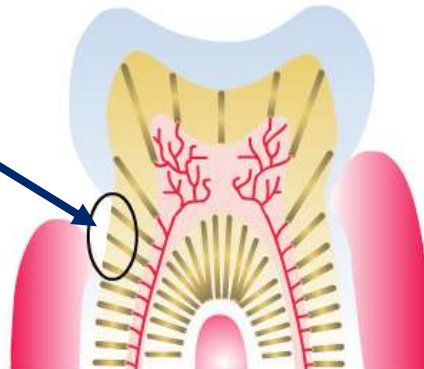
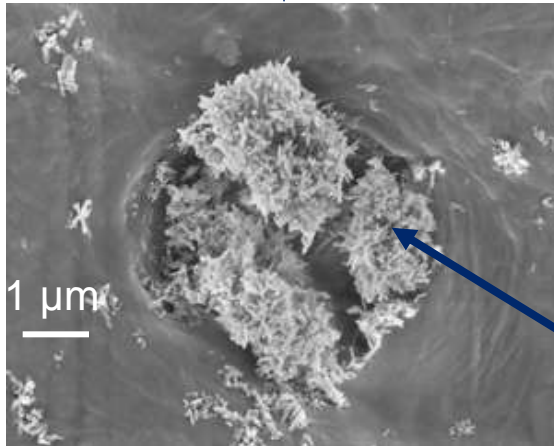
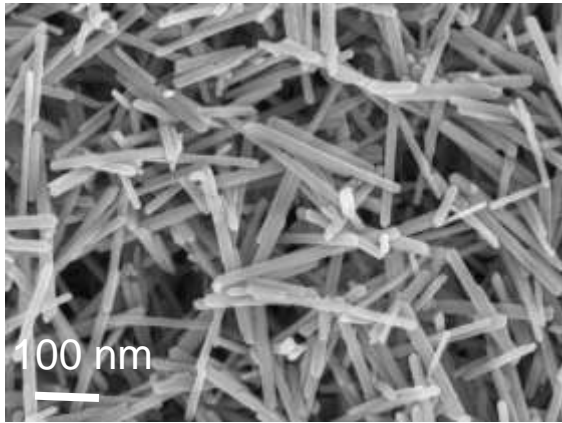




The Institute for Materials Research

School of Process, Environmental and Materials Engineering
(SPEME)



Rik Brydson



Andrew Brown

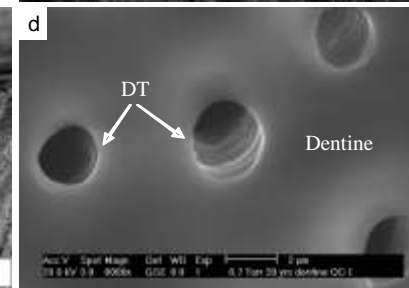
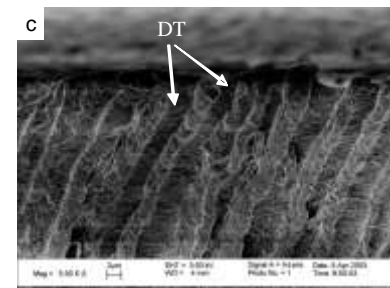
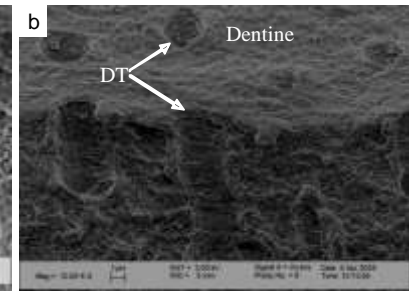
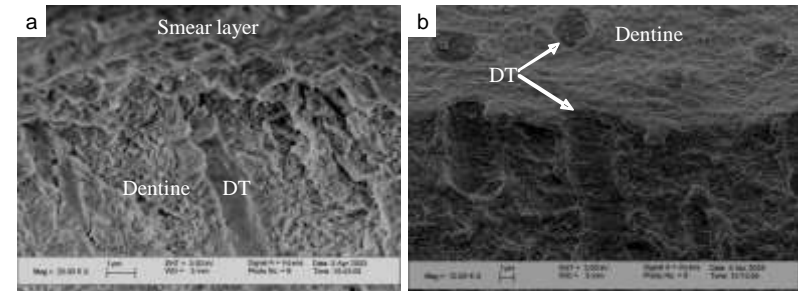


