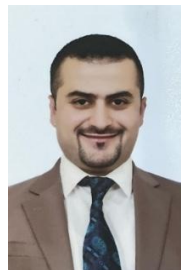


## CURRICULUM VITAE

### 1. PERSONAL DATA

**Name:** Mo'tasem M. Alsmadi  
**Date of Birth:** 7/1/1985  
**Place of Birth:** Irbid, Jordan  
**Nationality:** Jordanian  
**Contact Address:** P.O.Box 3030, Irbid  
22110, Jordan  
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### 2. BIOGRAPHY:

Dr. Alsmadi is an associate professor and joint faculty member of pharmaceutical technology and nanotechnology and he is currently the Vice Dean of the Nanotechnology Institute.

Dr. Mo'tasem started as an assistant professor of pharmaceutical technology at the Pharmacy School at JUST till September 2020. During that period, Dr. Alsmadi worked as an assistant dean at the Pharmacy School and also as an assistant dean at the Graduate Studies School.

In September 2020, Dr. Alsmadi was promoted to an associate professor. Then, in January 2023, Dr. Alsmadi was appointed as a joint professor in the Nanotechnology Institute. During this joint appointment, Dr. Alsmadi taught graduate-level courses and supervised master's students at the Nanotechnology Institute in projects related to targeted drug delivery to the brain, pancreas, and lungs using nano-drug delivery systems. This is in addition to Dr. Alsmadi's involvement in teaching undergraduate (B.Sc and Pharm D.) and graduate (MSc, and Ph.D.) courses and supervision of master's students at Pharmacy School.

Then, in September 2024, Dr Mo'tasem was appointed as a Vice Dean of the Nanotechnology Institute. During which, Dr. Alsmadi pursued several administrative jobs related to Nanotechnology Graduate students affairs, M.Sc of Nanotechnology and Engineering program placement in the National Qualifications Framework, Establishment of a new M.Sc program of Water-Food-Energy (WEF) Nexus, and the preparation of the application of the El-Hasan Bin Talal Award for Excellence 2024.

Dr. Alsmadi has been involved in research related to the preparation and optimization of novel nano and micro drug delivery systems for pancreas, liver, brain, and lung delivery to treat diseases like COVID-19, cancer, insomnia, diabetes, and hypercholesteremia. Also, Dr. Motasem pursued preclinical and clinical research using physiologically-based pharmacokinetic (PBPK) modeling on anticancer drugs in the presence of modified body physiology induced by cancer, renal impairment, IBS, IBD, and pregnancy. Further, therapeutic drug monitoring of drugs in saliva to optimize dosing regimens was among the research interests of Dr. Alsmadi. This is in addition to Dr. Alsmadi's involvement in the evaluation of newborn safety after intrauterine exposure to maternal opioids used during pregnancy. Overall, Dr. Alsmadi has expertise in *in-vitro*, *in-vivo*, and *in-silico* tools used for nano-drug delivery systems fabrication and characterization, biosafety, biopharmaceutics, toxicokinetics, and pharmacokinetics analysis.

### 3. ACADEMIC/PROFESSIONAL PARTICULARS

**(a) Field of Specialization:**

Pharmaceutics/ Biopharmaceutics and Pharmacokinetics.  
Nanomedicine and *in vivo* safety and toxicokinetics of drug delivery systems.

**(b) Academic Qualifications**

Ph.D., Pharmaceutics, 2014, University of Iowa, USA, Dissertation Title: Physiologically based pharmacokinetic (PBPK) model of Ivermectin (IVM), GPA = 3.84

BSc, Pharmacy, 2008, Jordan University of Science and Technology, Jordan, Dissertation Title: NA, GPA = 91.9% (Rank 1<sup>st</sup> on batch)

**(c) Academic Honors and Awards**

Ranking 1<sup>st</sup> in 2003 Batch of BSc. in Pharmacy, Jordan University of Science and Technology, 2003-2008

### 4. CAREER DETAILS

**(a) Academic Positions Held**

Associate Professor, Nanotechnology Institute, Jordan University of Science and Technology, Jordan, Period (01/2023- Now)

