Expertise table

WG1 "Physical Chemistry of fabrication / coating / targeting"

	Names-Group email	Address	Expertise – what you can propose for the WP group	What the group need	Available product to be tested	*What type of nanoparticles? Which are the ligand? Any data on stability in water (pH, salt, duration)*
1	Nguyen TK Thanh ntk.thanh@ucl.ac.uk http://www.ntk-thanh.co.uk	UCL Healthcare Biomagnetic and Nanomaterials Laboratories 21 Albemarle Street, London W1S 4BS & Biophysics Group Department of Physics & Astronomy University College London Gower Street, London WC1E 6BT, UK	-Synthesis, functionalise of magnetic nanoparticles of different chemical composition (metallic, oxides, alloys) of different shapes -Microreactor technology that aims to synthesise monodisperse, reproducible, and large scale iron oxide or core@shell magnetic nanoparticles -Conjugation of CNT and MNPs -Conjugation of anticancer drugs and MNPs -Magnetic measurement (SQUID, hyperthermia)	People have expertise with GMP, regulatory body, clinicians, social scientists	NPs mentioned above to be available on order	Some of our particles stable in wide range of pH 2-12, and up to 2 M NaCl, and stable for at least a few months.

			-Structural and morphological characterization (XRD, Mossbauer spectroscopy, TEM, HRTEM, tomography TEM, STEM, XPS) -DLS, FITR -Live cell microcscopic experiment -Flow cytometry - In vitro cytotoxicity testing (e.g. breast cancer lines) - Haematocompatibility testing: Hemolysis study			
2 3	Sylvie Begin sylvie.begin@ipcms.unistra.fr Delphine Felder Delphine.felder@ipcms.unistra.fr	IPCMS Strasbourg – France	- Synthesis of magnetic oxide NPs with different size, shape and composition by thermal decomposition - Magnetic measurements - Synthesis of dendron molecules of different generations to coat NPs ensuring good colloidal stability and in vivo elimination - functionalization of NPs - relaxivity measurements	- Colloidal stability - Toxicity tests of dendronized NPs - Hyperthermia measurements	- Spherical iron oxide NPs with a mean size of 20 nm coated with dendron molecules - ironoxide nancubes with a mean size of 20 nm coated with dendrons	
4	BeataKalska-Szostko kalska@uwb.edu.pl	Institute of Chemistry, UwB, Hurtowa 1, 15-399 Białystok, Poland	- Synthesis of magnetic oxide NPs with different size, core-shell and multilayered structure - functionalization of NPs - structural and morphology measurements (XRD, TEM, SEM,	- toxicity tests -hyperthermia measurements	-wide range of nanoparticles with various internal composition	

			AFM, …) in collaboration confocal microscopy -Physico-chemical properties (IR, BET, DLS, DSC, TGA, Mossbauer and Raman spectroscopy, …) in collaboration mas spectroscopy			
5	Etelka Tombácz tombacz@chem.u-szeged.hu http://www2.sci.u-szeged.hu/physchem/aquacoll/	University of Szeged Department of Physical Chemistry and Materials Science H-6720 Szeged, Aradi Vt.1. Hungary	- preparation of carboxylated/PEGylated iron oxide nanoparticles (IONPs) with high chemical and colloidal stability for MRI diagnostic and hyperthermia purposes; - products characterized by advanced physicochemical methods (chemical stability (iron leaching), dilution resistance, pH and salt concentration dependent charging and colloidal stability) and some biological tests (cytotoxicity, blood sedimentation, smears); - MRI contrast enhancement at the field strength of 1.5 T (clinical MRI instrument); - hyperthermia efficiency (MagneTherm™)	- magnetic characterization - HR-TEM - cryo-SEM	carboxylated/PEGylated IONPs (10 nm core, low polydispersity)	core-shell products: magnetite core, polycarboxylate shell (poly(acrylic acid), poly(acrylic acid-co-maleic acid), poly(gallic acid), polycarboxylate/ sulfate shell (chondroitin-sulfate) PEGylated polycarboxylated shell (comb-like PEG-copolymer) excellent colloidal stability pH>5 (each) in

