**EDUCATION**

**2011-2013 LONG ISLAND UNIVERSITY BROOKLYN, NY**

**M.S. in Pharmaceutics (Specialization: Industrial Pharmacy),** GPA 3.30/4.00, tutored 20+ students on Mathematics, Physics and Chemistry.

**2006-2011 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD, INDIA**

**Bachelor of Pharmacy (B. Pharm),** US equivalent GPA 3.89/4.00, graduated first class with distinction (Top 10% of the class), won first place (among 50+ participants from all over India) in National Level presentation competition on *“Challenges and Opportunities in Pharmacy Profession”*.

**PROFESSIONAL EXPERIENCE**

**2020-Present ALEXION PHARMACEUTICALS NEW HAVEN, CT**

**Associate Director, Operations Asset Leader**

Leading Chemistry, Manufacturing and Controls (CMC) development strategy and operations **to advance medicines for rare diseases** from Phase 1 to commercialization stage.

**NEVAKAR, INC. BRIDGEWATER, NJ**

**2020- present Senior Research Scientist, Formulation R&D**

**2018-2020 Research Scientist II, Formulation R&D**

**2016-2018 Research Scientist I, Formulation R&D**

* Led the development of an **ophthalmic drug product to delay the progression of myopia in children** by using design of experiments (DOE) and quality-by-design (QBD) principles, leading **to 30+ patents (awarded/ pending)** in the US and rest of the world (ROW).
  + *Currently, the program is undergoing Phase III clinical trial in the US* ***(Clinicaltrials.gov Identifier: NCT03350620)****, Europe* ***(EudraCT #: 2018-001077-24).***
  + *Acknowledged by* ***World Health Organization (WHO)******as an Epidemic*** *that the global prevalence of* ***Myopia is estimated to effect 52% (4949 million) of the world’s population******by 2050*** *(*[*https://www.who.int/blindness/causes/MyopiaReportforWeb.pdf*](https://www.who.int/blindness/causes/MyopiaReportforWeb.pdf)*).*
  + ***Innovation acknowledged by Wall Street Journal (WSJ)*** *(*[*https://www.wsj.com/articles/a-new-approach-to-dealing-with-myopia-in-kids-11591640274?mod=searchresults&page=1&pos=2*](https://www.wsj.com/articles/a-new-approach-to-dealing-with-myopia-in-kids-11591640274?mod=searchresults&page=1&pos=2)*); (*[*https://blogs.wsj.com/chinarealtime/2012/05/07/myopia-epidemic-sets-off-alarm-bells/*](https://blogs.wsj.com/chinarealtime/2012/05/07/myopia-epidemic-sets-off-alarm-bells/)*)*
* Led the development of ready-to-use (RTU) **drug products for emergency medicine**; to administer the treatment to the patients quickly, efficiently and reducing the risk of medication errors. This can add significant value to the healthcare providers and systems by reducing the time required to administer the treatment to the patients, duration of the treatment/ hospitalization time and reducing the overall healthcare costs. The drug products developed within this area are used:
  + ***Ephedrine Sulfate Injection, 50mg/10mL, Approved by the US FDA in October 2020; US patent approved;*** *for the treatment of clinically important hypotension occurring in the setting of anesthesia (emergency setting), where the patient needs immediate attention and the medical professionals have limited time to respond to the emergency*
  + ***For the treatment/ control of blood pressure in hypotensive states*** *(e.g., pheochromocytomectomy, sympathectomy, poliomyelitis, spinal anesthesia, myocardial infarction, blood transfusion and drug reactions). It is also used as an adjunct in the treatment of cardiac arrest and profound hypotension.*
  + ***To facilitate tracheal intubation (maintain open airway in patients), and to provide skeletal muscle relaxation during surgery or mechanical ventilation****, both of which are critical situations for both the patient and the medical professionals.*

**2015-2016 TELIGENT, INC. BUENA, NJ**

**Scientist, Product Development**

* Led the research and development of affordable generic medicine focusing on hospital injectable products and ophthalmic drug products.

**2013-2015 PHARMACEUTICS INTERNATIONAL, INC. (Pii) HUNT VALLEY, MD**

**Scientist I, Formulation Development and Technology Transfer, Sterile Products**

* Contributed to the development of injectable medicines within the oncology space- multiple myeloma, chemotherapy-induced nausea and medicines for the treatment of methemoglobinemia, Paget’s disease

**2012-2013 LONG ISLAND UNIVERSITY BROOKLYN, NY**

**Graduate Research Assistant**

**Projects:**

*The significance of the research was to optimize the drug product formulations as a potential to minimize/ overcome the drug resistance of the microorganisms.*

* Nanoparticle and solid dispersion based dermatological drug delivery systems of ketoconazole (antifungal drug) with enhanced in-vitro antifungal activity and diffusion/permeation of drug through cellulose membrane and human cadaver skin.
* Evaluation of nanoparticle and solid dispersion based oral drug delivery systems of ketoconazole with enhanced in-vitro dissolution profiles for minimizing bioavailability variations.
* Development, characterization and effect of formulation and process variables in the preparation of Ketoconazole nanoparticles for enhanced water solubility.

