



Alaaldin M. Alkilany

a.alkilany@ju.edu.jo; alkilany77@gmail.com

Education and Experience:

Sep 2020-present	Professor of Pharmaceutics and Nanoscience Department of Pharmaceutics & Pharmaceutical Technology University of Jordan
Sep 2019-Jan 2021	Director/Accreditation and Quality Assurance Center University of Jordan
May 2018 -Sep 2019	Visiting Professor Georg Forster Research Fellow (Alexander von Humboldt foundation), Center of Hybrid Nanostructures (CHyN), Universität Hamburg, Germany.
2017 (May –Sep)	Visiting Professor Georg Forster Research Fellow (Alexander von Humboldt foundation), Physics Department, University of Marburg, Germany.
2016-2018	Manager/Quality Assurance and Strategic Planning Department University of Jordan
2016-Present	Associate Professor of Pharmaceutics and Nanoscience Department of Pharmaceutics & Pharmaceutical Technology University of Jordan
2014 (June –Sep)	Visiting Scholar Chemistry Department, University of Illinois at Urbana-Champaign, Illinois, USA
2012 (June –Sep)	Visiting Scholar Chemistry Department, University of Illinois at Urbana-Champaign, Illinois, USA
2012-2016	Assistant Professor of Pharmaceutics and Nanoscience Department of Pharmaceutics & Pharmaceutical Technology University of Jordan
2010-2012	Postdoctoral Fellow Pharmacology and Toxicology department Augusta University, Augusta, Georgia, USA
2006-2010	PhD. , Chemistry (research focus on Pharmaceutical Nanotechnology) University of Illinois Urbana-Champaign, Illinois, USA
2004-2006	Formulation Manager (R&D) Hikma Pharmaceuticals (http://www.hikma.com) Amman-Jordan
2000-2004	Formulation Scientist (R&D) Hikma Pharmaceuticals (http://www.hikma.com) Amman-Jordan
1995-2000	B.S. Pharmacy Jordan University of Science and Technology

Teaching Experience (10 years):

A. University of Illinois at Urbana-Champaign, Department of Chemistry:

- Chemistry 101 laboratory (as a teaching assistant during my PhD study)

B. The University of Jordan, School of Pharmacy:

- Physicochemical Principles of Pharmacy
- Physical Pharmacy (Theory and labs)
- Pharmaceutical Calculations and Compounding of Dosage Forms (Theory and labs)
- Pharmaceutical Technology (Theory and labs)
- Pharmaceutical Statistics
- Pharmaceutical Legislation and law
- Seminar in Pharmaceutics and Pharmaceutical Technology

C. Universität Hamburg, Germany, Center of Hybrid Nanostructures (CHyN),

- Methods in Nanobiotechnology (Master degree level)

Pharmaceutical Industry Experience (12 years):

- Extensive experience in pharmaceutical pre-formulation, formulation, scale up, and pilot clinical trials in an FDA-approved pharmaceutical company (<http://www.hikma.com>).
- Excellent theoretical and practical experience on various pharmaceutical unit operations such as: blending, granulation, drying, milling, compaction, tablet compression/coating, and capsule filling.
- Strong experience in writing manufacturing batch records, scientific reports, formulation protocols, scale-up/production protocols/reports, process validation protocols/reports and other formulation related documents.
- Strong experience in technology transfer from R&D to production and from production site to another.
- Knowledge of GMP (good manufacturing practice), GLP (good laboratory practice), FDA and ICH guidelines, CFR codes, and USP (US Pharmacopeia).

Nanotechnology Technical skills (13 years):

- Synthesis and characterization of various types of nanoparticles (inorganic and organic).
- Surface modification of nanoparticle and biomolecules conjugation.
- NMR, vibration spectroscopy (FTIR, Raman, SERS), GC-MS, LC-MS, ICP-MS/AES, LA-ICP-MS, XPS, electron microscopy (TEM/Cryo-TEM and SEM), dark/bright field optical microscopy, AFM, XRF, fluorescence microscopy, Dynamic Light Scattering (DLS), Zeta potential analysis, gel electrophoresis, PCR, western blotting, HPLC, basic cell culture and standard biochemical assays.

Consultation Services (6 years):

2012-2017 Consultant, Jordan Food & Drug Administration (JFDA), Pharmaceutical bioequivalence committee

Publications:

1. Murphy, C. J.; Gole, A. M.; Hunyadi, S. E.; Stone, J. W.; Sisco, P. N.; **Alkilany, A. M.**; Kinard, B. E.; Hankins, P. “Chemical Sensing and Imaging With Metallic Nanorods” *Chemical Communications* **2008**, *5*, 544-557. [Impact Factor* 2010: 5.787]
2. Murphy, C. J.; Gole, A. M.; Stone, J. W.; Sisco, P. N.; **Alkilany, A. M.**; Goldsmith, E. C.; Baxter, S. C. “Gold Nanoparticles in Biology: Beyond Toxicity To Cellular Imaging” *Accounts of Chemical Research* **2008**, *41*, 1721-1730. [Impact Factor* 2010: 21.852]
3. **Alkilany, A. M.**; Frey, R. L.; Ferry, J. L.; Murphy, C. J. “Gold Nanorods as Nanoadmicelles: 1-Naphthol Partitioning Into a Nanorod-Bound Surfactant Bilayer” *Langmuir* **2008**, *24*, 10235-10239. [Impact Factor*: 4.269]
4. **Alkilany, A. M.**; Nagaria, P. K.; Hexel, C. R.; Shaw, T. J.; Murphy, C. J.; Wyatt, M. D. “Cellular Uptake and Cytotoxicity of Gold Nanorods: Molecular Origin of Cytotoxicity and Surface Effects” *Small* **2009**, *5*, 701-708. [Impact Factor*: 11.5]
5. **Alkilany, A. M.**; Murphy, C. J. “Gold Nanoparticles with a Polymerizable Surfactant Bilayer: Synthesis, Polymerization, and Stability Evaluation” *Langmuir* **2009**, *25*, 13874-13879. [Impact Factor*: 4.269]
6. **Alkilany, A. M.**; Murphy, C. J. “Toxicity and Cellular Uptake of Gold Nanoparticles: What Have We Learned So Far?” *Journal of Nanoparticle Research* **2010**, *12*, 2313-2333. [Impact Factor*: 3.253]
7. **Alkilany, A. M.**; Nagaria, P. K.; Wyatt, M. D.; Murphy, C. J. “Cation Exchange on The Surface of Goldnanorods with a Polymerizable Surfactant: Polymerization, Stability, and Toxicity Evaluation” *Langmuir* **2010**, *26*, 9328-9333. [Impact Factor*: 4.269]
8. Murphy, C. J.; Thompson, L. B.; **Alkilany, A. M.**; Sisco, P. N.; Boulos, S. P.; Sivapalan, S. T.; Yang, J. A.; Chernak, D. J.; Huang, J. “The Many Faces of Gold Nanorods” *Journal of Physical Chemistry Letters* **2010**, *1*, 2867-2875. [Impact Factor*: 3.396]
9. **Alkilany, A. M.**; Thompson, L. B.; Murphy, C. J. “Polyelectrolytes Coating Provides a Facile Route to Suspend Gold Nanorods in Polar Organic Solvents and Hydrophobic Polymers” *ACS Applied Material & Interfaces* **2010**, *2*, 3417-3421. [Impact Factor*: 2.925]
10. Zill, A.; Rutz, A. L.; Kohman, R. E.; **Alkilany, A. M.**; Murphy, C. J. Kong, H.; Zimmerman, S. C. “Clickable Polyglycerol Hyperbranched Polymers and Their Application to Gold Nanoparticles and Acid-Labile Nanocarriers” *Chemical Communications* **2011**, *47*, 1279-1281. [Impact Factor*: 5.787]
11. Murphy, C. J.; Thompson, L. B.; Chernak, D. J.; Yang, J. A.; Sivapalan, S. T.; Boulos, S. P.; Huang, J.; **Alkilany, A. M.**; Sisco, P. N. “Gold Nanorod Crystal Growth: From Seed-Mediated Synthesis To Nanoscale Sculpting” *Current Opinion in Colloid & Interface Science* **2011**, *16*, 128-134. [Impact Factor*: 6.142]
12. Chandra, S.; Romero, M. J.; Shatanawi, A.; **Alkilany, A. M.**; Caldwell, R. B.; Caldwell, R. W. “Oxidative Species Increase Arginase Activity in Endothelial Cells through RhoA/Rho Kinase Pathway” *British Journal of Pharmacology* **2011**, *165*, 506-519 [Impact Factor*: 4.925]

13. Shatanawi, A.; **Alkilany, A. M.**; Caldwell, R. B.; Caldwell, R. W. “Angiotensin II Limits NO Production by Upregulating Arginase through a Mitogen Activated Protein Kinase-Activating Transcription Factor-2 pathway” *Circulation* **2011**; *124*: A16962 [Impact Factor* : 15.221]
14. **Alkilany, A. M.**; Thompson, L. B.; Boulos, S. P.; Sisco, P. N.; Murphy, C. J. “Gold Nanorods: Their Potential For Photothermal Therapeutics and Drug Delivery, Tempered By The Complexity of Their Biological Interactions” *Advanced Drug Delivery Reviews* **2012**, *64*, 190-199(Invited contribution). [Impact Factor* : 15.6]
15. Dreaden, E. C.; **Alkilany, A. M.**; Huang, X.; Murphy, C. J.; El-Sayed, M. A. “The Golden Age: Gold Nanoparticles for Biomedicine” *Chemical Society Reviews* **2012**, *41*, 2740-2779 (Invited critical review, **most accessed** article in ChemSocRev of the month: <http://blogs.rsc.org/cs/2012/02/02/top-ten-most-accessed-articles-in-december-2>). [Impact Factor* : 40.44]
16. **Alkilany, A. M.**; Shatanawi, A.; Caldwell, R. B.; Caldwell, R. W. “Toxicity and Cellular Uptake of Gold Nanorods in Vascular Endothelium and Smooth Muscles of Isolated Rat Blood Vessel: Importance of Surface Modification” *Small* **2012**, *8*, 1270-1278[Impact Factor* : 11.5]
17. **Alkilany, A. M.**; Lohse, S. E.; Murphy, C. J. “The Gold Standard: Gold Nanoparticle Libraries To Understand the Nano-Bio Interface” *Accounts of Chemical Research* **2013**, *46*, 650-661[Impact Factor* : 21.852]
18. Sakhtianchi, R.; Minchin, R. F.; Lee, K. B.; **Alkilany, A. M.**; Serpooshan, V.; Mahmoudi, M. “Exocytosis of Nanoparticles From Cells: Role in Cellular Retention and Toxicity” *Advances in Colloid and Interface Science* **2013**, *201-202*, 18-29 [Impact Factor **6.169**]
19. Boulos, S.; Davis, T.; Yang, J.; Lohse, S. E.; **Alkilany, A. M.**; Holland, I. A.; Murphy, J. C. “Nanoparticle-Protein Interactions: A Thermodynamic and Kinetic Study of The Adsorption of Bovine Serum Albumin to Gold Nanoparticle Surfaces” *Langmuir* **2013**, *29*, 14984-14996 [Impact Factor* : 4.19]
20. **Alkilany, A. M.**; Boulos, S. P. Lohse, S. E.; Thompson, L. B.; Murphy, C. J. “Homing Peptide-Conjugated Gold Nanorods: The Effect of Amino Acid Sequence Display on Nanorod Uptake and Cellular Proliferation” *Bioconjugate Chemistry* **2014**, *25*, 1162-1171 [Impact Factor* : 4.58]
21. **Alkilany, A. M.**; Bani Yaseen A. I.; Park, J. E.; Eller, J. R and Murphy, C. J. “Facile phase transfer of gold nanoparticles from aqueous solution to organic solvents with thiolated poly(ethylene glycol)” *RSC Advances* **2014**, *4*, 52676-52679 [Impact Factor* : 3.70]
22. **Alkilany, A. M.**; Abulatefeh, S. R.; Mills, K. K.; Bani Yaseen, A. I.; Hamaly, M. A.; Alkhatib, H. S.; Aiedeh, K. M.; Stone, J. W. “Colloidal Stability of Citrate and Mercaptoacetic Acid Capped Gold Nanoparticles upon Lyophilization: Effect of Capping Ligand Attachment and Type of Cryoprotectants”. *Langmuir* **2014**, *30*, 13799-13808 [Impact Factor* : 4.19]
23. **Alkilany, A. M.**; Bani Yaseen, A. I.; Kailani, M. H. “Synthesis of Monodispersed Gold Nanoparticles with Exceptional Colloidal Stability with Grafted Polyethylene Glycol-g-polyvinyl Alcohol”. *Journal of Nanomaterials* **2015**, Article ID 712359, 1-9;DOI: dx.doi.org/10.1155/2015/712359 [Impact Factor* : 1.644] (Invited Contribution).