						salty medium
6	Theodora Krasia-Christoforou	University of Cyprus, Dpt. of Mechanical and Manufacturing Engineering	- Synthesis of magnetoactive (superparamagnetic) micelles of various diameters stabilized in aqueous solutions having an FexOy magnetic core Fabrication of magnetoactive polymer networks and magnetoactive polymer-based electrospun membranes Fabrication of polymer-based membranes containing Au nanoparticles Characterization: SEM, SEC (polymer molecular weight characterization method), TGA and DSC (thermal properties), dynamic light scattering, UV-Vis, FTIR	- toxicity tests -hyperthermia measurements	Superparamagnetic micelles stabilized in aqueous media Superparamagnetic polymer networks Superparamagnetic electrospun fibrous membranes of various chemical compositions and magnetic content Au-containing electrospun fibrous membranes	
7	Maria Deus Carvalho mdcarvalho@fc.ul.pt	DQB- FCUL Campo Grande, C8 1749-016 Lisboa, Portugal	- Synthesis of magnetic oxide NPs with different sizes and core-shell structure. - Structural and morphological characterization (XRD, TEM, SEM, AFM) -Magnetic measurements (SQUID, AC susceptibility) - Mossbauer spectroscopy - Hyperthermia measurements (Ambrell equipment)	- Colloidal stability - Complementary morphological characterization for core-shell structures - specific coatings - Toxicity tests (although at present they are being performed in Imperial College/ Faculty of Medicine/ Departmen t of Surgery & Cancer) within a common project collaboration.	- Wide range of magnetite nanoparticles - Some well-characterized ferrite nanoparticles	

8	Laurence Motte Laurence.motte@univ-paris13.fr	CSPBAT UMR 7244 CNRS-UP13-SPC Bobigny France	-synthesis of magnetic oxide NPs with different size, shape and composition by direct micellar synthesis and sol-gel method -Synthesis of bifunctional molecules ensuring good colloidal stability and allowing covalent coupling of interest molecules using carbodiimide and click chemistries. -NP Surface functionnalization and Physico-chemical characterization (IR, DLS, TGA, EDX, NMR, Magnetic measurements, …)	- toxicity tests -hyperthermia measurements	Spherical iron oxide NPs with various size from 3 to 20 nm and coated with different ligands ensuring multifunctionalities (targeting, drugs and dyes).	
9	Puerto Morales puerto@icmm.csic.es Lucia Gutierrez lucia@icmm.csic.es	Instituto de Ciencia de Materiales de Madrid, CSIC, C) Sor Juana Inés de la Cruz 3, 28049 Madrid	-Synthesis of nanoscale monodispersed particles and composites using a variety of methods in water, organic media and aerosols. - Colloidal processing routes to improve stability and add extra functionality. - Analysis of the relationships between composition, structure, colloidal and magnetic properties (XR, TEM, IR, TG, DLS, VSM, ICP). - Localization, identification and quantification of magnetic nanoparticles in biosystems (cell uptake, biodistribution after in vivo injection, degradation and transformation)	- toxicity tests - relaxivity measurements - NMR imaging in vivo. - Hypethermia in vivo.	- Monodispersed magnetite nanoparticles with different sizes (5-50 nm) and coating (DMSA, APS, Dextran).	
10 11	Giovanni Baldi baldig@colorobbia.it Costanza Ravagli	COLOROBBIA CONSULTING S.r.l. Ce.Ri.Col. Centro	□ Synthesis of inorganic nanoparticles with controlled size and shape for different applications	□ TEM microscopy □ Toxicity tests □ In vitro and in vivo	□ Inorganic NPs suspensions (Au, Ag, Fe3O4, TiO2,	□

