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**Post-Doctoral and PhD opportunities in**

**Magnetic Nanocomposites for Biomedical Applications**

**at University College Dublin**

The preparation of nano-scale building-blocks with well-defined properties and surface characteristics[1] is a key requirement for their successful assembly into functional structures.[2] It is anticipated that by improving control over the synthesis and assembly[3] of nanoparticle building blocks it will be possible to produce tailored properties and improved processability. Furthermore, by embedding the nano-constructs in hydrogels it may be possible to control structure on multiple length scales, leading to new magnetically responsive functionalities.[5]

The NMR/Materials Research Group in the School of Chemistry at University College Dublin (<http://www.ucd.ie>) are seeking one Postdoctoral researcher (3 year contract) and two Ph.D. students for a research program on *Magnetic Nanocomposites for Biomedical Applications* funded under the SFI Principal Investigator programme.

Applications should be sent by email, before April 30th 2018, to [dermot.brougham@ucd.ie](mailto:dermot.brougham@ucd.ie) using “Post-Doc Application NANO-COMP” or “Post-Grad Application NANO-COMP” in the subject line, and including CV/publication list/transcripts and grades/names of referees.

1. Stable aqueous dispersions of glycopeptide grafted magnetic nanoparticles of selectable functionality. Heise, Brougham et al. ***Angewandte Chemie Int. Ed.***, 2013, 52, 3164–3167.

2. Water-Soluble Superparamagnetic Magnetite Nanoparticles with Biocompatible Coating for Enhanced Magnetic Resonance Imaging (MRI). Brougham, Mathur et al. ***ACS Nano***, 2011, 5, 6315.

3. Monodisperse magnetic nanoparticle assemblies prepared at scale by competitive stabiliser desorption. Ninjbadgar, Brougham et al. ***J. Mater. Chem. B***, 2015, 3, 8638 - 8643.

4. Hierarchical gold-decorated magnetic nanoparticle clusters with controlled size. Meledandri, Brougham et al. ***ACS Nano***, 2011, 5, 1747. Size selectable nanoparticle assemblies with magnetic anisotropy tunable across the superparamagnetic to ferromagnetic range. Brougham et al. ***Chem. Commun.***, 2016, 52, 13337-13340.

5. Nanoparticle clusters: assembly and control over internal order, current capabilities and future potential. Stolarczyk, Brougham et al. ***Adv. Mater.***, 2016, 28, 5400-5424.