24. Azhdarzadeh, M.; Saei, A.A.; Sharifi, S.; Hajipour, M. J.; **Alkilany, A. M.**; Sharifzadeh, M.; Ramazani, F.; Laurent, S.; Mashaghi, A.; Mahmoudi, M. "Nanotoxicology: advances and pitfalls in research methodology" *Nanomedicine* **2015**, *10*, 2931-2952 [Impact Factor* : 5.99]
25. Abulateefeh, S. R.; **Alkilany, A. M.** "Synthesis and Characterization of PLGA Shell Microcapsules Containing Aqueous Cores Prepared by Internal Phase Separation" *AAPS PharmSciTech* **2016**, *17*, 891–897 [Impact Factor* : 1.64]
26. **Alkilany, A. M.**; Caravana, A. C.; Hamaly, M. A.; Lerner, K. T.; Thompson, L. B. "Phase transfer of citrate stabilized gold nanoparticles using nonspecifically adsorbed polymers" *Journal of Colloid and Interface Sciences* **2016**, *461*, 39-44 [Impact Factor* : 3.37]
27. Canonico-May, S. A.; Beavers, K. R.; Melvin, M. J.; **Alkilany, A. M.**; Duvall, C. L.; Stone, J. W. "High conversion of H₂AuCl₄ into gold nanorods: A re-seeding approach" *Journal of Colloid and Interface Sciences* **2016**, *463*, 229-232 [Impact Factor* : 3.37]
28. Mahmoud, N. N.; Al-Qaoud, K. M.; Al-Bakri, A. G.; **Alkilany, A. M.**; Khalil, E. A. "Colloidal stability of gold nanorod solution upon exposure to excised human skin: Effect of surface chemistry and protein adsorption" *The International Journal of Biochemistry & Cell Biology* **2016**, *75*, 223–231 [Impact Factor* : 4.24]
29. Zanganeh, S.; Spitler, R.; Erfanzadeh, M.; **Alkilany, A. M.**; Mahmoudi, M. "Protein corona: Opportunities and challenges" *The International Journal of Biochemistry & Cell Biology* **2016**, *75*, 143–147 [Impact Factor* : 4.24]
30. **Alkilany, A. M.**; Mahmoud, N. N.; Hashemi, F.; Hajipour, M. J.; Mahmoudi, M. "Misinterpretation in Nanotoxicology: A Personal Perspective" *Chemical Research in Toxicology* **2016**, *29*, 943–948 [Impact Factor* : 3.6]
31. Hühn, J.; Carrillo-Carrion, C.; Soliman, M. G.; Pfeiffer, C.; Valdeperez, D.; Masood, A.; Chakraborty, I.; Zhu, L.; Gallego, M.; Yue, Z.; Carril, M.; Feliu, N.; Escudero, A.; **Alkilany, A. M.**; Pelaz, B.; del Pino, P.; Parak, W. J "Selected Standard Protocols for the Synthesis, Phase Transfer, and Characterization of Inorganic Colloidal Nanoparticles" *Chemistry of Materials* **2017**, *29*, 399–461 [Impact Factor* : 9.4]
32. Abulateefeh, S. R.; Alkawareek, M. Y.; Abdullah, F. R.; **Alkilany, A. M.** "Preparation of Aqueous Core-PLGA Shell Microcapsules with Mono-nuclear Cores by Internal Phase Separation: Optimization of Formulation Parameters" *Journal of Pharmaceutical Sciences* **2017**, *106*, 1136-1142 [Impact Factor* : 2.6]
33. Behzadi, S.; Serpooshan, V.; Tao, W.; Hamaly, M. A.; Alkawareek, M. Y.; Dreaden, E. C.; Brown, D.; **Alkilany, A. M.**; Farokhzad, O. C.; Mahmoudi, M. "Cellular uptake of nanoparticles: journey inside the cell" *Chemical Society Reviews* **2017**, *17*, 46, 4218-4244 [Impact Factor* : 40.44]
34. **Alkilany, A. M.**; Mansour, s.; Amro, H. M.; Pelaz, B.; Soliman, M. G.; Hinman, J. G.; Dennison, J. M.; Parak, W. J.; Murphy, C. J. "Introducing Students to Surface Modification and Phase Transfer of Nanoparticles with a Laboratory Experiment" *Journal of Chemical Education* **2017**, *94*, 769–774 [Impact Factor* : 1.42]
35. Mahmoud, N. N, **Alkilany, A. M.**; Dietrich, D.; Karst, U.; Al-Bakri, A. G.; Khalil, E. A. "Preferential accumulation of gold nanorods into human skin hair follicles: Effect of nanoparticle surface chemistry" *Journal of Colloid and Interface Science* **2017**, *503*, 95-102 [Impact Factor* : 3.37]
36. Mahmoud, N. N.; **Alkilany, A. M.**; Khalil, E. A.; Al-Bakri, A. G. "Antibacterial activity of gold nanorods against Staphylococcus aureus and Propionibacterium acnes:

- misinterpretations and artifacts” *International Journal of Nanomedicine* **2017**, 12, 7311-7322 [Impact Factor* : 4.38]
37. Mahmoud, N. N.; Harfouche, M.; **Alkilany, A. M.**; Al-Bakri, A. G., El-Qirem R. A.; Sharim, S. A.; Khalil E. A “Synchrotron-based X-ray fluorescence study of gold nanorods and skin elements distribution into excised human skin layers” *Colloids and Surfaces B: Biointerfaces* **2018**, 165, 118-126. [Impact Factor* : 4.23]
 38. Aljabali, A. A.; Akkam, Y.; Al Zoubi, M. S.; Al-Batayneh, K. M.; Al-Trad, B.; Abo Alrob, O.; **Alkilany, A. M.**; Benamara, M.; Evans, D. J. “Synthesis of Gold Nanoparticles Using Leaf Extract of *Ziziphus zizyphus* and their Antimicrobial Activity” *Nanomaterials* **2018**, 8(3), 174 [Impact Factor* : 3.55]
 39. Abu-Khalaf, N.; Zaid, A. N.; Jaradat, N.; **Alkilany, A. M.**; Abu Rumaila, B.; Al Ramahi, R.; Shweiki, S.; Nidal, S.; Surakhi, N. “The Taste of Commercially Available Clarithromycin Oral Pharmaceutical Suspensions in the Palestinian Market: Electronic Tongue and In Vivo Evaluation” *Sensors* **2018**, 18, 454. [Impact Factor* : 2.76]
 40. Mahmoud, N. N.; **Alkilany, A. M.**; Khalil, E. A.; Al-Bakri, A. G. “Nano-Photothermal ablation effect of Hydrophilic and Hydrophobic Functionalized Gold Nanorods on *Staphylococcus aureus* and *Propionibacterium acnes*” *Scientific Reports* **2018**, 8 (1), 6881 [Impact Factor* : 4.12]
 41. Mahmoud, N. N.; Harfouche, M.; **Alkilany, A. M.**; Al-Bakri, A. G.; Khalil, E. A. “Correlation between ICP-OES and Synchrotron-XRF in Detecting the Penetration of Gold Nanorods into Excised Human Skin Layers” **2018**, *Microscopy and Microanalysis* 24 (S2), 538-539 [Impact Factor* : 2.124]
 42. Alkawareek, M. Y.; Akkelah, B. M.; Mansour, S. M.; Amro, H. M.; Abulateefeh, S. R. **Alkilany, A. M.** “Simple Experiment to Determine Surfactant Critical Micelle Concentrations Using Contact-Angle Measurements” **2018**, *Journal of Chemical Education*, 95, 12, 2227-2232 [Impact Factor* : 1.42]
 43. Hamaly, M. A.; Abulateefeh, S. R.; Al-Qaoud, K. M.; **Alkilany, A. M.** “Freeze-drying of monoclonal antibody-conjugated gold nanorods: Colloidal stability and biological activity” **2018**, *International Journal of Pharmaceutics* 550 (1-2), 269-277 [Impact Factor* : 3.65]
 44. **Alkilany, A. M.**; Abulateefeh, S. R.; Murphy, C. J. “Facile Functionalization of Gold Nanoparticles with PLGA Polymer Brushes and Efficient Encapsulation into PLGA Nanoparticles: Toward Spatially Precise Bioimaging of Polymeric Nanoparticles” **2019**, *Particle & Particle Systems Characterization*, doi.org/10.1002/ppsc.201800414 [Impact Factor* : 4.47]
 45. Abulateefeh, S. R.; Al-Adhami, G. K.; Alkawareek, M. Y.; **Alkilany, A. M.** “Controlling the Internal Morphology of Aqueous Core-PLGA Shell Microcapsules: Promoting the Internal Phase Separation via Alcohol Addition” **2019**, *Pharmaceutical Development and Technology*, 24, 671-679 [Impact Factor* : 2.37]
 46. **Alkilany, A. M.**; Zhu, L.; Weller, H.; Mews, A.; Parak, W.; Barz, M.; Feliu, N. “Ligand density on Nanoparticles: A Parameter with Critical Impact on Nanomedicine” **2019** *Advanced Drug Delivery Reviews* (Invited review), 143, 22-36 [Impact Factor* : 15.6]
 47. Abulateefeh, S. R.; Alkawareek, M. Y.; **Alkilany, A. M.** “Tunable Sustained Release Drug Delivery System Based on Mononuclear Aqueous Core-Polymer Shell Microcapsules” **2019**, *International Journal of Pharmaceutics* 558, 291-298 [Impact Factor* : 3.65]

