

Curriculum Vitae

Ahlam Zaid Alkilani

Personal Information

Date of birth: 14 May 1984.
Nationality: Jordanian
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Education

- 2013 Ph.D., Drug delivery and pharmaceutical technology, Queen's University of Belfast, UK. Title of PhD thesis **"Polymeric Microneedle Systems for Enhanced Transdermal Drug Delivery"**
- 2009 MSc, Pharmaceutical sciences, title of master thesis, **Development and validation of HPLC method for the determination of β -sistosterol in a pharmaceutical product (MEBO[®])** with an aggregate average of 3.71 (Excellent), Jordan University, Amman, Jordan
- 2006 Permission to Practice Pharmacy, Amman, Jordan
- 2006 B.Sc. in Pharmacy with an aggregate average of 3.69 (Excellent), Jordan University, Amman, Jordan.
- 2002 Secondary School Certificate with an average of 95.2% (Excellent), Scientific branch, Qater Alnda Secondary School, Jordan.

Training and Working Experience

- Sep 2016- current Dean of Faculty of pharmacy/ Zarqa university
- Sep 2019-current Associate Professor, Department of Pharmacy, Faculty of Pharmacy, Zarqa University, Zarqa, Jordan.

Sep 2015- Sep 2016	Deputy Dean in Faculty of pharmacy/ Zarqa university
Sep 2014- Sep 2016	Head of the Department of the Pharmaceutical science and Pharmaceutics in faculty of pharmacy/ Zarqa university
Nov 2013	Assistant Professor, Department of Pharmacy, Faculty of Pharmacy, Zarqa University, Zarqa, Jordan.
2010-2013	Ph.D. candidate, Department of Pharmacy, Queen's University of Belfast, Belfast, UK
2009-2010	Teaching assistant at the faculty of Pharmacy, Zarqa University, Zarqa, Jordan.
2007-2009	MSc. candidate, department of pharmaceutical science, University of Jordan, Amman, Jordan.
2006-2009	Teaching assistant at the faculty of Pharmacy, University of Jordan, Amman, Jordan.

Research interest

My research is centred on design and physicochemical characterization of advanced polymeric drug delivery systems for transdermal drug delivery. I published many papers and book's chapters. My H-index is 17 and my citation around 2000.

Membership in professional

- Member of the Jordan pharmaceutical association (JPA)
- Member of the Post Approval changes (PAC) Committee in JFDA (2016- 2020)
- Member of the American College of Clinical Pharmacy (ACCP) (2017-2018)
- Member of International Pharmaceutical Federation (FIP) (2021-2024)

Workshops and training courses

- A training course titled "ISO 31000: 2018 Risk Mangment Foundation Training Course," conducted by Mr. Alaa Al Saadi from SGS in Jordan, Zarqa, February 2-3, 2025.

- A training course titled "Performance Management, and Key Performance Indicators Awareness Training Course" conducted by Mr. Alaa Al Saadi from SGS in Jordan, Zarqa, January 13th , 2025.
- A workshop titled "Transformational Leadership: Building Soft Skills for Positive Impact for Healthcare Leaders," conducted by Olga Kiendler from Health Consultancy in Saudi Arabia, Damam, April 21, 2024.
- Scientific writing workshop conducted by Dr. Navid Madani from Harvard Medical School and Dana-Farber Cancer Institute in Boston, MA, Zarqa University 26th-27th of September 2016
- The first Regional Faculty Development Workshop on Curricular Design and Delivery conducted by Al Ain University of Science and Technology (AAU) in conjunction with The American Association of Colleges of Pharmacy (AACP) and The Accreditation Council for Pharmacy Education (ACPE) international in Abu Dhabi Campus, United Arab Emirates, 13th -14th of March, 2017.
- The Second Regional Faculty Development Workshop on Best Practices for Planning Educational Assessment and Curriculum Mapping conducted by Al Ain University of Science and Technology (AAU) in conjunction with The American Association of Colleges of Pharmacy (AACP) and The Accreditation Council for Pharmacy Education (ACPE) international in Abu Dhabi Campus, United Arab Emirates, 5th -6th of March, 2018.