Associate Professor, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (09/2020- Now)

Assistant Professor, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (12/2014- 08/2021)

**(b) Professional/Industrial Positions Held**

Medical Representative, Gynecology Department, Bayer Schering Pharma, Jordan, Period (01/2008-10/2008)

**(c) Administrative Positions Held (Dates: MM/YY-MM/YY)**

Vice Dean, Nanotechnology Institute, Jordan University of Science and Technology, Jordan, Period (09/2023- Now)

Assistant Dean, Deanship of Graduate Studies, Jordan University of Science and Technology, Jordan, Period (09/2019- 09/2021)

Assistant Dean, College of Pharmacy, Jordan University of Science and Technology, Jordan, Period (09/2015- 09/2019)

## 5. TEACHING

### (a) Summary of Courses Taught

- WEF700: Research Seminar: WEF NEXUS, Taught once, Excellent evaluation.
- PHAR753: Research Methodology, Taught once, Excellent evaluation
- Nano 700: Introduction to Nanoscience and Nanotechnology, Taught once, Excellent evaluation
- Phar456 (PHAR355), Bio Pharmaceutics and Pharmacokinetics, Taught eighteen times, Excellent evaluation
- Phar 553 (PHMD358), Clinical Pharmacokinetics (For Pharm D Students), Taught nineteen times, Excellent evaluation
- Phar401, Pharmaceutical Practical Training, Taught three times, Excellent evaluation
- Phar 402, Community Pharmacy (For Pharm.D Students, Phar 402), Taught twice, Excellent evaluation
- Phar 351, Pharmaceutics 1, Taught once, Excellent evaluation
- Phar 756, Biopharmaceutics and Pharmacokinetics (For Masters students), Taught twice, Excellent evaluation
- Phar 951, Advanced Biopharmaceutics and Pharmacokinetics (For Ph.D. students), Taught twice, Excellent evaluation

### (b) Participation in Academic Accreditation

Jordanian Accreditation. Leading and Preparation of files needed for Accreditation of Nanotechnology Institute. Period (09/2024-09/2025)

Maylasian Accreditation. Preparation of files needed for Pharmacy School Accreditation. Period (09/2024-09/2025)

Jordanian Accreditation. Preparation of files needed for Accreditation of Pharmacy School. Period (09/2024-09/2025)

ACPE, Preparation of files needed for ACPE Accreditation for Pharmacy School , Institution, ACPE, Period (09/2017-09/2019)

### (c) Research Students Supervised/Trained

Postdoctoral Fellows: NA

PhD Students: 6

Master Students: 15

Undergraduate Students: 150 students

### (d) Participation in Thesis and Oral Examination Committees

Ph.D. Students: 6

Master Students: 15

Updated on 01/06/2025

#### **(e) Training**

- Creative teaching in university education, Jordan University of Science and Technology, Jordan, Period (06/1-2/2015)
- Statistical analysis in scientific research, Jordan University of Science and Technology, Jordan, Period (1/31/2016 – 2/1/2016)
- Statistical analysis Using Minitab, Jordan University of Science and Technology, Jordan, Period (01/16-17/2017)
- Statistical analysis Using R, Jordan University of Science and Technology, Jordan, Period (01/25-26/2017)
- Problem-based learning, Jordan University of Science and Technology, Jordan, Period (01/10-11/2018)
- Applying the matrix of criteria for quality control of the design of electronic courses from Quality Matters Institution, Jordan University of Science and Technology, Jordan, Period (06/1-2/2022)
- Evaluation of the teaching process and scientific research to increase the level of student's success and the mechanisms of activating their participation in large classes, Jordan University of Science and Technology, Jordan, Period (06/1-2/2022)
- Communication skills and their impact on changing behaviors and ideas, developing multiple intelligences, and solving educational problems, Jordan University of Science and Technology, Jordan, Period (08/10-11/2022)
- Effective e-learning design, Jordan University of Science and Technology, Jordan, Period (08/17-18/2022)