48. Amelie Heuer-Jungemann, Neus Feliu, Ioanna Bakaimi, Majd Hamaly, **Alaaldin Alkilany**, Indranath Chakraborty, Atif Masood, More by Atif Masood, Maria F. Casula, Athanasia Kostopoulou, Eunkeu Oh, Kimihiro Susumu, Michael H. Stewart, Igor L. Medintz, Emmanuel Stratakis, Wolfgang J. Parak, Antonios G. Kanaras “The Role of Ligands in the Chemical Synthesis and Applications of Inorganic Nanoparticles” **2019** *Chemical Reviews*, 119, 4819-4880 [Impact Factor*: **54.3**]
49. **Alkilany A. M.**; Alstotari S.; Alkawareek M. Y.; Abulateefeh S. R. “Facile Hydrophobication of Glutathione-Protected Gold Nanoclusters and Encapsulation into Poly(lactide-co-glycolide) Nanocarriers” **2019** *Scientific Reports*, 9, 11098 [Impact Factor*: **4.011**]
50. Alkawareek M. Y.; Bahloul A.; Abulateefeh.; S. R.; **Alkilany A. M.** “ Synergistic antibacterial activity of silver nanoparticles and hydrogen peroxide” *PloS One*, 8, e0220575 [Impact Factor*: **2.776**]
51. Abu-Khalaf N.; Zaid A. N.; Jaradat N.; **Alkilany A. M.**; Abulateefeh S. R.; Al Ramahi R.; Ghanem M. “Identification of substandard drug products using electronic tongue: cefdinir suspension as a pilot example” **2019** *Drug Design, Development and Therapy*, 13, 3249—3258 [Impact Factor*: **3.208**]
52. Roy S.; Liu Z.; Sun X.; Gharib M.; Yan H.; Huang Y.; Megahed S.; Schnabel M.; Zhu D.; Feliu N.; Chakraborty I.; Sanchez-Cano C.; **Alkilany A. M.**; Parak W. J. “Assembly and Degradation of Inorganic Nanoparticle in Biological Environment” **2019** *Bioconjugate Chemistry* 30, 11, 2751-2762 [Impact Factor*: **4.349**]
53. Zhu L.; Gharib M.; Becker C.; Zeng Y.; Ziefuß A. R.; Chen L.; Alkilany A. M.; Rehbock C.; Barcikowski S.; Parak W. J.; Chakraborty I. “Synthesis of Fluorescent Silver Nanoclusters: Introducing Bottom-Up and Top-Down Approaches to Nanochemistry in a Single Laboratory Class” **2020** *Journal of Chemical Educational*, 2020, 97, 1, 239–243 [Impact Factor*: **1.42**]
54. Zaid, N.; Hassan, M.; Jaradat, N.; Assali, N.; Al-Abbassi, R.; Alkilany, A. M.; Abulateefeh, S. “Formulation and characterization of combretastatin A4 loaded PLGA nanoparticles” **2020** *Material Research Express*, 6, 1250d7. DOI: 10.1088/2053-1591/ab63f5 [Impact Factor*: **1.45**]
55. Hamdallah, S. I.; Zoqlam, R.; Erfle, P.; Blythe, M.; Alkilany, A. M.; Dietzel, A.; Qia, S. “Microfluidics for pharmaceutical nanoparticle fabrication: The truth and the myth” **2020** *International Journal of Pharmaceutics* 584, 119408 [Impact Factor*: **4.9**]
56. Nouf N Mahmoud, Haneen Qabooq, Shrouq Alstotari, Ola A Tarawneh, Nour H Aboalhaja, Sawsan Shraim, Alaaldin M Alkilany, Enam A Khalil, Rana Abu-Dahab “Quercetin-gold nanorods incorporated into nanofibers: development, optimization and cytotoxicity” **2021** *RSC Adv.*, **11**, 19956-19966
57. Randa Zoqlam, Chris J Morris, Mohammad Akbar, Alaaldin M Alkilany, Sherif I Hamdallah, Peter Belton, Sheng Qi “Evaluation of the Benefits of Microfluidic-Assisted Preparation of Polymeric Nanoparticles for DNA Delivery” **2021** *Materials Science and Engineering: C*, 127, 112243

Books and Book Chapters:

1. **Alaaldin M. Alkilany** and Faleh Sawair. Academic Quality Assurance at The University of Jordan: A Practical Guide. The University of Jordan **2017**.

2. John W Stone, **Alaaldin M Alkilany**, Majd A Hamaly, Stephanie Canonico-May. Biomedical Applications of Anisotropic Gold Nanoparticles. In *Anisotropic and Shape-Selective Nanomaterials*; Simona E. Hunyadi Murph; George K. Larsen; Kaitlin J. Coopersmith; Springer Publisher: **2017**; pp. 399-426.
 3. Omid Mashinchian, **Alaaldin M Alkilany**, Mohammad Javad Hajipour, and Shima Tavako. Gold Nanoparticles for Biomedical Imaging and their Biological Response. In *New Developments in Gold Nanomaterials Research*; James Kah Chen Yong and Zhichuan J. Xu.; Nova Science Publishers: **2016**; pp. 65-84.
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Selected Invited Presentations via online Platforms

1. “Active Engagement of Undergraduate Student in Research” Pittsburg State University, USA via Zoom. April 2021.
2. “Nanotechnology: The land of opportunities” in PRIS’2020 virtual conference hosted by Phi Science Institute via Run the World.
3. “Smart Drug Delivery Systems” in 8th Pharmacy Students Research workshop hosted by PSRC via Run the World.