Scientific visits

I worked at Queen's University Belfast as a Visiting Researcher with Professor Ryan Donnelly for a period of one month, starting from 01-08-2015 until 31-08-2015 on project that involve transdermal delivery of drug substances using microneedle arrays.

Awarded Fellowships

Visiting Research Fellow in the school of pharmacy at Queen's University of Belfast from 1 June 2014 to 31 May 2015.

Awards and Honors

- The Best Poster Award at the 8th International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems (2016), Madrid, Spain
- The Best Poster Award at the 15th Jordanian Pharmaceutical Conference (2014) Amman . Jordan.

TWAS Young Affiliates Program (2023-2028)

Selected as one of the Young Affiliates by The World Academy of Sciences (TWAS), recognizing exceptional young scientists from developing countries.

- Honored for advancing knowledge in the field of pharmaceutical technology and drug delivery systems, particularly in nanoparticle-based transdermal applications. Engaged in global scientific collaboration, fostering the exchange of knowledge and research to address pressing health challenges.
- This five-year affiliation provides opportunities for contributing to international scientific initiatives and expanding expertise in innovative pharmaceutical solutions.

L'Oréal-UNESCO For Women in Science Award (Levant Region) – 2024

Awarded for outstanding contributions to scientific research and innovation in the Levant region.

- Recognized for pioneering work in the development of nanoparticle-based drug delivery systems for transdermal applications, with a focus on improving rheumatoid arthritis treatment outcomes for women.
- This prestigious award celebrates women scientists who are making impactful advances in their fields, empowering the next generation of female researchers.

Scientific productions

Publications

1. Hamed, R., **Alkilani**, A. Z., Al-Adhami, Y., Musleh, B., & Aburayya, R. (2025). Advances in Transdermal Delivery Systems for Antifungals: Current Approaches and Future Perspectives. *Microbial Pathogenesis*, 107776.
2. Hamed, R., Aburayya, R., **Alkilani**, A. Z., Hammad, A. M., Abusara, O. H., & Abo-Zour, H. (2025). Thermo-Responsive Niosomal In Situ Gels for Topical Delivery of Prednisolone. *AAPS PharmSciTech*, 26(5), 1-28.

3. Basheer, H. A., **Alkilani**, A. Z., Alhusban, M. A., Abo-Zour, H., & Alshaer, W. (2025). Evaluating Niosomes Cytotoxicity on Fibroblast Cells: A Preliminary Step Towards Cancer Cell Assessment Using Telaglenastat as a Model Drug. *BioNanoScience*, 15(1), 1-16.
4. Jaber, D., Salman, N., Al Tabbah, S., El-Sharif, A. R., **Alkilani**, A. Z., & Qourshah, A. (2025). Evaluating the Knowledge, Attitude, and Practices of Jordanian Society Towards Halal Pharmaceuticals. *The Open Public Health Journal*, 18(1).
5. **Zaid Alkilani**, A., Alkhaldi, R. A., Basheer, H. A., Amro, B. I., & Alhusban, M. A. (2025). Fabrication of thymoquinone and ascorbic acid-loaded spanlastics gel for hyperpigmentation: in vitro release, cytotoxicity, and skin permeation studies. *Pharmaceutics*, 17(1), 48.
6. Hamed, R., AbuKwiak, A. D., Aburayya, R., **Alkilani**, A. Z., Hamadneh, L., Naser, M., ... & Alhusban, A. A. (2024). Microneedles Mediated-Dermal Delivery of Vitamin C: Formulation, Characterization, Cytotoxicity, and Enhancement of Stability. *Heliyon*.
7. Al-Nimry, S. S., **Alkilani**, A. Z., & Alda'ajeh, N. A. (2024). Transdermal drug delivery of rizatriptan using microneedles array patch: preparation, characterization and ex-vivo/in-vivo study. *Pharmaceutical Development and Technology*, 29(7), 776-789.
8. **Alkilani**, A. Z., Omar, S., Nasereddin, J., Hamed, R., & Obeidat, R. (2024). Design of colon-targeted drug delivery of dexamethasone: Formulation and in vitro characterization of solid dispersions. *Heliyon*, 10(14).
9. Alkilani, A. Z., Sharaire, Z., Hamed, R., & Basheer, H. A. (2024). Transdermal Delivery System of Doxycycline-Loaded Niosomal Gels: Toward Enhancing Doxycycline Stability. *ACS Omega*.
10. Jaber, D., Hasan, H. E., Alkaderi, A., **Alkilani**, A. Z., & El-Sharif, A. R. (2024). Assessment of the Knowledge, Attitude, and Perception of Healthcare Providers Regarding Halal Pharmaceuticals. *The Open Public Health Journal*, 17(1).
11. Hamed, R., Abu Nahia, B. J., **Alkilani**, A. Z., Al-Adhami, Y., & Obaidat, R. (2024). Recent Advances in Microneedling-Assisted Cosmetic Applications. *Cosmetics*, 11(2), 51.
12. **Zaid Alkilani**, A., Hamed, R., Musleh, B., & Sharaire, Z. (2024). Breaking boundaries: the advancements in transdermal delivery of antibiotics. *Drug Delivery*, 31(1), 2304251.
13. Nasereddin, J., Al Wadi, R., **Zaid Al-Kilani**, A., Abu Khalil, A., Al Natour, M., & Abu Dayyih, W. (2024). The Use of Data Mining for Obtaining Deeper Insights into the

