

## CURRICULUM VITAE

### Full name

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### 1. Personal Data

Date of Birth: 26<sup>th</sup> of February 1981

Nationality: Jordanian

### 2. Education

- Ph.D. (Pharmaceutical Sciences) 2016, The University of Jordan, Amman, Jordan
- M.Sc. (Clinical Pharmacy) 2007, The University of Jordan, Amman, Jordan
- B.Sc. (Pharmacy) 2003, The University of Jordan, Amman, Jordan

### 3. Ph.D. Dissertation

*Penetration and Distribution of Gold Nanoparticles into Skin: Effect of Nanoparticle Size, Shape And Surface Chemistry On Hair Follicles Targeting And Antibacterial Activity, The University of Jordan, Amman, Jordan.*

### 4. Employment

#### Academic Positions

- Assistant Professor, Department of Pharmacy, Al-Zaytoonah University of Jordan, Amman, Jordan. Sep 19, 2016 – now



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**Administrative Positions**

- Not Applicable

**5. Research Interests**

- Nanotechnology and Nanomedicine; nano-bio interface; designing of novel nanomaterials for cancer treatment.

**6. Membership in Scientific Societies and Associations**

- Jordan Pharmacists Association
- Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) Jordanian National Committee (SJNC)

**7. Honors and Awards**

Not applicable

**8. Fellowships and Scholarships**

Not applicable

**9. Teaching Experience**

- *Undergraduate Courses*

1. Pharmaceutics 2
2. Pharmaceutics and Pharmaceutical Compounding Lab
3. Pharmaceutical Technology
4. Pharmaceutical Technology Lab
5. Pharmaceutical Communication Skills

**10. Supervision of Graduate Research**

1. Duaa Suliman Abu-Ghaith, Novel gold nanocomposite for wounds healing in rats: effect of nanoparticles' shape and surface chemistry, **2017/2018**.
2. Abdul-raheem Al-Basha, Penetration of Gold Nanoparticles Through Blood Brain Barrier and their Accumulation into The Brain: Effect of Nanoparticles' Shape and Surface Chemistry, **2018/2019**.



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## 11. Grants

1. Interaction of Gold Nanorods-Gel Composite with Human Skin Hair Follicles: The Colloidal Stability and Preferential Targeting. Principal investigator, Funded by AL-Zaytoonah University of Jordan, 2017 (**23,000 JD**).
2. The Surface properties of nanoemulsions for drug delivery through skin. Co-investigator Funded by AL-Zaytoonah University of Jordan, 2017. (**28,000 JD**).
3. Gold Nanorods Loaded into Gels: Colloidal Stability, Rheological Properties, Photothermal Properties and Penetration extent into Excised Human Skin. Principal Investigator, Funded by Abdul hameed Shoman Foundation, Amman- Jordan, 2017 (**15,000 JD**).
4. Nanoemulsion- and Gold Nanoparticles Loaded Diclofenac Diethylamine in Bigels: Development, Rheological Characterization, and In-Vitro and Ex-Vivo Release Studies. Co-investigator, Funded by Scientific Research Support Fund, 2018 (**14,079 JD**).
5. Evaluation of Melanin-mimetic Polydopamine Nanoparticles for Transdermal Drug Delivery: Effect of Surface Chemistry. Co-investigator, Funded by Abdul hameed Shoman Foundation, Amman- Jordan, 2017 (**19,500 JD**).

## 12. Patents

- Not Applicable

## 13. Membership of Committees

- **National and International:**
  - *Pharmaceutical Drug Registration Committee at Jordan Food and Drug Administration (JFDA): member and technical consultant*
  - *Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) Jordanian National Committee (SJNC)*
- **University:**
  - *The Committee for Quality Assurance, a Faculty committee (member).*
  - *The Committee for Scientific Research, a Faculty committee (member).*
  - *The Committee for Extra-Curricular activities and Community Services, a Faculty committee (Chair).*



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- *The Committee for Curricular Equivalence and Academic Advisement, and Training, and Alumni Follow-up, a Faculty committee (member)*

#### **14. Professional and Scientific Meetings**

##### *Scientific Meetings Organized*

- Member of the Organizing Committee of the *Al-Zaytoonah University of Jordan & The University of Toledo International Pharmaceutical Conference (ZTIPC 2017)*, Amman, Jordan, 29<sup>th</sup> to 30<sup>th</sup> of November 2017.