Selected Podium Presentations:

4. “Precise Engineering of Targeted Gold Nanoparticles”. Network Meeting of the Alexander von Humboldt Foundation, **November 2018**, Bonn, Germany.
5. “Pharmaceutical Nanotechnology”. DAAD- AvH-Alumni conference, **May 2018**, Amman-Jordan.
6. “Nanopharmaceutical: Status and Future”. The 2nd JFDA Congress of Pharma industry and Clinical Trials growth & innovation, **March 2018**, Amman-Jordan.
7. “Polymeric/Plasmonic Nanohybrids”. International Conference of Humboldt Kolleg, **April 2017**, Amman-Jordan.
8. “Conjugation of Infliximab to Gold Nanoparticles for the Treatment of Rheumatoid Arthritis”. International Conference on Advances in Nursing, Pharmaceutical and Medical Sciences, **November 2017**, Kuala Lumpur, Malaysia.
9. “Gold at the Nanoscale: Physics, Chemistry and Biology”. NanoTech Summer School Part II (DAAD funded program with partnership with Technische Universität (TU) of Chemnitz, Germany), **Sep 2016**, Amman-Jordan.
10. “NanoEducation: Awareness of an Emerging Field”. The 4th International Conference of The Faculty of Pharmacy, The University of Jordan, **2016**, Amman, Jordan.
11. “Facile Encapsulation of Gold Nanoparticles into PLGA Nanocarriers: Toward visualization of Polymeric Nanoparticles inside Biological Compartment”. The 11th international conference and expo on nanoscience and molecular nanotechnology, **Oct 2016**, Rome, Italy.
12. “Didactic Nanotechnology” Philipps Universitat, **July 2016**, Marburg-Germany.
13. “Nanotechnology for Medical Applications”. Workshop of Nanotechnology for undergraduates, Science Student Research Club, **June 2016**, The University of Jordan, Amman.
14. “Bioequivalence design: Fasting or Fed?”. Global Bioequivalence Harmonization Symposium, **May 2016**, ACDIMA Biocenter, Amman, Jordan

15. "Nanotechnology: The Central Theme". TESLA workshop, **March 2016**, Yarmouk University, Irbid, Jordan.
16. "How to Prepare a Professional Seminar". The 3rdPharmacy Students Research Training Workshop, The University of Jordan, **Sep 2015**, Amman, Jordan
17. "Nanotoxicology: Status and Future Perspective". Inception workshop on awareness raising for nanosafety in Jordan, **August 2015**, Crown Plaza Hotel, Amman, Jordan.
18. "Nanotechnology for Medical Doctors". IFMSA workshop on nanomedicine, **August 2015**, Jordan University of Science and Technology, Irbid, Jordan
19. "Nano-vasculature interactions: Probing with gold nanoparticles". The 8th scientific day, Faculty of Pharmacy, **May 2015**, Jordan University of Science and Technology, Irbid, Jordan.
20. "Nanomedicine". Scientific day at the faculty of Pharmacy, **April 2015**, The University of Jordan, Amman, Jordan
21. "Fighting Cancer with Nanobullets". Joint Egyptian-Jordanian Workshop on Technical and Research Collaboration, **Dec 2014**, Le Royal Hotel, Amman, Jordan
22. "Nanotechnology: An Emerging Discipline". TEDx UJ workshop, **Oct 2014**, The University of Jordan, Amman, Jordan
23. "Seminar on Seminars". The 2ndPharmacy Students Research Training Workshop/ The University of Jordan, **Sep 2014**, Amman, Jordan
24. "*Tiny Particles with Big Applications: The Era of Nanotechnology*". The 15th Scientific Congress of the Association of Pharmacy Colleges in the Arab World &The 3rd International Conference of The Faculty of Pharmacy, The University of Jordan, **Oct 2012**, Amman, Jordan.
25. "*Biomedical Applications of Gold nanotechnology*". The 14thJordanian Pharmaceutical Association (JPA) Conference, **Apr 2012**, Amman, Jordan
26. "*Pharmaceutical Nanotechnology in Jordan: Status & Future Directions*". Jordanian Association of Manufacturers of Pharmaceuticals and Medical Appliances (JAPM), Pharmaceutical Innovation Conference, Feb **2012**, Amman, Jordan.
27. "*Small Mater Does Mater: Killing cancer with Nano-bullets*". School of Medicine, Georgia Regents University, Scientific Diversity Day, May **2011**, Augusta, Georgia, USA.
28. "Gold Nanoparticles with a Polymerizable Surfactant Bilayer: Synthesis, Polymerization, and Stability Evaluation". CNST annual workshop **2010**, the University of Illinois Center for Nanoscale Science and Technology (CNST), Urbana, IL, USA.

Selected poster presentation:

1. **Alkilany, A. M.**; Burrow, N.; Boulos, S.P.; "Cryo-TEM characterization of gold nanorod growth in solutions of CTAB with trace Ag⁺" Oral presentation, *246thNational Meeting of the American Chemical Society*, Indianapolis, Indiana, USA (**2013**).
2. **Alkilany, A.M.**; Boulos, S.P.; Thompson, L.B.; Lohse, S.E.; Murphy, C.J. "YSA-Conjugated Gold Nanorods as Anti-cancer Therapeutics: Rate of Cellular Uptake and Photothermal Treatment". Poster presentation, *243thNational Meeting of the American Chemical Society*, San Diego, CA, USA (**2011**).
3. **Alkilany, A. M.**; Soto-Ortega, D.; Paolini, S.; Mahtab, R.; Murphy, C. J.; Moss, A. M. "Negatively Charged Gold Nanoparticles Can Inhibit the Formation of Alzheimer's

Disease Amyloid- β Protein Aggregates in a Mechanism-Specific Fashion”. *AIChE*, Salt Lake City, UT, USA (2010).

4. Alkilany, A. M.; Murphy, C. J. “Cation Exchange on The Surface of Goldnanorods with a Polymerizable Surfactant: Polymerization, Stability, and Toxicity Evaluation”. Poster presentation, *239th National Meeting of the American Chemical Society*, San Francisco, CA, USA (2010).
5. Alkilany, A. M.; Nagaria, P. K.; Hexel, C. R.; Shaw, T. J.; Murphy, C. J.; Wyatt, M. D. “Cellular Uptake and Cytotoxicity of Gold Nanorods: Molecular Origin of Cytotoxicity and Surface Effects”. Poster presentation, *237th National Meeting of the American Chemical Society*, Salt Lake City, UT, USA (2009).
6. Alkilany, A. M.; Frey, R. L.; Ferry, J. L.; Murphy, C. J. “Gold Nanorods as Nanoadmicelles: 1-Naphthol Partitioning Into a Nanorod-bound Surfactant Bilayer”. Poster presentation, *235th National Meeting of the American Chemical Society*, New Orleans, LA, USA (2008).

