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* **Research Interests**
* **Polymeric microneedles as a painless hypodermic parenteral application.**
* **Targeted polymeric nanoparticles for the treatment of cancer**
* **Polymeric nanoparticles for the enhanced delivery of antibiotics towards intracellular infections**
* **Education and Work History**
* **September 2012 –Present, Assistant professor at the faculty of Pharmacy, University of Jordan.** Course taught includes theoretical and Practical courses of Physical Pharmacy, physicochemical principles, Pharmaceutical Statistics, Compounding of dosage forms.
* **July 2018 – September 2018, visiting researcher at Queen’s University Belfast,** The research focuses on the formulation of microneedles incorporating nanoparticles for the transdermal delivery of hydrophobic drugs.



* **July 2017-August 2017, Visiting Researcher at the School of Pharmacy University of Sydney and Centenary Institute, NSW, Australia.** The research involves the investigation of the internalization and antimycobacterial activity of antibiotics loaded polymeric nanoparticles.
* **April 2015-August 2015, Visiting Researcher at the University of Sydney and Centenary Institute, NSW, Australia.** The research involves the formulation and evaluation of the antimycobacterial activity of dual therapeutic modality utilizing polymeric nanoparticles. The work was presented as an oral talk in an international conference…see below
* **Oct 2008 - September 2012, PhD in Drug delivery and Biomaterials, Queen’s University Belfast.**  PhD study was mainly about the optimization of drug-loaded polymeric nanoparticles to enhance their antibacterial and antitumour effects. The PhD study examined the development of novel drug-loaded nanoparticle formulations and their evaluation in photodynamic therapy for the treatment of cancer, and in the treatment of infectious diseases caused by *Pseudomonas aeruginosa*. In case of photodynamic therapy, the nanoparticles were surface functionalized with an antibody to enhance the targeting and anticancer effect of the photosenstiser-loaded polymeric nanoparticles. Antibiotics loaded polymeric nanoparticles were functionalized with an enzyme that can degrade the extracellular DNA that is overexpressed in the cystic fibrosis sputum. This enhanced the penetration of the released antibiotic from the nanoparticles.