Steven Milne



Girish Kale

New 2.5M Euro
EU Project
ENNSATOX





Prof Rik Brydson
Dr Andy Brown



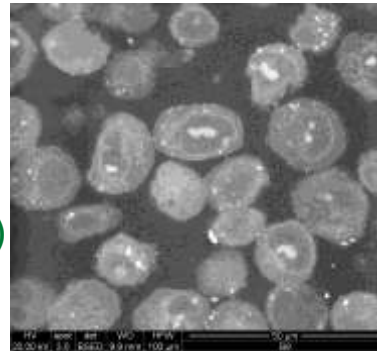
UNIVERSITY OF LEEDS

Electron Microscopes - <http://www.engineering.leeds.ac.uk/imr/lemas/>

Research Facility supported by 3FTEs

- SEM

- Conventional-high resolution
- Variable pressure - WetSEM
- Microanalysis (EDX, WDS, EBSD)
- Dual Beam FIB

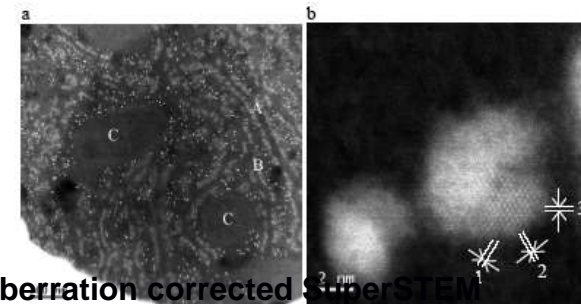


- TEM

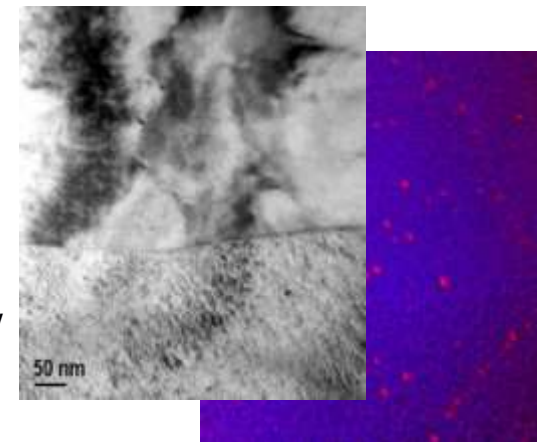
- Cryo + Hot stage, ex-situ cell, TEM/STM
- Analytical (EDX, EELS)

- Links

- EPSRC facility - <http://www.nanotechnology.leeds.ac.uk/lennf/>
- Aberration correct STEM <http://www.superstem.com>



Aberration corrected SuperSTEM
Z contrast images of ferritin mineral core
within human liver biopsy
Probe size < 0.1 nm