##### *Participation in Scientific meetings*

1. 9th International Petra School of Physics “Nano Physics: Fundamentals and Applications” Amman, Petra, Jordan, *Attendance*, 9 - 12 Oct **2018**.
2. The 5<sup>th</sup> Middle East Molecular Biology Congress and Exhibition, *Attendance*, Joran 3-6 Oct **2018**.
3. The 15th Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) Users Meeting; *Attendance*, Amman, Jordan. Dec **2017**.
4. World Science Forum 2017 Jordan; *Attendance*, Amman, Jordan. Nov **2017**.
5. The 10<sup>th</sup> Scientific Workshop for Synchrotron-Light for Experimental Science and Applications in the Middle East (SESAME) Users: TAIEX Workshop on GEANT H2020 and European Synchrotron Sources; *Attendance*, Amman, Jordan. Aug **2017**.
6. Pharmacy Third Conference “Recent Trends in Postgraduate Research”; *Attendance*, Applied Sciences University, Amman, Jordan. April **2017**.
7. The 10<sup>th</sup> Scientific day, Faculty of Pharmacy and Medical Sciences; *Attendance*, Petra University, Amman, Jordan. April **2017**.
8. “Support to Research, Technological Development and Innovation in Jordan” “SRTD-II”, project; *Attendance*, Amman, Jordan. Feb **2017**.
9. “Gold Nanoparticles”, workshop, The University of Jordan, Amman, Jordan. Dec **2016**.
10. The 13<sup>th</sup> International Conference on X-ray Microscopy; *Attendance*, Oxford University, Oxford, UK. Aug **2016**.



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11. "Inductively Coupled Plasma-Optical Emission Spectroscopy", Workshop, Hamdi Mango Center for Scientific Research (HMCSR), the University of Jordan, Amman. Feb **2015**
12. Diamond Light Source, UK's national synchrotron science facility; *Scientific visit and training*, Oxford, UK. July **2017**.
13. "Test Construction and Analysis of Results", Training course, Al-Zaytoonah University of Jordan, Amman, Jordan. June **2017**.

#### **15. Participation in or organization of curricular and/or extra-curricular activities**

- University's 9<sup>th</sup> Career Day and Career Day for Pharmacy students on 5<sup>th</sup> of May 2017 with the participation of 15 pharmaceutical companies and pharmacies.
- University's 10<sup>th</sup> Career Day on 24<sup>th</sup> of April 2018.
- Career Day for 5<sup>th</sup> year students in March 2018 at Al-Zaytoonah University of Jordan.
- The 1<sup>st</sup> Exhibition for extra-curricular activities at Al-Zaytoonah University of Jordan, 21<sup>th</sup> of March 2017.
- Several Alumni and medical days and public lectures and presentations held in Al-Zaytoonah University of Jordan campus.

#### **16. Publications**

- Papers in refereed journals:
  1. **Mahmoud, N.N.**, Harfouche, M., Alkilany, A.M., Al-Bakri, 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*, 538-539.
  2. **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* (**2018**). *Scientific Reports* 8, Article number: 6881.
  3. **Mahmoud, N.N.**, Harfouche, M., Alkilany, A.M., Al-Bakri, A.G. El-Qirem, R.A., Shraim, S.A., Khalil, E.A. Synchrotron-based X-ray fluorescence study of gold



QF11/0110 - 3.0E

Curriculum Vitae Form - Procedures of Faculty Transfer and Promotion

nanorods and skin elements distribution into excised human skin layers (2018). *Colloids and Surfaces B: Biointerfaces* 165 C, 116-128.

