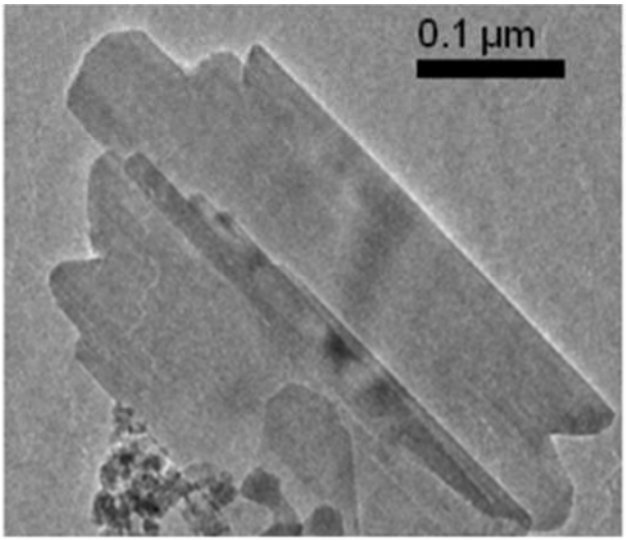
Advanced Materials Research Group
project summary

Project Title	Integrated Molecular Design of Melt-processable Bioresorbable Engineering Nanocomposites for Health-Care (BENcH)
Researcher	Dr Andrew Parsons
Project Summary	Project duration: 01/01/2013 – 31/12/16 Funder: EPSRC Grant value: £1.2M Industrial contributors: TESco Associates, Evonik, Thermofisher Scientific, Promethean Particles This proposal will deliver novel, integrated methodologies for the design and scalable manufacture of next generation resorbable polymer nanocomposites, linking the science and engineering principles which underpin successful processing of such materials. This will enable new smart health-care materials in applications from bone fracture fixation to drug delivery. The methodologies will be optimised on a system comprising novel nanoparticles, selected blends of medical-grade degradable polymer and specifically designed molecular dispersants. Optimised methodologies will be applied at scale on industrial equipment to produce demonstrator resorbable implants with specific structural attributes and degradation timescales. Wider applications include degradable food packaging and products requiring end-of-life disposal. The key novelty of the material system is the use of unique, platelet shaped hydroxyapatite nanoparticles to achieve true nanocomposite properties (see fig). More information on the project can be found here: www.nottingham.ac.uk/BENcH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