- Fabrication of Prednisolone-Loaded Chitosan Nanoparticles. *AAPS PharmSciTech*, 25(2), 38.
14. Nasereddin, J., Al-Wadi, R., **Alkilani, A. Z.**, Nahia, B. A., Hailat, M. M., & Dayyih, W. A. (2024). Optimization and Validation of Spectrophotometric Methods for the Determination of Prednisolone in Chitosan Nanoparticles. *Journal of Hunan University Natural Sciences*, 51(4).
 15. Basheer, H.A., Alhusban, M.A., **Zaid Alkilani, A.**, Alshishani, A., Elsalem, L. and Afarinkia, K., 2023. Niosomal Delivery of Celecoxib and Metformin for Targeted Breast Cancer Treatment. *Cancers*, 15(20), p.5004.
 16. **Zaid Alkilani, A.**, Abo-Zour, H., Basheer, H. A., Abu-Zour, H., & Donnelly, R. F. (2023). Development and Evaluation of an Innovative Approach Using Niosomes Based Polymeric Microneedles to Deliver Dual Antioxidant Drugs. *Polymers*, 15(8), 1962.
 17. **Zaid Alkilani, A.**, Musleh, B., Hamed, R., Swellmeen, L., & Basheer, H. A. (2023). Preparation and Characterization of Patch Loaded with Clarithromycin Nanovesicles for Transdermal Drug Delivery. *Journal of Functional Biomaterials*, 14(2), 57.
 18. **Zaid Alkilani, A.**, Abu-Zour, H., Alshishani, A., Abu-Huwaij, R., Basheer, H. A., & Abo-Zour, H. (2022). Formulation and evaluation of niosomal alendronate sodium encapsulated in polymeric microneedles: In vitro studies, stability study and cytotoxicity study. *Nanomaterials*, 12(20), 3570.
 19. **Alkilani, A.Z.**, Hamed, R., Abdo, H., Swellmeen, L., Basheer, H. A., Wahdan, W., & Abu Kwiak, A. D. (2022). Formulation and Evaluation of Azithromycin-Loaded Niosomal Gel: Optimization, In Vitro Studies, Rheological Characterization, and Cytotoxicity Study. *ACS omega*.
 20. **Alkilani, A.Z.**, Nimrawi, S., Al-Nemrawi, N. K., & Nasereddin, J. (2022). Microneedle-assisted transdermal delivery of amlodipine besylate loaded nanoparticles. *Drug Development and Industrial Pharmacy*, 1-11.
 21. **Alkilani, A. Z.**, Nasereddin, J., Hamed, R., Nimrawi, S., Hussein, G., Abo-Zour, H., & Donnelly, R. F. (2022). Beneath the Skin: A Review of Current Trends and Future Prospects of Transdermal Drug Delivery Systems. *Pharmaceutics*, 14(6), 1152.
 22. **Alkilani, A.**, Hamed, R., Hussein, G., & Alnadi, S. (2021). Nanoemulsion-based patch for the dermal delivery of ascorbic acid. *Journal of Dispersion Science and Technology*, 1-11.
 23. Hamed, R., Mahmoud, N. N., Alnadi, S. H., **Alkilani, A. Z.**, & Hussein, G. (2020). Diclofenac diethylamine nanosystems-loaded bigels for topical delivery: development,