	ravaglic@colorobbia.it	Ricerche Colorobbia Via Pietramarina, 53 50053 SOVIGLIANA, Vinci (FI)	□ NPs functionalisation with organic linkers □ Nano-encapsulation of inorganic cores in polymeric matrices □ Stability studies; formulation evaluation □ Hybrid NPs functionalization with bio-compatible devices (molecules, antibodies, …) □ Fat-soluble drugs encapsulation □ Hyperthermia measurements and characterizations; assessment of in vitro and in vivo experimental set-up. □ Physico-chemical characterization (DLS, ξ_potential, HPLC, TGA-DSC, FEG-SEM/STEM, XRD, ICP-OES, UV-VIS); in collaboration: ICP-MS, Micro-Raman, FTIR, Laser ablation, Confocal microscopy. □ Drug loading estimation □ Scale-up of STERILE NPs suspensions	efficacy trials □ In vivo model assessment □ Thermo-responsive polymers □ New drugs/active principles for loading □ New targeting moieties for functionalization	…) for different applications □ Hybrid Fe3O4 based polymeric coated NPs, stable in water/culture media/serum □ Various targeted NPs with different moieties	
12	Maria Francesca Casula casulaf@unica.it	Department of Chemical and Geological Sciences University of Cagliari 09042 Monserrato (CA) ITALY	Synthesis of magnetic iron oxide and doped ferrite NPs with different size, and related clusters. Physico-chemical characterization, including: > conventional (XRD, TEM,...) and advanced (X-Ray absorption spectroscopy, upon synchrotron beamtime approval) structural characterization >Textural characterization (N2	-hyperthermia measurements -MRI imaging -toxicity tests -Magnetic characterization	-Spherical nanoparticles with different size; - Cubic nanoparticles around 50 nm dispersed in gel; -nanoparticle clusters	

			physisortpion, EM techniques, He-stereopicnometry, FT-IR spectroscopy) >Chemical and Thermal analysis >Dynamic light Scattering			
13	Sofia Costa Lima slima@ff.up.pt	Requimte/Department of Chemistry Faculty of Pharmacy University of Porto R Jorge Viterbo Ferreira, 228 4050-313 Porto Portugal	- production of liposomes or polymeric nanoparticles as delivery system for magnetic nanoparticles - functionalization of the delivery systems with sugars or proteins/antibodies -physico-chemical characterization (TEM, Cryo-SEM, DLS, ITC, FTIR, flow cytometry, confocal microscopy…) - study nanoparticle/cell interaction - cellular cytotoxic studies	Magnetic nanoparticles	pH sensitive liposomes or polymeric nanoparticles Several cell lines (macrophages, fibroblasts, colon and breast cancer cell lines)	
14	Maite Insausti maite.insausti@ehu.es	Science and Technology Faculty, 48940 Leioa, UPV/EHU.	- Synthesis of magnetite and ferrite NPs with sizes in the 4 – 20 nm range. Core-shell structures. - Functionalization with polimeric cores and silanes and RGD and fluorochrome attaching. - Structural and morphological characterization (DRX, TGA, IR, DLS, TEM).	- Toxicity test	- Functionalized NPs with different sizes and compositions.	

			- Magnetic properties (M vs T, M vs H, Ferromagnetic Electron Spectroscopy).			
15	Ladislau Vekas vekas.ladislau@gmail.com	Romanian Academy-Timisoara Branch, Center for Fundamental and Advanced Technical Research Mihai Viteazul Str. 24 300223 Timisoara, Romania	-Synthesis of iron oxide (magnetite) nanoparticles (MNP) by chemical co-precipitation procedure (mean size 5 to 10 nm) -Biocompatible hydrophobic and hydrophilic coating of MNPs with carboxylic acids (lauric, myristic and oleic acid) -High colloidal stability water based magnetic fluids (ferrofluids) (saturation magnetization up to 300 G) -High colloidal stability magnetic fluids with nonpolar and polar organic carriers (over 50 different carriers; saturation magnetization up to 1200 G) -(HR)TEM,DLS, SLS, VSM, SAXS (collab), SANS (collab), rheo- and magnetorheological characterization of magnetic nanoparticles and magnetic fluids -Large scale synthesis of surface	-toxicity tests -hyperthermia measurements	-Biocompatible surface coated magnetic nanoparticles -Biocompatible water based magnetic fluids -Magnetic fluids with organic carriers-primary materials for biocompatible magnetoresponsive nanocomposites	