Awards

- “ The Outstanding Researcher Award of 2019”, The University of Jordan, **Jan 2020**.
- “ The Outstanding Researcher Award of 2017”, The University of Jordan, **April 2018**.
- “Georg Forster Research Fellowship For Experienced Researchers”, the Alexander von Humboldt foundation, Germany, **Feb 2017** (hosted by Prof. Dr. Wolfgang J. Parak Laboratory, Center of Hybrid Nanostructures (CHyN), University of Hamburg).
- “Erasmus Mundus Plus Academic Mobility Award”, **July 2016** (To Philipps-Universität Marburg, Germany).
- “Leadership Award”, Student Initiative competition at the University of Jordan, **May 2015**, Amman, Jordan.
- “Speaker Recognition Award”, Faculty of Pharmacy, The University of Jordan, Sep **2014**, Amman, Jordan.
- “JPA Recognition Award”, **2012**, Jordan Pharmaceutical Association (JPA), Amman, Jordan.
- “USC Graduate School Research Award”, **2007**, University of South Carolina, Columbia, South Carolina, USA.

Selected Training courses and workshops:

- Biomedical applications of X-ray free electron laser, XFEL (<https://www.xfel.eu>) (Nov **2018**), Hamburg, Germany.
- *Trainer*: Workshop of Scientific and Regulatory Assessment of Generic Registration Dossiers: The Most Recent Updates, (April **2018**), Crown Plaza, Amman-Jordan
- Open Educational Resources, (Feb **2017**), Center of Human Resources Development, The University of Jordan, Amman-Jordan
- Designing and Delivery of Academic Program, (Nov **2016**), Association of Arabic Universities, Amman, Jordan
- *Speaker*: NanoTech Summer School Part I, (Sep**2016**), Technische Universität (TU) of Chemnitz, Chemnitz, Germany
- *Speaker*: Bioequivalence Studies and Biowaivers, Requirements, Assessment & Most Common Deficiencies (August **2016**). Amman Marriott Hotel, Amman, Jordan

- *Speaker*: Global Bioequivalence Harmonization Symposium (May **2016**). ACDIMA Biocenter, Amman, Jordan
- “Nanotechnology for Undergraduates: A didactic laboratory” (March **2016**). Faculty of Pharmacy, The University of Jordan, Amman, Jordan.
- The 2nd MENA Regulatory Workshop on Bioequivalence, Biowavier, Bioanalysis, Dissolution and Biosimilar (Sep **2015**), Amman, Jordan
- Biorelevant Dissolution Tests and Bioequivalence, (Feb **2015**), ACDIMA Biocenter, Amman, Jordan
- Tulip Int’l & Kerry Technical Pharmaceutical Seminar, (May **2014**), Millennium Hotel, Amman, Jordan
- STAFF: Academic Development Workshop (Sep **2013**), Center of Human Resources Development, The University of Jordan, Amman-Jordan.
- The 5th MENA Bioequivalence Conference (June **2013**), The Jordanian Association of Pharmaceutical Manufacturers, Amman, Jordan
- Alphabetical grading System (Jan **2013**), The University of Jordan, Center for Human Resources Development, Amman-Jordan.
- *Interactive Ethics Session For Post-Doctoral Scientists* (Nov **2011**), Georgia Health Sciences University, Augusta, GA, USA
- *3rd Advanced Materials Characterization Workshop* (Jun **2010**), University of Illinois at Urbana-Champaign, IL, USA
- Scientific Writing Workshop (Jan **2010**), University of Illinois, IL, USA.
- Bioavailability and Bio-Equivalence Studies Workshop (Jan **2005**), EJADA, Amman, Jordan.
- Project Management Workshop (Mar **2005**), Project Management Institute, Amman, Jordan.
- Pharmaceutical Tablet Coating Training Workshop (Dec **2003**), Colorcon[®] Coating School, Arona, Italy.
- Strategic Presentation Workshop (May **2001**), Hikma Pharmaceutical Training Department, Amman, Jordan.

Selected Committee Services (among more than 50)

- Member of the Council of Nanotechnology Center at the University of Jordan
- Member in the National Committee to establish Nanosafety and Ethics Strategic Plan.
- Member in the Steering Committee to establish the National Nanotechnology Centre of Jordan, the Higher Council for Science & Technology (H.C.S.T).
- Bioequivalence studies Evaluation Committee, Jordanian Food & Drug Administration (JFDA).

Funded Research Projects

- Deanship of Academic Research, The University of Jordan, Principal Investigator, “Targeting and ablation of metastatic esophageal cancer using gold nanotechnology”. 2013-2016; JD 17,000.
- Scientific Research Support Fund, Ministry of Higher Education and Scientific Research, Jordan, Principal Investigator, “Polymeric nanoparticles with encapsulated gold

nanoparticles: Towards sensitive quantification and visualization of pharmaceutical polymeric nanocarriers”. 2015-2018; JD 85,000.