### **6. RESEARCH**

#### **(a) Research Interests**

- Fabrication and *in vivo* characterization of nanomedicine biosafety and efficacy.
- Biopharmaceutics and Pharmacokinetics
- Physiologically-based Pharmacokinetics

#### **(b) Publications/Citations Data**

Type of Publication/ Number of Publications

Articles in International Refereed Journals: 28

Conference Papers: 5

Citation Source Number of Citations: Scholar Google: 340 citations (H-index: 12)

#### **(c) Research Grants**

- Local University Fund for Personal Research, Principle Investigator, The Synthesis and Characterization of Nanoparticles Loaded with Irinotecan and Gemcitabine for Pancreatic Cancer-Targeted Therapy, Jordan University of Science and Technology, (04/2025-present), USD 13,300

Updated on 01/06/2025

- Local University Fund for Personal Research, Principle Investigator, The effect of inflammatory bowel disease and irritable bowel syndrome on the pharmacokinetics of two biopharmaceutics class (BCS) III drugs: Digoxin and Doxorubicin, Jordan University of Science and Technology, (12/2024-present), USD 14,000
- Local University Fund for Personal Research, Principle Investigator, Azithromycin dihydrate is coated with a pH-sensitive eudragit polymer to mask the bitter taste, Jordan University of Science and Technology, (04/2022-02/2025), USD 8,500
- Local University Fund for Master's Thesis, Co-Investigator, Formulation And in Vitro/in Vivo Evaluation of Levodopa-Loaded Nanoparticles, Jordan University of Science and Technology, (6/2024 – Present), USD 8,800
- Local University Fund for Master's Thesis, Co-Investigator, Design of dual-loaded mesoporous silica nanocarrier as a promising drug delivery strategy for enhanced treatment of type 1 diabetes, Jordan University of Science and Technology, (6/2024 – Present), USD 8,000
- Local University Fund for Master's Thesis, Co-Investigator, Melatonin novel nano formulation for brain delivery, Jordan University of Science and Technology, (7/2024 – Present), USD 8,500
- Local University Fund for Master's Thesis, Principle Investigator, The Synthesis and Characterization of Selenium-Based Nanoparticles Loaded with Irinotecan and Gemcitabine for Pancreatic Cancer Targeted Therapy, Jordan University of Science and Technology, (12/2024 – Present), USD 8,800
- Local University Fund for Master's Thesis, Principle Investigator, Formulation and evaluation of oral administration of cilnidipine nanocrystals for treatment Hypertension diseases by enhancement solubility and dissolution rate, Jordan University of Science and Technology, (07/2023 – Present), USD 7,700
- Local University Fund for Master's Thesis, Co-Investigator, Physiologically-Based Pharmacokinetics of a Novel Hydroxychloroquine Formulation Prepared Using Supercritical Fluid Technology for Pulmonary Administration, Jordan University of Science and Technology, (08/2021 – 01/2023), USD 8,000
- Local University Fund for Master's Thesis, Principle Investigator, Effect of Inflammatory Bowel Disease and Irritable Bowel Syndrome on The Bioavailability of Statins, Jordan University of Science and Technology, (01/2020 – 01/2022), USD 8,000
- Local University Fund for Master's Thesis, Principle Investigator, The Effect of Acute And Chronic Renal Failure On The Pharmacokinetics of Bexarotene, Jordan University of Science and Technology, (05/2020 – 06/2022), USD 8,000
- Local University Fund for Master's Thesis, Co-Investigator, The development of a population physiologically based pharmacokinetic model for mycophenolic mofetil and

mycophenolic acid in humans using data from plasma, saliva, and kidney tissue, University of Petra, (02/2017 – 10/2018), USD 6,000

- Local University Fund for Personal Research, Principle Investigator, The effect of renal impairment on the hepatic metabolism of atomoxetine, Jordan University of Science and Technology, 2017 – 2019, USD 20,000
- Local University Fund for Personal Research, Principle Investigator, The study of the in vitro physiochemical and pharmacokinetic properties of the potent anticancer drug (QNH-558), Jordan University of Science and Technology, 2016 – 2018, USD 20,000