			coated magnetic nanoparticles (50-100 g/batch) and magnetic fluids (liter range)			
16	Esther Amstad Esther.amstad@epfl.ch	Ecole Polytechnique Federale de Lausanne (EPFL) EPFL-STI-IMX-SMAL, station 12 CH-1015 Lausanne Switzerland	-Sterically stabilized iron oxide nanoparticles (5-15 nm in diameter) -Iron oxide nanoparticles embedded in hydrogel microparticles -Iron oxide nanoparticles embedded in vesicles -AC magnetic field generator, TEM, DLS, TGA	Magnetic characterization	-Iron oxide nanoparticles -Iron oxide nanoparticles embedded in hydrogel microparticles and microcapsules	
17	Petri Papaphilippou papaphilippou.petri@ucy.ac.cy	University of Cyprus, School of Engineering, Department of Mechanical and Manufacturing Engineering,	- Synthesis of polymer-based magneto-responsive materials and pH-responsive drug nanocarriers. - Fabrication of polymer micelles that can further be used as nanocontainers for the encapsulation and stabilization of magnetic iron oxide nanoparticles. - Preparation of magneto-responsive	- magnetic and hyperthermia measurements - toxicity tests	- Superparamagnetic polymer micelles stabilized in aqueous solution (highly stable in high salt concentrations). - Superparamagnetic	

		Nicosia, Cyprus	polymer networks and magneto-responsive polymer-based electrospun membranes. - Physical-chemical characterization: SEM, SEC, TGA and DSC, dynamic light scattering, UV-Vis, FT-IR.		polymer-based networks and electrospun membranes.	
18	Eduardo Fernandez-Megia ef.megia@usc.es	CIQUS Santiago de Compostela Spain	- Synthesis of dendrons, dendrimers and PEG-dendritic block copolymers of different generations and structures. - Preparation of core cross-linked dendritic nanoparticles coated with PEG (30-100 nm). - Functionalization of dendrimers and NP with cations, anions and ligands of biological interest.	- Collaboration with groups having complementary expertise.	- Dendrimers and and PEG-dendritic block copolymers. - Various structures and generations. - High stability in water, wide range of pH and ionic strength.	
19	Teresa Pellegrino tresa.pellegrino@iit.it	Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genova (Italy)	- Synthesis of nanocubes shaped at different cube edge of magnetite, Co and Mn ferrites -Synthesis of dumbbell heterostructures comprising a magnetic materials and a plasmonic nanocrystals - Procedure for growing thermo-responsive or pH responsive shell at	- Mossbauer technique -Electron paramagnetic spectroscopy; -SQUID measurements at high frequency	Superparamagnetic /ferromagnetic nanocubes stabilized in aqueous media (highly stable in high salt concentrations) pH or thermo-responsive polymer	

			the surface of magnetic nanomaterials -Procedure based on ligand exchange or polymer coatings for stabilizing magnetic nanoparticles -Characterization: SEM, SEC (polymer molecular weight characterization method), TGA, DLS, UV-Vis, FTIR and SAR and relaxivity measurements	-magnetophoresis	functionalized with magnetic nanoparticles	
20	Heinrich Hofmann heinrich.hofmann@epfl.ch	Powder Technology Laboratory, Institute of Materials, Ecol Poytechnique Federale de Lausanne, EPFL, CH-1015 Lausanne	Syntesis of iron oxide nanoparticles with sizes between 8 and 25 nm, core shell structure, particle characterisation, Measurement of SLP, Coating of NP, Colloidal stability characterisation	Magnetic characterisation, Toxicity measurement	Iron oxide Nanoparticles with different organic or inorganic coating	
21	Rodica Turcu rodica.turcu@itim-cj.ro	National Institute for Research and Development of Isotopic and Molecular Technologies, 67-103 Donat Str., 400293, Cluj-Napoca, Romania	-Synthesis of iron oxide nanoparticles and clusters of iron oxide nanoparticles by thermal decomposition and solvothermal methods -High magnetization clusters of iron oxide nanoparticles with biocompatible hydrophilic coating (saturation magnetization 40-60 emu/g) -Functionalized core-shell magnetic nanostructures: single core iron	-toxicity tests -hyperthermia measurements	-Magnetic clusters with biocompatible hydrophilic coating (mean size 50 – 100 nm) -Biocompatible polymer coated iron oxide nanoparticles -Magnetic nanogels	