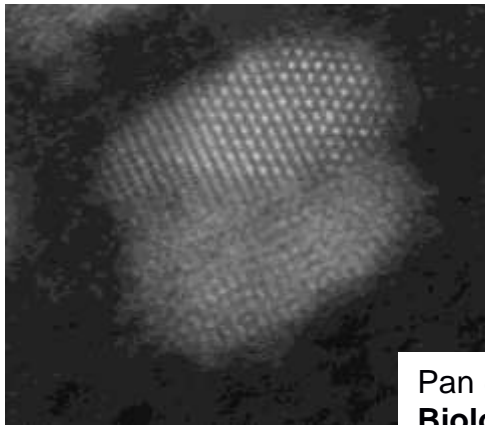
Blue = iron, Red = vanadium



Andy Brown + Nicole Hondow

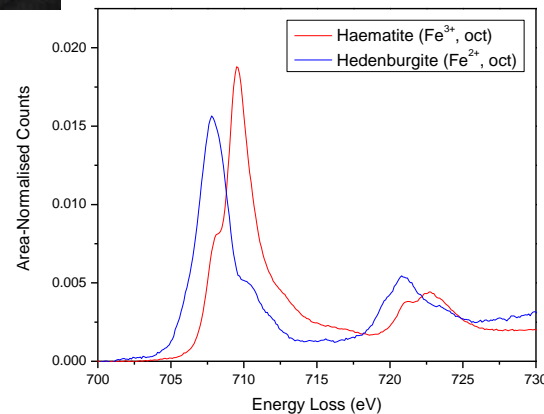
a.p.brown@Leeds.ac.uk

0113 34 32382

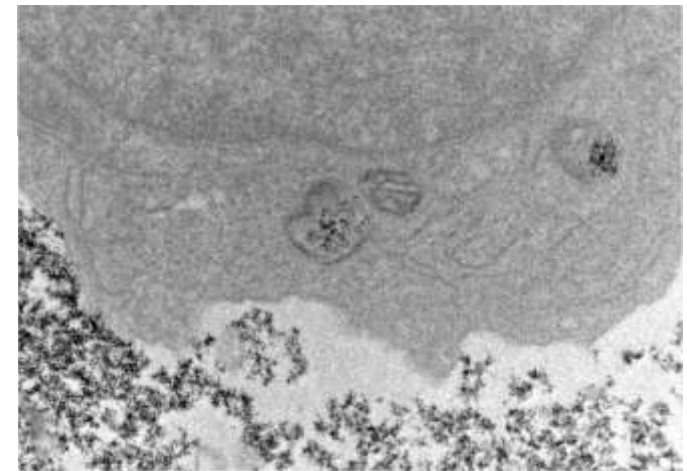


Pan *et al.*, **Journal of Structural Biology**, 166, 22-31, 2009.

Characterisation of nano-particles in natural systems



Pan *et al.*, **Ultramicroscopy**, 110, 1020-1032, 2010.



Singh *et al.*, **Biomaterials**, in-press, 2011.

Synthesis, Characterization and Modelling



UNIVERSITY OF LEEDS

- Ab-initio modelling of structural and electronic data – bulk and surfaces – Dr Andrew Scott

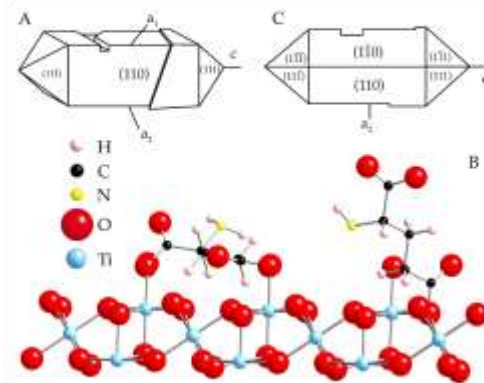


Figure 1.

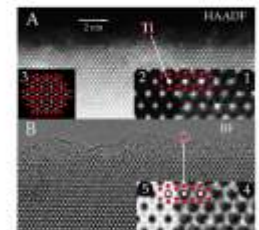


Figure 2.

- Nanoparticle Synthesis – Dr Steve Milne

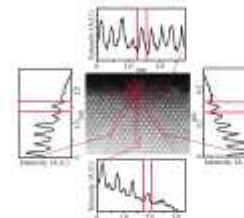
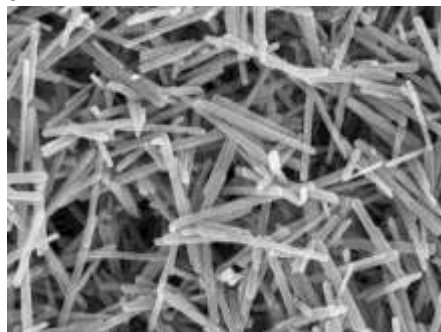


Figure 3.

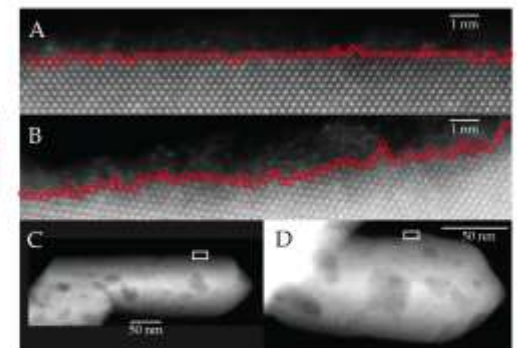


Figure 4.