#### **(d) Participation in Regional and International Conferences**

10th International Conference on Nanomedicine, Drug Delivery, and Tissue Engineering (NDDTE 2025). Barcelona , Spain. April 6-8, 2025, Enhanced Solubility and Dissolution of Cilnidipine Nanocrystals for Oral Administration: Fabrication and Evaluation

Formulation & Delivery 2024. London, UK. April 25-26, 2024. Pharmacokinetics and In-Vivo Distribution of Cisplatin after Inhalation of Chitosan-Alginate Nanoporous Carriers as Measured Using ICP-MS

ICAM-2025, Irbid/ Jordan, 05/2025, Development and Characterization of Chitosan-Coated Doxorubicin-Loaded Niosomes for Sustained Drug Delivery

ICAM-2025, Irbid/ Jordan, 05/2025, Preparation and In-vitro Characterization of Targeted brain delivery of Melatonin Using Pegylated-Chitosan Nanoparticles

ICAM-2025, Irbid/ Jordan, 05/2025, Design of Dual-Loaded Mesoporous Silica Nanocarrier as a Promising Drug Delivery Strategy for Enhanced Treatment of Type 1 Diabetes

2nd International Conference on Pharmacology and Toxicology, Dubai/ United Arab Emirates, 14 /11/2022- 15/11/2022

## **7. SERVICE**

### **(a) Membership of Institutional, National, or International Scientific Advisory Boards**

Bioequivalence Evaluation Committee, Jordanian Food and Drug Administration, Board Member, (10/2019- 10/2021)

### **(b) Membership of Conference Committees**

Conference Scientific Committee, Member, 3<sup>rd</sup> Pharmacy Conference, Jordan University of Science and Technology, Irbid/ Jordan, 09/2022 - Now

Updated on 01/06/2025

Conference Scientific and Organizing Committee, Organizer and Head of Committee, Five Minutes Talk Competition for Graduate Students, Jordan University of Science and Technology, Irbid/ Jordan, 09/2021 - 09/2022

**(c) Service as Reviewer**

- AAPS PharmSciTech, ISSN No. 1530-9932, Springer (since 01/2020)
- International Journal of Pharmaceutics, ISSN No. 0378-5173, Elsevier (since 02/2022)

**(d) Membership of Journal Editorial Boards**

Guest Editor in Frontiers of Pharmacology, Research Topic: "Saliva vs. Plasma Clinical Studies for Therapeutic Drug Monitoring", ISSN No. 1663-9812, Frontiers Media S.A. (since 06/2022)

**(e) Invited Presentations at Scientific Meetings/Workshops**

The Use of Salivary Therapeutic Drug Monitoring (TDM) Guided by Physiologically-based Pharmacokinetic (PBPK) Modeling in The Optimization of Pharmacotherapy, 2<sup>nd</sup> International Conference on Pharmacology and Toxicology, Dubai/ United Arab Emirates, 14 /11/2022- 15/11/2022

**(f) University Service**

- Jordan University of Science and Technology, Jordan, (09/2023-Now), Member of Graduate Studies School Council (Representative of Nanotechnology Institute)
- Jordan University of Science and Technology, Jordan, (09/22-09/2023), Member of University Council
- Jordan University of Science and Technology, Jordan, (09/17 - 09/2018), Member of Pharmacy School Council
- Jordan University of Science and Technology, Jordan, (09/2021 - 09/2022)
  1. Head of Pharmacy School Quality Control Committee
  2. Member of Pharmacy School Scientific Committee
  3. Member of Pharmacy School Peer Assessment Committee
  4. Member of Pharmacy School General Safety Committee
- Jordan University of Science and Technology, Jordan, (09/2022 - now)
  1. Member of Pharmaceutics Department Peer Assessment Committee
  2. Head of Pharmaceutics Department Pharmacokinetics Focus Group

**(g) Service to Profession/Industry**

Bioequivalence Evaluation Committee, Jordanian Food and Drug Administration, Board Member, (10/2019- 10/2021)