			oxide nanoparticles or multi-core nanoparticle clusters coated with biocompatible polymers -Magnetic nanogels -Characterization methods: X-ray Photoelectron Spectroscopy (XPS), atomic force microscopy (AFM), X-ray diffractometry (XRD), FTIR, UV-Vis, Raman spectroscopy, VSM, isothermal titration calorimetry (ITC), TEM (collab.), SEM (collab.), SAXS (collab.), SANS (collab.)			
22	MC member Vlasta Zavisova zavisova@saske.sk Peter Kopcansky kopcan@saske.sk Others Martina Koneracka konerack@saske.sk Milan Timko timko@saske.sk Martina Kubovcikova kubovcikova@saske.sk Iryna Antal Iryna.antal@saske.sk Matus Molcan molcan@saske.sk	Institute of Experimental Physics, Slovak Academy of Sciences, Watsonova 47, 04001 Kosice, Slovakia	Synthesis of magnetite NPs with different size and shape. Stabilization/functionalization of prepared NPs by - polymer of amino acids, polysaccharides, oleate-BSA, lauric acid, etc. NPs and drug encapsulation in thermoresponsive biodegradable polymers. **MAGNETOSOMES** (bacterial magnetic nanoparticles): - type of bacteria from which the particles are isolated: Magnetospirillum Magnetotacticum sp. AMB-1, - particles: magnetite crystals surrounded by a phospholipid bilayer, - magnetosome particles are arranged by a membrane in	- HRTEM, SEM analysis - toxicity tests - hemocompatibility tests	- spherical magnetite nanoparticles - functionalized magnetite nanoparticles by biocompatible materials - magnetosomes from magnetotactic bacteria chainlike or individual	

			the form of chains (more than 20 magnetosomes per chain, but there is a possibility of their shortening by sonication process), - size distribution of magnetosomes: 40 – 60 nm, - sample form: particles dispersed in the buffer (HEPES) Magnetic measurements (VSM and SQUID), Dynamic Light Scattering, Differential Centrifugal Sedimentation, Hyperthermia effect in NPs (AC magnetic field up to 10 kA/m, frequency up to 1 MHz).			
23	Sharali Malik sharali.malik@kit.edu	Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Germany.	KIT hosts the Karlsruhe Nano Micro Facility (KNMF). **KNMF is a high-tech platform for structuring and characterising a multitude of functional materials at the micro- and nanoscale -** http://www.knmf.kit.edu/ The Karlsruhe Nano Micro Facility (KNMF) is focused on providing open and for public work free access to multimaterial state-of-the-art micro and nanotechnologies for users from industry and academia,			

			either national or international. Annual deadlines for the submission of proposals are January 15 and June 30. Applications for urgent and commercial projects can be submitted at any time (» submission).			
24	Christine Ménager christine.menager@upmc.fr Jerôme fresnais jerome.fresnais@upmc.fr Vincent Dupuis vincent.dupuis@upmc.fr	Laboratoire Phennix Université Pierre et Marie Curie, Paris, France	- Synthesis of magnetic oxide NPs by co-precipitation and polyols process. - Functionalization with biopolymer (dextran), ligands (citrate, ADMS), of polymers (poly(sodium acrylate) - Control of the dispersion to obtain ferrofluid. - Control of electrostatic interactions between nanoparticles and polyelectrolytes - Magnetic core-shell $\gamma Fe_2O_3@SiO_2$ - Magnetic hybrid systems (liposomes, biopolymer beads) - Magnetic measurement (VSM, SQUID, SAR, NMR relaxometry) - Structural measurements (SLS, DLS, SAXS, SANS)	- Toxicity tests - Thermal probes for local temperature measurements	- ferrofluid with different kind of oxide, different coating, - core-shell particles with a mean diameter around 35 nm - magnetic liposomes (250 nm). - Magnetic spherical or elongates aggregates from electrostatic complexation (from 30 nm to 100 µm)	
25	Daniel Horak horak@imc.cas.cz	Institute of Macromolecular Chemistry AS CR, Heyrovskeho Sq. 2, 162 06 Prague 6,	Synthesis of superparamagnetic nanoparticles (iron oxides, ferrites) by thermal decomposition and precipitation, different sizes, different coatings of the particles	- experiments with cells, animals, hyperthermia measurement	particles differing in size and coatings	