- Scientific Research Support Fund, Ministry of Higher Education and Scientific Research, Jordan, Egypt-Jordan Cooperation Program for Scientific Research, Principal Investigator, “Treatment of Collagen-Induced Arthritis Using Gold Nanoparticles”. 2016-2018; JD 10,650.
- Deanship of Academic Research, The University of Jordan, Co-Investigator, “Pharmaceutical Nanotechnology for Enhancing the Oral Bioavailability of Bisphosphonates (BPs)-Osteoporosis agents”. 2013-2015; JD 10,000.
- Deanship of Academic Research, The University of Jordan, Co-Investigator, “Preparation of new thermo-responsive PLGA-polyether amine nanoparticles for drug delivery applications”. 2015-2017; JD 27,000.
- Scientific Research Support Fund, Ministry of Higher Education and Scientific Research, Jordan, Co-Investigator, “Enhanced oral bioavailability of insulin using PLGA NPs: in vivo evaluation of toxicity and therapeutic effect”. 2015-2018; JD 38,370.
- Alexander von Humboldt Association, Germany, “Development of Precise Nanomedicine”, 2017-2019; 64000 JD (chemicals and salary for 18 months in the hosting lab of Prof. Dr. Wolfgang Parak).

Thesis supervision and examination

Student Supervision

- PhD thesis (Co-Supervisor): Yanan Kang “Monovalent Mab functionalized gold nanoparticles via SNAP conjugation technology” Hamburg University, Center of Hybrid Nanostructures, Defense date: 2022 (expected)
- PhD thesis (Co-Supervisor): Bing Qi “Integrity of Mab functionalized gold nanoparticles” Hamburg University, Center of Hybrid Nanostructures, Defense date: 2022 (expected)
- Master thesis (Co-Supervisor): Heiko Heide “Biodistribution of Monovalent antibody-functionalized gold nanoparticles” Hamburg University, Center of Hybrid Nanostructures, Defense date: 2022 (expected)
- MSc thesis (Main-Supervisor): Majd A. Hamaly "Lyophilization of Rituximab-Conjugated Gold Nanoparticles: Colloidal Stability, Biological Activity and Effect of Various Cryoprotectants. University of Jordan, Faculty of Pharmacy, Defense Date: August 2016.
- PhD thesis (Co-Supervisor):: Nouf N. Mahmoud “Penetration and Distribution of Gold Nanoparticles Into Skin: Effect of Nanoparticle Size, Shape and Surface Chemistry on Hair Follicles Targeting and Antibacterial Activity”. University of Jordan, Faculty of Pharmacy, Defense Date: August 2017.
- MSc thesis (Co-Supervisor):: Amani Adel Al-Aroud “Formulation And Antibacterial Activity Of Silver Nanoparticle Hydrogels”. Isra University, Faculty of Pharmacy, Defense Date: May 2018.

- MSc thesis (Co-Supervisor): Muna Hassan “Synthesis and Characterization of a Polymeric Nanoparticles of a Potent Anticancer Agent (Combretastatin)”. An- Najah National University, Nablus, Palestine, Faculty of Pharmacy, Defense Date: June 2018.

Thesis Examiner

- MSc thesis: Samaa T. Abdullah “Development of A Sustained Release Suspension Formulation for Ambroxol with Raft Formation Property”. University of Jordan, Faculty of Pharmacy, Defense Date: April 2016.
- MSc thesis: Sara M. Hassaneen “Formulation and In-Vitro Evaluation of Ibuprofen-PVA/PVP Matrix Tablet and the Influence of co-Excipient Avicel on the Drug Release Rate”. Al-Isra University (Jordan), Faculty of Pharmacy, Defense Date: June 2015.
- PhD thesis: Lavanya Singh “Peptide-Functionalized Gold Nanoparticles with Targeted Delivery for Potential HIV Integrase Inhibition” University of KwaZulu-Natal (South Africa), College of Health Sciences, Defense Date: Jan 2018.
- MSc thesis: Haneen Qabouq “Nanofibers Material as a Potential Dressing for Wound: Development and Characterization” Al-Zaytoonah University (Jordan), Faculty of Pharmacy, Defense Date: July 2020.

References:

Reference and contact information	Professional Relationship	Duration of relationship
<p>Professor Catherine J. Murphy University of Illinois at Urbana-Champaign A521 Chemical & Life Sciences Laboratory 600 South Mathews Avenue Urbana, IL (USA) 61801 murphycj@illinois.edu phone: 217-333-7680</p>	PhD advisor	2006-present
<p>Professor R. William Caldwell Chairman, Pharmacology & Toxicology department Georgia Regents University 1459 Laney Walker Blvd (CB-3530) Augusta, GA (USA) 30912 wcaldwel@georgiahealth.edu phone: 706-721-2347</p>	Postdoctoral research mentor	2010-present
<p>Professor Wolfgang J. Parak Center of Hybrid Nanostructures (CHyN), Fachbereich Physik Institut für Nanostruktur und Festkörperphysik Universität Hamburg Hamburg, Germany wolfgang.parak@uni-hamburg.de</p>	Research Host for my Georg Forster Research Fellowship	2016-present

phone: 04042838-7098		
Professor Abla Bsoul Faculty of Pharmacy The University of Jordan Amman 11942-Jordan phone: 00962795652216 ablabsoul@yahoo.com ablabsoul@ju.edu.jo	Dean of the Faculty of Pharmacy	2000-present
Professor Hatim Al-khatib Faculty of Pharmacy The University of Jordan Amman 11942-Jordan h.khatib@ju.edu.jo phone: 00962795045494	Head of the Department of Pharmaceutics	2011-present
Professor Abdelkareem Alqudah School of Medicine The University of Jordan Amman 11942-Jordan a-alqudah@ju.edu.jo phone: 00962796161414	President of the University of Jordan	2018-present
Dr. Husam A. Al Rashdan Operational CEO Hikma Pharmaceuticals Amman-Jordan HaAlrashdan@hikma.com Phone: 00962799061077	Colleague with a close professional interaction during my work at Hikma Pharmaceuticals	2000-present
Dr. Maen Abdelhafez CEO Dar Al-Dawa Pharmaceutical Group Amman-Jordan Maen.Abdelhafez@dadgroup.com Phone: 00962796677676	Served as a consultant for DAD Pharmaceutical company	2018-present