## 8. LIST OF PUBLICATIONS IN INTERNATIONAL REFEREED JOURNALS

1. **Alsmadi, Mo'tasem M.** "Bottom-up PBPK modeling of phenytoin brain disposition in postpartum newborns after intrauterine dosing." *Drug Metabolism and Personalized Therapy* 0 (2024). <https://doi.org/10.1515/dmpt-2024-0037>
2. Mashaqbeh, Hadeia, Rana Obaidat, **Alsmadi Mo'tasem**, Sanaa Bardaweel, and Nabil Hailat. "Characterization and optimization of colon specific nanosponges immobilized polymeric microbeads formulation for the combined delivery of 5-fluorouracil and curcumin." *Journal of Drug Delivery Science and Technology* 99 (2024): 105968. <https://doi.org/10.1016/j.jddst.2024.105968>
3. **Mo'tasem M. Alsmadi**; Alla A. Abudaqqa; Nasir Idkaidek; Nidal A. Qinna; Ahmad Al-Ghazawi. The Effect of Inflammatory Bowel Disease and Irritable Bowel Syndrome on Pravastatin Oral Bioavailability: In vivo and in silico evaluation using bottom-up wbPBPK modeling. *AAPS PharmSciTech.* (2024) 25:86, <https://doi.org/10.1208/s12249-024-02803-z>
4. **Alsmadi, Mo'tasem M.** Salivary Therapeutic Monitoring of Buprenorphine in Neonates After Maternal Sublingual Dosing Guided by Physiologically Based Pharmacokinetic Modeling. *Therapeutic drug monitoring* (2024) <https://doi.org/10.1097/FTD.0000000000001172>
5. Hadeia A. Mashaqbeh; Obaidat, Rana M.; **Alsmadi, Mo'tasem M.** Solvent-Free Method for Masking the Bitter Taste of Azithromycin Dihydrate Using Supercritical Fluid Technology. *Drug Development and Industrial Pharmacy.* 50(2):102-111. <https://doi.org/10.1080/03639045.2023.2298892>
6. **Mo'tasem, M. Alsmadi.** Salivary therapeutic monitoring of methadone toxicity in neonates after transplacental transfer from parturient mothers treated with oral methadone guided by PBPK modeling. *Computational Toxicology* (2023): 100296. <https://doi.org/10.1016/j.comtox.2023.100296>
7. **Alsmadi, M.M.** Evaluating the Pharmacokinetics of Fentanyl in the Brain Extracellular Fluid, Saliva, Urine, and Plasma of Newborns from Transplacental Exposure from Parturient Mothers Dosed with Epidural Fentanyl Utilizing PBPK Modeling. *Eur J Drug Metab Pharmacokinet* (2023). <https://doi.org/10.1007/s13318-023-00842-8>
8. **Alsmadi, M.M.**, Jaradat, M.M., Obaidat, R.M. *et al.* The *In Vitro*, *In Vivo*, and PBPK Evaluation of a Novel Lung-Targeted Cardiac-Safe Hydroxychloroquine Inhalation Aerogel. *AAPS PharmSciTech* **24**, 172 (2023). <https://doi.org/10.1208/s12249-023-02627-3>
9. **Alsmadi, Mo'tasem M.**, and Nasir Idkaidek. The Analysis of Pethidine Pharmacokinetics in Newborn Saliva, Plasma, and Brain Extracellular Fluid After Prenatal Intrauterine Exposure from Pregnant Mothers Receiving Intramuscular Dose Using PBPK Modeling. *European Journal of Drug Metabolism and Pharmacokinetics.* Springer Nature (USA). 1-20. **2023.** <https://doi.org/10.1007/s13318-023-00823-x>.