		Czech Republic	with polysaccharides, amino acids, polymers, silica, etc. Physico-chemical characterization of the particles.			
26	Aleksander Bilewicz a.bilewicz@ichtj.waw.pl	Institute of Nuclear Chemistry and Technology Dorodna 16, 03-195Warszawa, Poland	Synthesis of core shell nanoparticles, including nanozeolite, iron oxide nanoparticles coated with gold layer. Labeling of nanoparticles with radioisotopes (^{99m}Tc, ^{131}I, ^{225}Ac and ^{221}At). Particle characterisation, SEM, DLS, termogravimetry. Functionalisation of nanoparticles with peptides, antibodies and antibody fragments (nanobodies, affibodies). Cell studies, receptor affinity and cytotoxicity.	magnetic and hyperthermia measurements	Magnetic core shell nanoparticles funtionalized by peptide (substance- P) and antibody (trastuzumab).	
27	Olivier Jordan Olivier.Jordan@unige.ch	School of pharmaceutical sciences, University of Geneva 1211 Genève	(i) In situ forming magnetic implants for local hyperthermia, including preclinical proof-of-principle (ii) Combination of the above with local, controlled drug release (iii) Toxicity and drug-targeting cell-based assays	Organic or water-dispersible high SLP spions Preclinical/clinical testing	Injectable spions formulations for soft tumor or bone tumor treatment	
28	Claudio Sangregorio csangregorio@iccom.cnr.it	C.N.R. ICCOM 50019 Sesto f.no, Firenze, Italy	Synthesis of Magnetic and magnetic-Plasmonic nanoparticles with different architectures and geometries (including alloy, core/shell and heterodimers); Surface functionalization with organic ligands Morphological and Structural characterization Magnetic (SQUID, PPMS, High	Colloidal stability test Toxicity tests	Functionalized NP with different size, shape, composition and coating. Core-shell NPs Magnetic-Plasmonic nanostructures	

			Frequency AC, Ferromagnetic Resonance), magneto-optical (MOKE, MCD) and hyperthermic characterization (also on cells)			
29	Sophie Laurent Sophie.laurent@umons.ac.be	General, Organic and Biomedical Chemistry, NMR and Molecular Imaging Lab, UMONS, Mons, Belgium	Synthesis and physico-chemical characterization of magnetic nanoparticles, functionalization for cellular labeling and molecular imaging, magnetic applications. Equipment: mass spectro - meter, spectro-fluorimeter, UV/VIS and infra-red spectrometer, photon correlation spectroscopy (PCS), zeta potential, TEM, lyophilizers, NMR spectrometers Avance 500 MHz and 300 MHz, field cycling relaxometer, two NMR Minispec relaxometers working at 20 MHz and 60 MHz, hyperthermia … In vitro tests on cells and in vivo tests on small animals by MRI.	XPS, HR and cryo-TEM, Mossbauer spectroscopy	Functionalized NP with different sizes or coatings, …	