* **September 2006- September 2008, R&D formulation scientist at Hikma Pharmaceuticals, PLC, Amman, Jordan.** This work was mainly including the first step in the generic product development for various dosage forms including tablets, capsules, topical medications, and syrups. Preformulation studies such as drug excipient compatabilities, drug exposure test. Formulation of generic products, Stabilities studies, bioequivalence studies of pharmaceutical products. Regulatory affairs for registration of pharmaceutical products.
* **October 2002- September 2006, BSc in Pharmacy. University of Jordan, Amman, Jordan.** Courses studied includes Physical Pharmacy, Compounding of the dosage forms, Industrial Pharmacy, Biochemistry, Organic chemistry, Biopharmaceutics, Pharmacology, Pharmacognosy. Phytochemistry.
* **Publications:**
* **Alginate modified-PLGA nanoparticles entrapping amikacin and moxifloxacin as a novel host-directed therapy for multidrug-resistant tuberculosis ,** Sharif Abdelghany, Thaigarajan Parumasivam, Angel Pang, Ben Roediger, Patricia Tang, Kristina Jahn, Warwick John Britton, Hak-Kim Chan, , Journal of Drug Delivery Science and Technology (2019), 52, 642-651. <https://doi.org/10.1016/j.jddst.2019.05.025>.
* **Nanosuspension-Based Dissolving Microneedle Arrays for Intradermal Delivery of Curcumin,** Sharif Abdelghany, Ismaiel A Tekko, Lalitkumar Vora, Eneko Larrañeta, Andi Dian Permana, Ryan F Donnelly, , Pharmaceutics (2019), 11, 308, https://doi.org/10.3390/pharmaceutics11070308.
* **Carageenan-stabilised chitosan alginate nanoparticles loaded with ethionamide for the treatment of tuberculosis.** Sharif Abdelghany, Maha Alkhawaldah, Hatim AlKhatib, 2017, Journal of Drug Delivery Science and Technology, 39, 442-449.
* **Dry powder inhalable formulations for anti-tubercular therapy.** T Parumasivam, RYK Chang, S Abdelghany, TT Ye, WJ Britton, HK Chan. 2016. Advanced drug delivery reviews 102, 83-101.
* [**Targeting Siglecs with a sialic acid–decorated nanoparticle abrogates inflammation**](https://scholar.google.com.au/citations?view_op=view_citation&hl=en&user=koKPU9UAAAAJ&citation_for_view=koKPU9UAAAAJ:IjCSPb-OGe4C)**.** Shaun Spence, Michelle K Greene, François Fay, Emily Hams, Sean P Saunders, Umar Hamid, Marianne Fitzgerald, Jonathan Beck, Baljinder K Bains, Peter Smyth, Efrosyni Themistou, Donna M Small, Daniela Schmid, Cecilia M O’Kane, Denise C Fitzgerald, Sharif M Abdelghany, James A Johnston, Padraic G Fallon, James F Burrows, Daniel F McAuley, Adrien Kissenpfennig, Christopher J Scott. Science translational medicine. 2015. 7 (303)
* [**Antimicrobial efficacy of tobramycin polymeric nanoparticles for Pseudomonas aeruginosa infections in cystic fibrosis:** Formulation, characterisation and functionalisation with dornase alfa (DNase)](https://scholar.google.com.au/citations?view_op=view_citation&hl=en&user=koKPU9UAAAAJ&citation_for_view=koKPU9UAAAAJ:UeHWp8X0CEIC). Jill Deacon, Sharif M Abdelghany, Derek J Quinn, Daniela Schmid, Julianne Megaw, Ryan F Donnelly, David S Jones, Adrien Kissenpfennig, J Stuart Elborn, Brendan F Gilmore, Clifford C Taggart, Christopher J Scott. Journal of Controlled Release. 2015. 198, 55-61
* **Design of polymeric nanoparticles for enhanced activity against cancer and infectious diseases, PhD thesis.** 2012, Queen’s University Belfast.
* **Enhanced antitumor activity of the photosensitizer meso-Tetra(N-methyl-4-pyridyl) porphine tetra tosylate through encapsulation in antibody-targeted chitosan/alginate nanoparticles**, [Abdelghany SM](http://www.ncbi.nlm.nih.gov/pubmed?term=Abdelghany%20SM%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Schmid D](http://www.ncbi.nlm.nih.gov/pubmed?term=Schmid%20D%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Deacon J](http://www.ncbi.nlm.nih.gov/pubmed?term=Deacon%20J%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Jaworski J](http://www.ncbi.nlm.nih.gov/pubmed?term=Jaworski%20J%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Fay F](http://www.ncbi.nlm.nih.gov/pubmed?term=Fay%20F%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [McLaughlin KM](http://www.ncbi.nlm.nih.gov/pubmed?term=McLaughlin%20KM%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Gormley JA](http://www.ncbi.nlm.nih.gov/pubmed?term=Gormley%20JA%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Burrows JF](http://www.ncbi.nlm.nih.gov/pubmed?term=Burrows%20JF%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Longley DB](http://www.ncbi.nlm.nih.gov/pubmed?term=Longley%20DB%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Donnelly RF](http://www.ncbi.nlm.nih.gov/pubmed?term=Donnelly%20RF%5BAuthor%5D&cauthor=true&cauthor_uid=23327610), [Scott CJ](http://www.ncbi.nlm.nih.gov/pubmed?term=Scott%20CJ%5BAuthor%5D&cauthor=true&cauthor_uid=23327610). *Biomacromolecules*. 2013;14(2):302-10.
* [**Gentamicin-loaded nanoparticles show improved antimicrobial effects towards Pseudomonas aeruginosa infection.**](http://www.ncbi.nlm.nih.gov/pubmed/22915848) Abdelghany SM, Quinn DJ, Ingram RJ, Gilmore BF, Donnelly RF, Taggart CC, Scott CJ. *Int J Nanomedicine.* 2012;7:4053-63.
* [**Microneedle-mediated intradermal nanoparticle delivery: Potential for enhanced local administration of hydrophobic pre-formed photosensitisers.**](http://www.ncbi.nlm.nih.gov/pubmed/21112544) Donnelly RF, Morrow DI, Fay F, Scott CJ, Abdelghany S, Singh RR, Garland MJ, Woolfson AD. *Photodiagnosis Photodyn Ther.* 2010;7(4):222-31.
* [**Microporation techniques for enhanced delivery of therapeutic agents.**](http://www.ncbi.nlm.nih.gov/pubmed/19807682) Singh TR, Garland MJ, Cassidy CM, Migalska K, Demir YK, Abdelghany S, Ryan E, Woolfson AD, Donnelly RF. *Recent Pat Drug Deliv Formul.* 2010;4(1):1-17.
* **Conferences**
* **Oral Presentations**
* **10th Pharmaceutics & Novel Drug Delivery Systems Conference. Oral Presentation.** PLGA nanoparticles entrapping moxifloxacin and amikacin as a host directed therapy for the treatment of multidrug resistant tuberculosis**. London, UK; 13-15 March 2017**