**PATENTS WORLDWIDE (Awarded/Pending)**



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Application Type** | **Application/ Publication Number** | **Patent Number** | **Title** |
| 1 | Non-Provisional | 16/749,378 | 10869845 | Ephedrine Compositions and Methods |
| 2 | Non-Provisional | US 17/096,822 | Pending | Ephedrine Compositions and Methods |
| 3 | PCT | PCT/US20/17875 | Pending | Ephedrine Compositions and Methods |
| 4 | Non-Provisional | US 17007816 | Pending | Atropine Pharmaceutical Compositions |
| 5 | Non-Provisional | US 17007900 | Pending | Atropine Pharmaceutical Compositions |
| 6 | Non-Provisional | US 17016186 | Pending | Atropine Pharmaceutical Compositions |
| 7 | Non-Provisional (US Track 1) | US 15976279 | US 10251875 | Atropine Pharmaceutical Compositions |
| 8 | Non-Provisional (US Track 1) | US 16280384 | US 10568875 | Atropine Pharmaceutical Compositions |
| 9 | Non-Provisional | US 16280405 | US 10583132 | Atropine Pharmaceutical Compositions |
| 10 | Non-Provisional | US 16280585 | US 10,610,525 | Atropine Pharmaceutical Compositions |
| 11 | Non-Provisional | US 16280669 | US 10576074 | Atropine Pharmaceutical Compositions |
| 12 | Non-Provisional | US 16280552 | Pending | Atropine Pharmaceutical Compositions |
| 13 | Non-Provisional | US 16933642 | Pending | Atropine Pharmaceutical Compositions |
| 14 | PCT | PCT/US18/32017 | Pending | Atropine Pharmaceutical Compositions |
| 15 | Japan | 2018-91739 | JP 6557379 | Atropine Pharmaceutical Compositions |
| 16 | Japan Div-2 | 2019-129396 | Pending | Atropine Pharmaceutical Compositions |
| 17 | Japan Div-3 | 2019-129403 | JP 6681502 | Atropine Pharmaceutical Compositions |
| 18 | Japan Div-4 | 2019-129405 | JP 6681503 | Atropine Pharmaceutical Compositions |
| 19 | Europe | 18798073.5 | Pending | Atropine Pharmaceutical Compositions |
| 20 | Australia | 2018265257 | Pending | Atropine Pharmaceutical Compositions |
| 21 | New Zealand | 758555 | Pending | Atropine Pharmaceutical Compositions |
| 22 | Brazil | BR 11 2019 0235159 | Pending | Atropine Pharmaceutical Compositions |
| 23 | Mexico | MX/a/2019/013218 | Pending | Atropine Pharmaceutical Compositions |
| 24 | Singapore | 11201910085U | Pending | Atropine Pharmaceutical Compositions |
| 25 | Vietnam | 1-2019-06890 | Pending | Atropine Pharmaceutical Compositions |
| 26 | Korea | 10-2019-7036249 | Pending | Atropine Pharmaceutical Compositions |
| 27 | Indonesia | P00201911102 | Pending | Atropine Pharmaceutical Compositions |
| 28 | Columbia | 2019/0012893 | Pending | Atropine Pharmaceutical Compositions |
| 29 | Chile | 201903228 | Pending | Atropine Pharmaceutical Compositions |
| 30 | Russia | 2019139290 | Pending | Atropine Pharmaceutical Compositions |
| 31 | Turkey | 2019/19945 | Pending | Atropine Pharmaceutical Compositions |
| 32 | India | 201927047383 | Pending | Atropine Pharmaceutical Compositions |
| 33 | Philippines | 1-2019-502701 | Pending | Atropine Pharmaceutical Compositions |
| 34 | China | 201880031248 | Pending | Atropine Pharmaceutical Compositions |
| 35 | Hong Kong | 62020005639 | Pending | Atropine Pharmaceutical Compositions |

**INVITED SPEAKER**

1. International Summit on Chemistry-Biology Interface, April 2021
2. Drug Delivery and Nanomedicine Webinar, March 2021.
3. International Congress and Exposition on Bioequivalence and Bioavailability, Spain, August 2019
4. International Conference on Pharmaceutical Technologies and Drug Development, Prague, November 2018
5. International Conference on Drug Delivery and Novel Therapy, Toronto, October 2018
6. International Conference on Pharmaceutical Formulations and Drug Delivery, Philadelphia, September 2018
7. International Conference on Bioequivalence and Bioavailability- Discovering and Implementing of New Scientific Knowledge in the Fields on Bioequivalence and Bioavailability, San Francisco, December 2017