WG1 State of the Art – most important publications

1) Blanco-Andujar, C., Southern, P., Ortega, D., Nesbitt, S.A., Pankhurst, Q.A., **Thanh, N.T.K**.* (2015) High performance multi-core iron oxide nanoparticles for magnetic hyperthermia: microwave synthesis, and the role of core-to-core interactions. *Nanoscale*.. **7**: 1768-1775 *Impact Factor 6.7*. ***Open Access***
2) T. Q. Huy, P. V. Chung, N. T. Thuy, C. Blanco-Andujar, **N. T. K. Thanh** (2014) Protein A conjugated iron oxide nanoparticles for separation of Vibrio cholerae from water samples. *Faraday Discussion*. 175: 73 - 82***. Open Access*** . ***Impact factor 4.2.***
   a. Hervault and **Thanh, N. T. K*** (2014) Magnetic Nanoparticles-Based Therapeutic Agents for Thermo-Chemotherapy Treatment of Cancer. *Nanoscale*, **6*:*** 11553-11573***. Open Access***. ***Impact factor 6.7***
3) **Thanh, N. T. K***, N. Maclean, S. Mahiddine. (2014) Mechanisms of Nucleation and Growth of Nanoparticles in Solution. Chemical Reviews. **114:** 7610–7630. ***Open Access. Impact factor 45.7***
4) Green, L.A.W., Thuy, T.T., Mott D., Maenosono, S., **Thanh, N.T.K.***, (2014). Multicore magnetic FePt nanoparticles: controlled formation and properties . *RSC Advances*. ***Open Access*** **4**: 1039 - 1044
5) L. A. W. Green and **N. T. K. Thanh*** (2014) High pressure synthesis of FePt nanoparticles with controlled morphology and Fe content. *RSC Advances*. ***Open Access*** **4**: 1168-1173
6) Dunn, D. Dunn, M. Lim, C. Boyer, **N. T. K. Than**h. (2014) Recent Developments in the Design of Nanocomposites for Photothermal and Hyperthermia Induced Controllable Drug Delivery. *Royal Society of Chemistry Specialist Periodical Report on Nanoscience*. **2**: 225-254.
7) R Hachani, M. Lowdell, M. Birchall and **N. T. K. Thanh*** (2013), Tracking stem cells in tissue-engineered organs using magnetic nanoparticles. *Nanoscale.* ***Open Access*** **5**: 11362 - 11373. ***Impact factor 6.7***. **HOT ARTICE**
8) Y. Wang, C. Blanco-Andujar, Z. Zhi, P.W. So , **N. T. K. Thanh**, J. C. Pickup (2013) Multilayer nanocoatings incorporating superparamagnetic nanoparticles for tracking of pancreatic islet transplants with magnetic resonance imaging. *Chem Comm*. ***Open Access*** **49**: 7255-7257 . ***Impact Factor 6.7***
9) M. Edmundson, **N.T.K Thanh**, B.Song (2013)Nanoparticles based stem cell tracking in regenerative medicine, Invited Review. *Theranostics.* ***Open Access*** **3**: 373-382***. Impact Factor: 7.8***

10) C. Blanco-Andujar, D. Ortega, Q. A. Pankhurst, **N.T. K. Thanh*** (2012) Elucidating the morphological and structural evolution of iron oxide nanoparticles formed by sodium carbonate in aqueous medium. *Journal of Material Chemistry.* ***Open Access*** **22**: 12498-12506 ***Impact Factor: 6.1 . Citation: 9 by 6/2014***

11) L. Yildirimer, **N.T.K. Thanh*,** M. Loizidou and A.M. Seifalian, (2011) Toxicological considerations of clinically applicable nanoparticles. *Nano Today*. **6:** 585-607. ***Impact Factor: 19.2. Citation: 57 by 2/2015***

12) K. Stojak, H. Srikanth, P. Mukherjee, M. H. Phan and **N. T. K. Thanh*** (2012) Size- and Shape-Variant Magnetic Nanoparticles: Synthesis and Characterisation for Biomedical Applications, In: "Complex-Shaped Metal Nanoparticles:Bottom-Up Syntheses and Applications ". Ed Tapan K. Sau and Andrey L. Rogach. Willey. p 183-214.

13) B. Kozissnik, L. A. W. Green, K. Chester, **N. T. K. Thanh*** (2012) Strategy for functionalisation of magnetic nanoparicles for biological targets. In: "Magnetic nanoparticles: from fabrication and clinical applications". Ed. **N.T.K. Thanh**, CRC Press, Taylor and Francis, Boca Raton London New York. p 129-150**.**

14) T. T. Thuy, S. Maenosono, **N. T. K. Thanh*** (2012), Next Generaion Magnetic Nanoparticles for biomedical application. In: "Magnetic nanoparticles: from fabrication and clinical applications". Ed. **N.T.K. Thanh**, CRC Press, Taylor and Francis, Boca Raton London New York, p 99-128**.**

15) T.T. Thuy, D. Mott, **N.T.K. Thanh** and S. Maenosono (2011) One-pot Synthesis and Characterization of Well Defined Core@Shell Structure of FePt@CdSe Nanoparticles, *RSC Adv* **1**: 100-108. Top ten most accessed articles in July-August 2011.***Citation: 8 by 6/2014***