10. **Alsmadi M**, Alzughoul S. IVIVE of Bexarotene Metabolism in The Presence of Chronic Kidney Disease and Acute Kidney Injury in Rat Using PBPK Modeling and Extrapolation to Human. *Biopharmaceutics & Drug Disposition*. Wiley-Blackwell (UK). **2022**: Nov. <https://doi.org/10.1002/bdd.2337>
11. **Mo'tasem MA**. The investigation of the complex population-drug-drug interaction between ritonavir-boosted lopinavir and chloroquine or ivermectin using physiologically-based pharmacokinetic modeling. *Drug Metabolism and Personalized Therapy*. Walter de Gruyter (Germany). **2022**: Oct 10. <https://doi.org/10.1515/dmpt-2022-0130>
12. **Alsmadi MM**, Al-Nemrawi NK, Obaidat R, Abu Alkahsi AE, Korshed KM, Lahlouh IK. Insights into the mapping of green synthesis conditions for ZnO nanoparticles and their toxicokinetics. *Nanomedicine, Future Medicine Ltd.* (UK). 1281-303. **2022**. <https://doi.org/10.2217/nnm-2022-0092>
13. **Alsmadi MM**, Al-Daoud NM, Obaidat RM, Abu-Farsakh NA. Enhancing Atorvastatin In Vivo Oral Bioavailability in the Presence of Inflammatory Bowel Disease and Irritable Bowel Syndrome Using Supercritical Fluid Technology Guided by wbPBPK Modeling in Rat and Human. *AAPS PharmSciTech.* Springer Nature (USA). 1-20. **2022**. <https://doi.org/10.1208/s12249-022-02302-z>
14. **Alsmadi, M. M.**, L. N. Al-Eitan, N. M. Idkaidek, and K. H. Alzoubi. "The Development of a PBPK Model for Atomoxetine Using Levels in Plasma, Saliva and Brain Extracellular Fluid in Patients with Normal and Deteriorated Kidney Function." *CNS & Neurological Disorders Drug Targets*, Bentham (United Arab Emirates). 704-716. **2022**. <https://doi.org/10.2174/1871527320666210621102437>
15. **Alsmadi, Mo'tasem M.**, Nour M. AL-Daoud, Mays M. Jaradat, Saja B. Alzughoul, Amani D. Abu Kwiak, Salam S. Abu Laila, Ayat J. Abu Shameh, Mohammad K. Alhazabreh, Sana'A. A. Jaber, and Hala T. Abu Kassab. Physiologically-based pharmacokinetic model for alectinib, ruxolitinib, and panobinostat in the presence of cancer, renal impairment, and hepatic impairment. *Biopharmaceutics & Drug Disposition*, Wiley-Blackwell (UK). 263-284. **2021**. <https://doi.org/10.1002/bdd.2282>
16. Obaidat, Rana, Haneen Aleih, Hadeia Mashaqbeh, Bashar Altaani, **Mo'tasem M. Alsmadi**, and Mohammad Alnaief. Development and evaluation of cocoa butter taste-masked ibuprofen using supercritical carbon dioxide. *AAPS PharmSciTech*. Springer Nature (USA). 2021: 1-13. <https://doi.org/10.1208/s12249-021-01962-7>
17. Alnaief, Mohammad, Rana M. Obaidat, and **Mo'tasem M. Alsmadi**. Preparation of Hybrid Alginate-Chitosan Aerogel as Potential Carriers for Pulmonary Drug Delivery. *Polymers*. Multidisciplinary Digital Publishing Institute (Switzerland). 2223. **2020**. <https://doi.org/10.3390/polym12102223>
18. Idkaidek, Nasir, Salim Hamadi, Rabab Bani-Domi, Ibrahim Al-Adham, **Motaseem Alsmadi**, Faten Awaysheh, Hisham Aqrabawi, Ahmad Al-Ghazawi, and Ayman Rabayah. Saliva versus Plasma Therapeutic Drug Monitoring of Gentamicin in Jordanian Preterm Infants. Development of a Physiologically-Based Pharmacokinetic (PBPK) Model and

Validation of Class II Drugs of Salivary Excretion Classification System. Drug Research, Thieme (Germany). 455-462. **2020**. <https://doi.org/10.1055/a-1233-3582>