- rheological characterization, and release studies. *Drug Development and Industrial Pharmacy*, 46(10), 1705-1715.
24. Hamed, R., Kamal, A., & **Alkilani**, A. Z. (2020). Gelation and rheological characterization of Carbopol® in simulated gastrointestinal fluid of variable chemical properties. *Pakistan Journal of Pharmaceutical Sciences*, 33(3).
25. **Alkilani**, A. Z., Alkalbani, R., Jaber, D., Hamed, R., Hamad, I., Abumansour, H., & Assab, M. A. (2019). Knowledge, attitude, practice and satisfaction of patients using analgesic patches in Jordan. *Tropical Journal of Pharmaceutical Research*, 18(8).
26. Development and in-vitro characterization of nanoemulsion-based buccal patches of valsartan , Abu-Huwaij, R. Hamed, R., Daoud , E., **Alkilani**, A. Z., *Acta Poloniae Pharmaceutica*, Vol. 76 No. 2 , 2019
27. **Alkilani**, A. Z., Hamed, R., Al-Marabeh, S., Kamal, A., Abu-Huwaij, R., & Hamad, I. (2018). Nanoemulsion-based film formulation for transdermal delivery of carvedilol. *Journal of Drug Delivery Science and Technology*, 46, 122-128.
28. Hamed, R., Al Baraghthi, T., **Alkilani**, A. Z., & Abu-Huwaij, R. (2016). Correlation between rheological properties and in vitro drug release from penetration enhancer-loaded Carbopol® gels. *Journal of Pharmaceutical Innovation*, 11(4), 339-351.
29. Eltayib, E., Brady, A. J., Caffarel-Salvador, E., Gonzalez-Vazquez, P., **Alkilani**, A. Z., McCarthy, H. O., ... & Donnelly, R. F. (2016). Hydrogel-forming microneedle arrays: potential for use in minimally-invasive lithium monitoring. *European Journal of Pharmaceutics and Biopharmaceutics*, 102, 123-131.
30. **Alkilani**, A., McCrudden, M. T., & Donnelly, R. (2015). Transdermal drug delivery: innovative pharmaceutical developments based on disruption of the barrier properties of the stratum corneum. *Pharmaceutics*, 7(4), 438-470.
31. McCrudden, M. T., **Alkilani**, A. Z., Courtenay, A. J., McCrudden, C. M., McCloskey, B., Walker, C., ... & Donnelly, R. F. (2015). Considerations in the sterile manufacture of polymeric microneedle arrays. *Drug delivery and translational research*, 5(1), 3-14.
32. Donnelly, R. F., McCrudden, M. T., **Alkilani**, A. Z., Larrañeta, E., McAlister, E., Courtenay, A. J., ... & Caffarel-Salvador, E. (2014). Hydrogel-forming microneedles

- prepared from “super swelling” polymers combined with lyophilised wafers for transdermal drug delivery. PLoS One, 9(10), e111547.
33. Donnelly, R. F., Moffatt, K., **Alkilani**, A. Z., Vicente-Pérez, E. M., Barry, J., McCrudden, M. T., & Woolfson, A. D. (2014). Hydrogel-forming microneedle arrays can be effectively inserted in skin by self-application: a pilot study centred on pharmacist intervention and a patient information leaflet. *Pharmaceutical research*, 31(8), 1989-1999.
 34. Donnelly, R. F., Morrow, D. I., McCrudden, M. T., **Alkilani**, A. Z., Vicente-Pérez, E. M., O'Mahony, C., ... & Woolfson, A. D. (2014). Hydrogel-forming and dissolving microneedles for enhanced delivery of photosensitizers and precursors. *Photochemistry and photobiology*, 90(3), 641-647.
 35. McCrudden, M. T., **Alkilani**, A. Z., McCrudden, C. M., McAlister, E., McCarthy, H. O., Woolfson, A. D., & Donnelly, R. F. (2014). Design and physicochemical characterisation of novel dissolving polymeric microneedle arrays for transdermal delivery of high dose, low molecular weight drugs. *Journal of controlled release*, 180, 71-80.
 36. Donnelly, R. F., Singh, T. R. R., **Alkilani**, A. Z., McCrudden, M. T., O'Neill, S., O'mahony, C., ... & Woolfson, A. D. (2013). Hydrogel-forming microneedle arrays exhibit antimicrobial properties: potential for enhanced patient safety. *International journal of pharmaceutics*, 451(1-2), 76-91.

