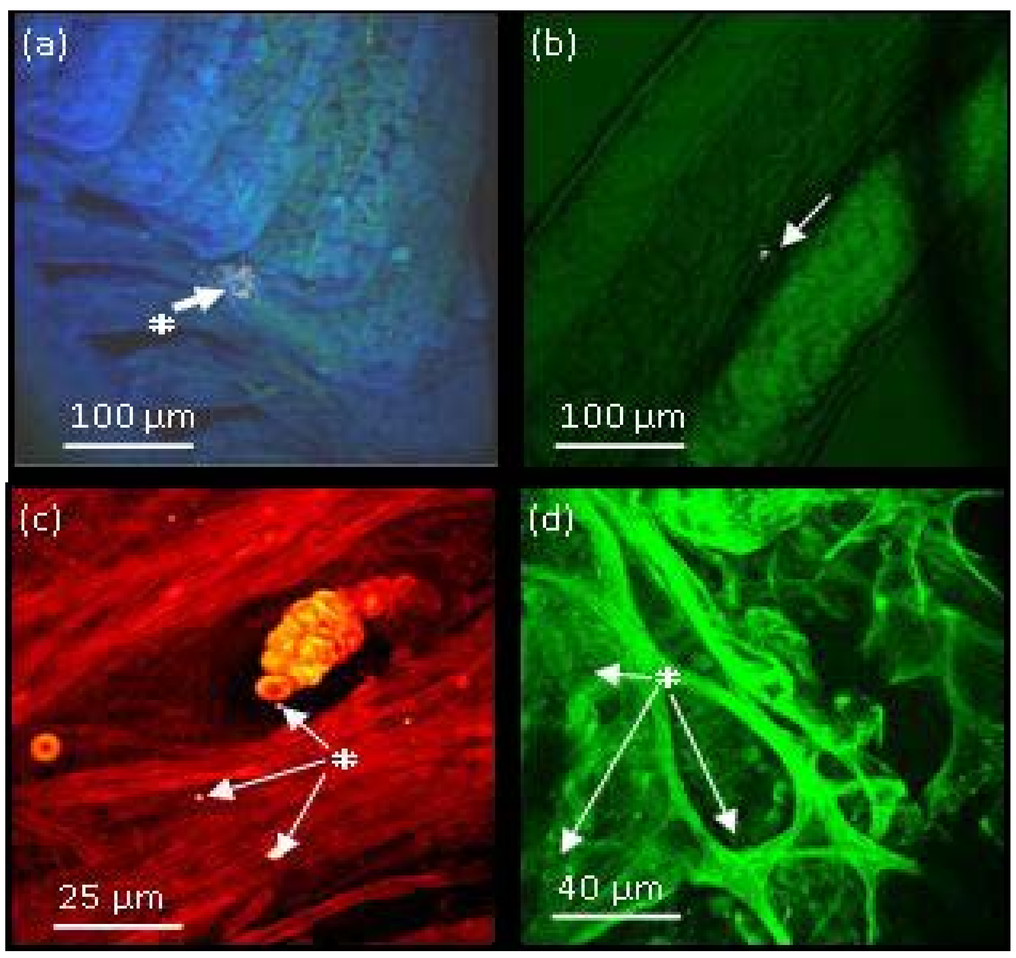
## University of Exeter

## Short technology description:

We offer supported access to our custom built Coherent Anti-stokes Raman scattering (CARS) microscope, a unique system built around a scanning microscope with incubation chamber. CARS is emerging as a powerful tool for biological imaging with advantages over conventional microscopies that include: label-free contrast, increased depth penetration and low phototoxicity.


This system has exceptional capabilities for locating nanoparticles deep within biological samples with sub-cellular resolution. The label free nature eliminates chemical perturbation seen with fluorescent labelling which can modify transport kinetics, cellular uptake and cytotoxicity. CARS is not yet commercially available and we offer our flexible prototype that can be configured to generate label free contrast of nanomaterials including metal oxides, noble metals, carbon nanotubes and polymers.

## Typical Samples & Images:




CARS images of (a) 100nm TiO2 in intact trout gill tissue, (b) 100nm TiO2 in a zebra fish embryo, (c) mouse blood brain barrier following IV dose of polymer nanoparticles, and (d) carbon particles in human lung tissue (* indicates location of nanomaterials).

## Main Features:

☐ Provides mechanistic data regarding the entry route, distribution and fate of various ENPs in biological tissues with 3D sub-cellular resolution at depths of up to 200 microns into intact tissues.

☐ Particles: ZnO, TiO2, CeO, Ag, Au, various forms of carbon, and a range of polymers

## 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 Exeter (TA-Leader):**

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**Proposal submission:**

**Access is granted via a unified application process via 6-monthly TA call, available on-line under: www.qualitynano.eu**

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