4. **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 (2017). *International Journal of Nanomedicine* 12, 7311-732.
5. **Mahmoud, N.N.**, Alkilany, A. M., Dörthe Dietrich, Uwe Karst, Bakri, A. G. and Khalil, E. A. Preferential accumulation of gold nanorods into human skin hair follicles: Effect of nanoparticle surface chemistry (2017). *Journal of Colloids and Interface Science* 503, 95-102.
6. **Mahmoud, N. N.**, Al-Qaoud, K. M., Al-Bakri, A. G., Alkilany, A. M., and Khalil, E. A. Colloidal stability of gold nanorod solution upon exposure to excised human skin: Effect of surface chemistry and protein adsorption (2016). *The International Journal of Biochemistry & Cell Biology* 75, 223-231.
7. Alkilany, A. M., **Mahmoud, N.N.**, Hashemi, F., Hajipour, M. J., Farvadi, F., and Mahmoudi, M. (2016) Misinterpretation in Nanotoxicology: A Personal Perspective. *Chemical Research in Toxicology* 29, 943-948.
8. Altarawneh, O., Madi, A., Hamed, R., Qirem, R., Qerem, W., Alhusban, A., Sunoqrot, S., **Mahmoud, N.**, Ata, A., and Isheikh, I. In vitro Characterization and Evaluation of Commercialized Paracetamol Products in Jordan. *Dissolution Technologies*, (2018), Accepted.

- Books and Book Chapters:

- Not Applicable

- **Conference Presentations:**

1. **Mahmoud, N.N.**, Harfouche, M., Alkilany, A.M., Al-Bakri, Khalil, E.A. "Correlation between ICP-OES and Synchrotron-XRF in Detecting the Penetration of Gold Nanorods into Excised Human Skin Layers", The 14<sup>th</sup> International Conference on X-ray Microscopy; *poster presentation*, Saskatoon, Canada. Aug 2018.
2. **Mahmoud, N.N.** "Application of Synchrotron-XRF in Detection of Gold Nanorods Penetration through Skin Layers"; *Oral presentation- workshop*, School of Pharmacy, The University of Jordan, Amman, Jordan. April 2018.



QF11/0110 - 3.0E

Curriculum Vitae Form - Procedures of Faculty Transfer and Promotion

3. **Mahmoud, N.N.** “Applications of Prism Program in Scientific Data Analysis and Interpretations”; *Oral presentation*- workshop, School of Pharmacy, The University of Jordan, Amman, Jordan. April **2018**.
4. **Mahmoud, N.N.**, Alkilany, A. M., Dörthe Dietrich, Uwe Karst, Bakri, A. G. and Khalil, E. A. “Preferential Accumulation of Gold Nanorods into Human Skin Hair Follicles: Effect of Nanoparticle Surface Chemistry”; *Oral presentation*, Al-Zaytoonah University of Jordan and The University of Toledo International Pharmaceutical Conference (ZTIPC 2017), Amman, Jordan. Nov **2017**.
5. **Mahmoud, N.N.**, Alkilany, A. M., Dörthe Dietrich, Uwe Karst, Bakri, A. G. and Khalil, E. A. “Gold Nanoparticles-Skin Interface: Targeting into Hair Follicles”; *Oral presentation*, the Scientific Day, Philadelphia University, Amman, Jordan. May **2017**.
6. **Mahmoud, N.N.**, Alkilany, A.M., Al-Bakri, Khalil, E.A. “Colloidal Stability and Penetration Extent of Gold Nanorods of Different Surface Chemistry Upon contact with Excised Human Skin”; *Poster presentation*, The 4th International Pharmaceutical Conference, The University of Jordan, Amman, Jordan. Oct **2016**.
7. **Mahmoud, N.N.**, Alkilany, A.M., Al-Bakri, Khalil, E.A. “Gold Nanoparticles-Skin Interface: Effect of Nanoparticles Colloidal Stability and Surface Chemistry”; *Oral presentation*, Nano-Tech workshop, The University of Jordan, Amman, Jordan. Oct **2016**.
  - Reports
    - Not Applicable