**PUBLICATIONS**

1. **Irfan A. Mohammed**, Bhavin Gajera, ***Lipid based drug delivery systems: A strategy for enhancing the oral bioavailability of poorly water-soluble drugs***, International Journal of Current Research 10(07), 71000 – 71006.
2. SZ ul Qasim, **Mohammed Irfan Ali**, S Irfan, A Naveed, Advances in drug delivery systems: Carbon nanotubes, Research Journal of Pharmacy and Technology 6 (2), III.
3. **Irfan A. Mohammed**, In-vitro release and permeation studies of ketoconazole from optimized dermatological vehicles using powder, nanoparticles, and solid dispersion forms of drug, Long Island University, The Brooklyn Center.

**BOOK CHAPTERS**

1. Syed Zial Ul Qasim, A. Naveed, Mohd Moheed Athar, **Mohammed Irfan Ali**, S. Irfan, MM Ahmed, RB Reddy, ***Materials for Drug and Gene Delivery***, *Nanobiotechnology,* Chapter 2, pages 32-67.

**PRESENTATIONS**

1. **Irfan A. Mohammed**, “***Poly (LACTIC-CO-GLYCOLIC ACID) (PLGA): An overview of its properties and applications in drug development and delivery”*** at University of Sciences, Philadelphia, PA.
2. **Irfan Mohammed**, M. Syed and A. Babar, ***“Nanoparticle and Solid dispersion-based dermatological drug delivery of Ketoconazole with enhanced in-vitro diffusion/ permeation of drug through cellulose membrane and human cadaver skin”*** poster at AAPS 2013 Annual Meeting and Exposition, San Antonio, TX, November 2013.
3. M. Syed, **Irfan Mohammed**, A. Babar and A. Bensalem, ***“Evaluations of Nanoparticles and Solid Dispersion based Oral Drug Delivery Systems of Ketoconazole with Enhanced In-Vitro Dissolution Profiles For Minimizing Bioavailability Variations”*** poster at AAPS 2013 Annual Meeting and Exposition, San Antonio, TX, November 2013.
4. **Irfan A. Mohammed**, A. Babar, ***“In-vitro release and permeation studies of ketoconazole from optimized dermatological vehicles using powder, nanoparticles and solid dispersion forms of drug”*** NJPhAST Annual Graduate Scholarship Meeting, NJ, May 2013.
5. **Irfan A. Mohammed**, A. Babar, ***“Targeted drug delivery systems”*** at Long Island University, Brooklyn, NY.
6. **Irfan A. Mohammed**, Hari Kumar, ***“Gene Therapy-The treatment and abuse using genes”*** at Deccan School of Pharmacy, Hyderabad, India.
7. **Irfan A. Mohammed**, M. Suresh Babu, ***“Challenges and Opportunities in Pharmacy Profession”***, National Level Seminar Competition; ***won the first place*** (among 50+ participants from all over India).

**EDITORIAL ADVISORY BOARD**

1. EC Pharmacology and Toxicology

**SCIENTIFIC REVIEWER**

1. Journal of Applied Pharmacy
2. International Journal of Pharmacy
3. Journal of Biochemistry Research
4. Canadian Journal of Biomedical Research
5. Journal of Coronary Heart Diseases
6. Annals of Experimental Biology
7. Imaging in Medicine
8. Journal of Food Science and Nutrition
9. Journal of Nursing Research and Practice
10. Pharmaceutics and Drug Delivery Research
11. Archives in Applied Science Research
12. Annals of Biological Research
13. Journal of Dementia
14. Journal of Computational Methods in Molecular Design
15. Journal of Clinical Research
16. Journal of Veterinary Medicine and Health
17. Journal of Food Microbiology
18. International Journal of Pharmacy
19. Journal of Research and Reports in Medical Science
20. Journal of Cell Science and Apoptosis
21. Journal of Material Science and Nanomaterials
22. Archives of Applied Science Research
23. Journal of Biochemistry and Cell Biology
24. Journal of Morphology and Anatomy
25. Journal of Microbial Pathogenesis
26. Journal of Biological and Medical Sciences
27. International Research Journal of Microbiology
28. Journal of Clinical Anesthesiology
29. Journal of Environmental Hazards
30. Journal of Formulation Science and Bioavailability
31. Archives of Science
32. Annals of Infections and Antibiotics
33. Diabetes Management
34. Journal of Science and Technology
35. Der Pharma Chemica
36. European Journal of Sports and Exercise Science
37. Clinical Investigations
38. Clinical Infectious Diseases
39. The International Tinnitus Journal
40. Journal of Interventional Nephrology
41. Asian Journal of Plant Science and Research
42. Journal of Genetics and Molecular Biology
43. Journal of Fisheries Research
44. Journal of Plant Biotechnology and Microbiology
45. Journal of Veterinary Medicine and Allied Science