Books

1. **Alkilani**, A.Z. (2018). Genesis of Transdermal Drug Delivery. In *Microneedles for Drug and Vaccine Delivery and Patient Monitoring*, F. D. Ryan (Ed.). doi:[10.1002/9781119305101.ch1](https://doi.org/10.1002/9781119305101.ch1). **John Wiley and Sons**, Incorporated.
2. Singh, T. R. R., McMillan, H., Mooney, K., **Alkilani**, A. Z., & Donnelly, R. F. (2017). Fabrication of Microneedles. In *Percutaneous Penetration Enhancers Physical Methods in Penetration Enhancement* (pp. 305-323). **Springer**, Berlin, Heidelberg.
3. Donnelly, R. F., Garland, M. J., & **Alkilani**, A. Z. (2014). Microneedle-iontophoresis combinations for enhanced transdermal drug delivery. In *Drug Delivery System* (pp. 121-132). **Springer** New York.
4. Singh, T. R. R., McMillan, H., Mooney, K., **Alkilani**, A., & Donnelly, R. (2013). Microneedles for drug delivery and monitoring. *Microfluidic Devices for Biomedical Applications*, X. Li and Y. Zhou, Editors, 185-230, **Elsevier**.

Presentations in International conferences

- **Zaidalkilani, A., Thakur, T.R.R., and Donnelly, R.F., (2012).** Optical Coherence Tomographic characterization of skin insertion of polymeric microneedle loaded with ovalbumin. Proceedings of the 2nd International Conference on Microneedles, Cork, Ireland.
- **Zaidalkilani, A., Thakur, T.R.R.,and Donnelly, R. F., (2012).** Physical and Electrical Characterization of Films Intended For Use in Electrically Assisted Transdermal Drug Delivery.Proceedings of the UKPharmSci Conference, Nottingham.UK
- **Zaidalkilani, A., Thakur, T.R.R., and Donnelly, R.F., (2013).**Hydrogel microneedle array assisted iontophoretic transdermal delivery of a model protein Proceedings of the 2013 UKICRS Symposium, Belfast. UK
- **Zaidalkilani, A., Thakur, T.R.R.,and Donnelly, R. F., (2014).** Influence of polymer concentration, crosslinker molecular weight and swelling conditions upon the diffusion parameter of polyethylene glycol – crosslinked poly (methyl vinyl ether-co-maleic acid) films intended for transdermal applications .Stratum Corneum VIII Conference, Cardiff .UK
- **A Zaidalkilani, R Thakur and R F Donnelly (2016) .** Electrically assisted transdermal drug delivery of Ovalbumin. 8th International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems, Madrid, Spain
- **A Zaidalkilani, R Thakur and R F Donnelly (2017).** Characterization of hydrogel films intended for transdermal applications. 6th Pharmaceutical Sciences World Congress. Stockholm, Sweden.
- **A Zaidalkilani, (2018).** Electrically responsive hydrogel films mediated iontophoretic transdermal drug delivery” at Pharma Europe “15th Annual European Pharma Congress” Frankfurt, Germany.