19. **Mo'tasem M. Alsmadi**, Rana M. Obaidat, Mohammad Alnaief, Borhan Aldeen Albiss, Nabil Hailat. Development, In-Vitro Characterization and In-Vivo Toxicity Evaluation of Chitosan-Alginate Nanoporous Carriers Loaded with Cisplatin for Lung Cancer Treatment. AAPS PharmSciTech. Springer Nature (USA). 1-12. **2020**. <https://doi.org/10.1208/s12249-020-01735-8>
20. **Alsmadi, Mo'tasem M**; Alfarah, Mahdi Qasem; Albderat, Jawaher; Alsalaita, Ghazi; AlMardini, Reham; Hamadi, Salim; Al-Ghazawi, Ahmad; Abu-Duhair, Omar; Idkaidek, Nasir. The development of a population physiologically based pharmacokinetic model for mycophenolic mofetil and mycophenolic acid in humans using data from plasma, saliva, and kidney tissue. Biopharmaceutics & drug disposition. Wiley-Blackwell (UK). 325-340. **2019**. <https://doi.org/10.1002/bdd.2206>
21. Masadeh, Rafeef, Rana Obaidat, **Mo'tasem Alsmadi**, Bashar Altaani, Mai Khanfar, Rawda Alshyab, and Mohammed Qaoud. Technical Insight into Biodegradable Polymers Used in Implants. Jordan Journal of Pharmaceutical Sciences. University of Jordan (Jordan). **2018**.
22. **Alsmadi, Mo'tasem M.**, and Nasir Idkaidek. Optimization of Drugs Pharmacotherapy During Pregnancy Using Physiologically Based Pharmacokinetic Models-An Update. Current drug metabolism, Bentham (United Arab Emirates). 972-978. **2018**. <https://doi.org/10.2174/1389200219666180702104034>
23. Khanfar, Mai, Bashar Al-Taani, **Motasem Alsmadi**, and Aref Zayed. Enhancement of the dissolution and bioavailability from a freeze-dried powder of a hypocholesterolemic drug in the presence of Soluplus. Powder Technology. Elsevier (Netherlands). 25-32. **2018**. <https://doi.org/10.1016/j.powtec.2018.01.068>
24. Baltzley, Sarah, Azzam A. Malkawi, **Motasem Alsmadi**, and Abeer M. Al-Ghananeem. Sublingual spray drug delivery of ketorolac-loaded chitosan nanoparticles. Drug development and industrial pharmacy. Taylor & Francis (UK). 1467-1472. **2018**. <https://doi.org/10.1080/03639045.2018.1460378>
25. AlSheyyab, Rawda Y., Bashar M. Al-Taani, Rana M. Obaidat, **Motasem M. Alsmadi**, Rafeef K. Masaedeh, and Raghda N. Sabat. Delivery of Peptidic Gonadotropin Releasing Hormone Antagonists. Current drug delivery. Bentham (United Arab Emirates). 602-609. **2018**. <https://doi.org/10.2174/1567201815666180214142300>
26. Alefan, Qais, and **Mo'tasem M. Alsmadi**. Pharmacy education in Jordan: updates. International Journal of Pharmacy Practice. Oxford University Press (UK). 418-420. **2017**. <https://doi.org/10.1111/ijpp.12344>

## 9. REFERENCES

1. Prof. Borhan Aldeen Albiss/ Dean of Nanotechnology Institute, Jordan University of Science and Technology, Jordan, email: [baalbiss@just.edu.jo](mailto:baalbiss@just.edu.jo)
2. Prof. Qosai Al-Balas/ Dean of Pharmacy School, Jordan University of Science and Technology, Jordan, email: [qabalas@just.edu.jo](mailto:qabalas@just.edu.jo)
3. Prof. Rana Obaidat/ Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmacy, University of Jordan, Jordan, email: [r.obaidat@ju.edu.jo](mailto:r.obaidat@ju.edu.jo)
4. Prof. Nasir Idkaidek/ Faculty of Pharmacy and Biomedical Sciences, University of Petra, Jordan, email: [nidkaidek@uop.edu.jo](mailto:nidkaidek@uop.edu.jo)