16) X. Meng, H. Seton, L.T. Lu, I. Prior, **N.T.K. Thanh***, B. Song (2011) Tracking transplanted neural progenitor cells in spinal cord slices by MRI using CoPt nanoparticles as a contrast agent. *Nanoscale,* **3:** 977-984*. FRONT COVER.* ***Impact Factor: 6.7 Citation: 23 by 2/2015***

17) Robinson, L. D. Tung, S. Maenosono, C. Walti, **N.T.K. Thanh*** (2010) Synthesis of core-shell gold coated magnetic nanoparticles and their interaction with thiolated DNA. Nanoscale, **2:** 2624 – 2630. ***Impact Factor: 6.7 Citation: 50 by 2/2015***

18) **N.T.K. Thanh*** and L.A.W. Green (2010) Functionalisation of nanoparticles for biomedical applications. Nano Today, **5**: 213-230. ***Impact Factor : 19.2 . Citation: 191 by 2/2015.*** **Highly Cited**

19) C. Banco-Andujar, L.D. Tung and **N.T.K. Thanh*** Synthesis of Nanoparticles for Biomedical Applications. Invited Review, Annu. Rep. Prog. Chem., Sect. A: Inorg. Chem. 2010, **106**, 553-568.***Citation: 23 by 2/2015***

31) P. K. Verma, A. Giri, **N.T.K. Thanh***, T.D. Le, O. Mondal, M. Pal, S. K. Pal (2010) Superparamagnetic Fluorescent Nickel-Enzyme Nanobioconjugates: Synthesis and Characterization of a Novel Multifunctional Biological Probe. *Journal of Material Chemistry*, **20**: 3722-3728. ***Impact factor: 6.1.Citation: 11 by 6/2014***

32) Q.A. Pankhurst, **N.T.K. Thanh**, S.K. Jones and J. Dobson (2009) Progress in Applications of Magnetic Nanoparticles in Biomedicine. *Journal of Physics D: Applied Physics.* Invited Topical Review. 42, 224001 . ***Citation: 448 by 2/2015.*** **Highly Cited**

33) Robinson, S. Zacchini, L.D. Tung, S. Maenosono, **N.T.K. Thanh*** (2009). Synthesis and Characterization of Magnetic Nanoalloys from Bimetallic Carbonyl Clusters, *Chemistry of Materials*, **13**: 3021-3026. ***Impact factor: 8.5. Citation: 51 by 2/2015***

34) L. T. Lu, L. D. Tung, J. Long, D.G. Fernig and **N.T. K. Thanh*** (2009) Facile and Green Synthesis of Stable, Water-soluble Magnetic CoPt Hollow Nanostructures Assisted by Multi-thiol Ligands. *Journal of Material Chemistry*, **19**: 6023-6028 ***Impact factor: 6.1. Citation: 35 by 2/2015***

35) Robinson, C. Alexander, L.D. Tung, D.G. Fernig and **N.T.K. Thanh*** (2009) Fabrication of water-soluble magnetic nanoparticles using thermo-responsive polymers. *Journal of Magnetism and Magnetic Materials*. **321**: 1421-1423. ***Citation: 16 by 6/2014***

36) Robinson, M. Volk, L.D. Tung. G. Caruntu, N. Kay and **N.T.K. Thanh*** (2009) Synthesis of Co nanoparticles by pulsed laser irradiation of cobalt carbonyl in organic solution. *Journal of Physical Chemistry C,* **113**: 9497-9501. ***Impact factor: 4.8, Citation: 15 by 6/2014***

20) D. Ung, L.D. Tung, G. Caruntu, D. Delapostas, Y. Alexandrous, I. Prior, **N.T.K. Thanh*** (2009) Variant shape growth of nanoparticles of metallic Fe-Pt, Fe-Pd and Fe-Pt-Pd alloys . *CrystEngComm,* **11:** 1309-1316. ***Impact Factor: 3.9. Citation: 27 by 3/2015***

21) L. T. Lu, I. Robinson, L. D. Tung, B. Tan, J. Long, A. I. Cooper, D. G. Fernig, **N. T. K. Thanh*** (2008) Size and shape control for water-soluble magnetic cobalt nanoparticles using polymer ligands .*Journal of Materials Chemistry*, **18**: 2453 - 2458 ***Impact factor: 6.1. Citation: 35 by 2/2015***

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