- A **Zaidalkilani**, H. Abo zour (2019). Fabrication and characterization of transdermal patch loaded with Ascorbic acid” 3rd Edition of Global Conference on Pharmaceutics and Drug Delivery Systems” PDDS, Paris, France
- A **Zaidalkilani**, H Abdo (2021). Development and evaluation of azithromycin-loaded niosomes for enhanced transdermal delivery in pediatrics patients. 12th World Meeting on Pharmaceutics, Biopharmaceutics and Pharmaceutical Technology, May 2021 | Online Conference
- A **Zaidalkilani** (2022). Development and evaluation of an innovative approach using niosomes based dissolving microneedles to deliver dual antioxidant drugs . 80th FIP WORLD CONGRESS OF PHARMACY AND PHARMACEUTICAL SCIENCES” Seville, Spain.
- A **Zaidalkilani** (2023). Design and Evaluation of Colon-Targeted Dexamethasone Solid Dispersions for Inflammatory Bowel Disease. 2023 AAPS PharmSci 360 October 22-25, 2023, Orlando, FL. USA.
- **A. Zaidalkilani** (2024). Design and Evaluation of a Novel Dermal Delivery System Loaded with bioactive compounds in Spanlastics. CRS2024, July 8-12, 2024, Bologna, Italy .

Student Research Supervision:

1. Sukaina Alnimrawi (2019-2020) Master student. Advisor Thesis title: Nanoparticle Based Microneedle for Transdermal Delivery of Amlodipine Besylate
2. Hadeel Mohammed Abozour (2019-2021) Master student. Advisor Thesis title: Formulation and Evaluation of Dissolving Microneedle System Containing a Combination of Ascorbic Acid and Caffeine Niosomes for Dermal Drug Delivery.

3. Sarah Adnan Anees Omar (2019-2021) Master student. Advisor Thesis title: Design and evaluation of solid dispersion for inflammatory bowel disease
4. Hana Abo-Zour (2019—2021), Master student Advisor thesis title: Formulation and characterization of transdermal delivery of alendronate.
5. Zaina Alshariri (2021—2022), Master student Advisor thesis title : Preparation and characterization of transdermal delivery of doxycycline
6. Batool Altarifi (2021—2022), Master student Advisor thesis title : Formulation and characterization of transdermal delivery system for Clarithromycin
7. Lena almasri (2022—2023), Master student Advisor thesis title : Formulation and evaluation of transdermal delivery system loaded with cefuroxime axetil
8. Ruaa Alkhaledi (2022—2023), Master student Advisor thesis title: Design and evaluation of a niosomal gel system for bioactive compounds.
9. Hiba Almolqi (2024-2026) Master student Advisor thesis title: Design and evaluation of transdermal delivery of probiotics for skin diseases
10. Raneen Farj (2024-2026) Master student Advisor thesis title: Design and evaluation of delivery system loaded with Boswellia spp. Extract.
11. Ghaid Hussein.(2016-2018) Master student Co-Advisor thesis title: Design and evaluation of a transdermal drug delivery system of indapamide utilizing glyceryl monooleate
12. Nareman Aldaajeh (2022-2024) Master student Co-Advisor thesis title: transdermal delivery of rizatriptan using microneedles array patch : preaprtion , characterization and in vitro /in vivo studies
13. Enas Hasan (2023-2026) Phd student Co-Advisor thesis title: Preparation and evaluation of Ivacaftor nanoparticles based microneedles for transdermal drug delivery for the treatment of Cystic Fibrosis

Grants Accomplished and On-going:

- **Research grant from Zarqa University-2019:** Evaluation of transdermal absorption of carvedilol patches by animal studies. Budget: **164500 JD**
- **Research grant from Scientific Research and Innovation Support Fund-2021:** The role of glutaminase expression in Jordanian breast cancer patients towards development and pharmacological characterization of a novel metformin/glutaminase inhibitor (CB-839) nanoparticle formulation. Budget: **62800 JD**

- **Research grant from Zarqa university-2015:** Nanoemulsion-based film formulation for transdermal delivery of carvedilol. **Budget: 15000 JD**
- **The 2024 L'ORÉAL-UNESCO "For Women in Science Levant program" Fellowship. Budget** "Enhancing Transdermal Delivery of Meloxicam for Rheumatoid Arthritis Management: Exploring Nanoparticle-Mediated Approaches"; Principal Investigator, [09/2024],: **10000 Euro**