* **Posters**
  + **3rd Researcher's Day of the Materials Research Institute , MONS, Belgique (2016),** **Polytrimethylene carbonate nanoparticles formulation for drug delivery-A preliminary study.** Baroni Alexandra, Parumasivam Thaigarajan, Abdelghany Sharif, Dubois Philippe, Blankert Bertrand, Mespouille Laetitia, Chan Hak-Kim
  + [**Formulation of dual modality nanoparticles to enhance tobramycin efficacy in cystic fibrosis**](javascript:void(0))**.** J Deacon, S Abdelghany, S Elborn, A Kissenpfennig, C Taggart, C Scott. European Respiratory Journal 42 (Suppl 57), 224



* **Committees and memberships**
  + Faculty council member
  + General Safety Committee
  + Jordan FDA committee
* **Student Supervision**
* Co-supervisor on A master thesis titled “Polymeric nanoparticles for the ocular controlled delivery of dexamethasone”
* **Awards**
  + **Daniel Turnberg Travel Fellowship:** 1-month research on microneedles encapsulating nanosuspension for the transdermal delivery. Queen’s University Belfast. School of Pharmacy.



* + **Erasmus 1 week teaching award at the University of Helsinki, Finland.** The teaching week include 8 lectures of my research interest.
  + **2015** **Australian Endeavour Research Fellowship** to conduct short term academic visit in the University of Sydney and Centenary Institute Medical Research Foundation.



* + **Partial Scholarship (£20,000) to pursue a PhD in drug delivery and Biomaterials**, at Queen’s University Belfast, UK.



* + **A scholarship from the university of Jordan to pursue a PhD in drug delivery and Biomaterials,** at Queen’s University Belfast, UK.
* **Techniques learnt**
* Polymeric micro-needles fabrication
* Polymeric microneedles characterization including physical strength, optical coherence tomography, dissolution studies, skin deposition…
* Polymeric Nanoparticles formulations
* Ligand nanoparticle conjugation
* Physical characterization of Nanoparticles (Particle size analysis, entrapment efficiency…etc)



* High Performance Liquid Chromatography
* Confocal Microscopy
* ELISA
* Scanning Electron Microscopy, Transmission Electron Microscopy
* Confocal Microscopy
* Immunohistochemistry
* Flow Cytometry
* Gel electrophoresis
* Western blotting
* UV analysis, Fluorescence analysis
* In vivo plasma and Tissue analysis of Nanoparticles and Colony forming Units
* Tissue culture
* Macrophage Infection assay (Intracellular Infection Assay)
* Antimycobacterial activity analysis
* MIC and MBC determination
* DSC, ITC, FTIR
* **References**
* Professor Ryan Donnelly, School of Pharmacy, Queen’s University Belfast, Belfast, UK
* Professor Hak-Kim Chan, School of Pharmacy, University of Sydney, NSW, Australia
* Dr Chris Scott, School of Pharmacy, Acting Director of Center of Cancer Research and Cell Biology (CCRCB), Queen’s University Belfast, UK.
* Dr Yusuf Kemal Demir, School of Pharmacy, UNC, North Carolina, USA

