

# Prof. Dr. Amjad Hussain

## Professor of Pharmacy

Punjab University College of Pharmacy, Lahore, Pakistan

**B.Sc., B.Pharm Gold Medalist), R.Ph (Pb).**

**M.Phil. (Pharmaceutics), Pb**

**PhD (Pharm Tech.) DMU, UK**

**HEC Approved Supervisor**

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## PERSONAL INFORMATION

<b>Father's Name</b>	Ghulam Muhammad	<b>Nationality</b>	Pakistani
<b>Address:</b> 100-D, Nawab Town 2-Km Raiwind Road Lahore, Pakistan ( <b>Home</b> )			
Punjab University College of Pharmacy, University of the Punjab, Lahore Pakistan-54550 ( <b>Office</b> )			

## OBJECTIVE

To excel the academic and research activities through innovative contribution in the field of Pharmaceutical Technology and Pharmacy.

## PROFILE SUMMARY

**Experience:** A dynamic professional with more than 21 years' experience of working as teacher, researcher (H-index 14) and professional pharmacist in university, hospital, community, and a regulatory authority of Pakistan. He has worked at managerial positions at different institutions including purchase officer of a teaching hospital, manager retail pharmacy, and many other administrative responsibilities at University College of pharmacy, University of the Punjab.

**Supervisor:** A trained postgraduate supervisor with 07 PhD completed while 05 PhD students underway and has supervised more than 90 M.Phil. students (35 as supervisor and 55 co-supervisor).

**Research Projects:** He has completed four (04) **research projects**, (two as Principal Investigator and two as co-investigator with total grant of ~9.0 million rupees), under National Research Project for Universities (NRPU) scheme of Higher Education Commission (HEC) of Pakistan). These includes: i) Novel methods of solubility enhancement, ii) 3D printing of Pharmaceuticals iii) Drug delivery through Microneedles & iv) Co-crystallization of drugs for solubility enhancement. He has also completed five (06) research projects funded by University of the Punjab (worth 0.8 million rupees) on various techniques of solubility enhancement including co-milling, solid dispersion, solubilization and centrifugal spinning.

**Publications:** He has published one book and more than 85 Articles (out of which 38 articles as first author or corresponding author) in well reputed international Journals and has cumulative impact

factor more than one hundred and sixty (>160) and 700 plus citations. Majority of these articles (~60) are published from his own research work (PhD & M.Phil.) or research supervised (both M.Phil. & PhD students). According to HEC journal recognizing system (HJRS) 33 articles belong to highest category i.e. "W", 20 articles belong to category "X" while 30 have the category "Y".

**Research expertise:** His research expertise includes Formulation design, Solubility and/or dissolution rate enhancement via Co-milling and Solid Dispersions, Centrifugal Spinning and crystal engineering. Other research areas include 3D Printing of Pharmaceuticals, Microencapsulation, Microneedle and Transdermal drug delivery, Orally disintegrating tablets & films. He expertise techniques include FTIR spectroscopy, Broadband Dielectric Spectroscopy (BDS) and thermal techniques including Differential Scanning Calorimetry (DSC) and thermogravimetric analysis (TGA).

**Research Group and Research Collaborations:** He has established a research group 'PTech Insights' and has research collaboration with many researchers working in international (De Montfort University, UK, Huddersfield University, UK) and national (Bahauddin Zakariya University, GC University Faisalabad, Lahore College for Women University, Lahore, Gomal University, DI Khan, University of Peshawar) universities.

**Conferences, workshops, and podium presentations:** He has participated in many international (UK, Europe ~15) and national conferences (more than 45) and presented his research as a podium presentation (more than 22) or as poster (more than 35).

## EDUCATION

1	<b>PhD (Pharmaceutical Technology)</b> from Leicester School of Pharmacy, Faculty of Health and Life Sciences, De Montfort University (DMU), Leicester, United Kingdom under International PhD program (2015). (Research Supervisor <b>Prof. Geoff Smith</b> )	<b>Thesis Title</b> “A study of mechanisms of milling induced enhancement of solubility and dissolution rate of poorly soluble drugs”	
<p><b>This PhD research includes the exploration of underlying mechanisms of solubility and dissolution rate enhancement by milling and co-milling and involves</b></p> <ul style="list-style-type: none"> <li>i) Changes brought by milling &amp; co-milling that help in solubility/ dissolution rate enhancement</li> <li>ii) Quantification of amorphous/crystalline content</li> <li>iii) Molecular mobility in amorphous phase.</li> <li>iv) Comparison of THz and DSC techniques for the quantification of crystalline content</li> <li>v) Comparison of Broadband dielectric spectroscopy and DSC in studying the molecular mobility during crystallization.</li> </ul>			
2	M.Phil (Pharmaceutics), 2007, University of the Punjab, Lahore	1 <sup>st</sup> division	<b>First Position in M. Phil (Pharmaceutics)</b>
<b>Thesis Title:</b> Effect of plasticizer on the release kinetics of theophylline from cellulose acetate phthalate (CAP) and Eudragit microcapsules			
3	Bachelor of Pharmacy (B-Pharmacy) 2002, University of the Punjab, Lahore	1 <sup>st</sup> division	<b>Gold Medalist</b> (Got overall First position in University)
4	Bachelor of Science (English only), 2001 University of the Punjab, Lahore	1 <sup>st</sup> division	
4	F.Sc. (Pre-Medical) 1996, BISE, Lahore	1 <sup>st</sup> division	
5	Matriculation (Science) 1993, BISE, Lahore	1 <sup>st</sup> division	<b>Secured 3<sup>rd</sup> position in School</b>

## CAREER HISTORY

S. No.	Position	Date employed/ experience	Status	Employer
1	Professor <b>(current job)</b>	19-05-2022 to date	Regular BPS-21	University of the Punjab, Lahore, Pakistan
1	Associate Professor	09-12 2019 to 18-05-2022	Regular BPS-20	University of the Punjab, Lahore, Pakistan
2	Assistant Professor	7 years	Regular BPS-19	University of the Punjab, Lahore, Pakistan
3	Lecturer	4 years	Regular BPS-18	University of the Punjab, Lahore, Pakistan
4	Hospital Pharmacist /Drug Inspector	4 years	Regular BPS-17	Health Department Government of the Punjab Under this job worked at i) Mayo Hospital Lahore ii) THQ Hospital Kamoki iii) EDO (H) office Gujranwala iv) Children Hospital Lahore
5	Hospital Pharmacist (purchase officer)	2 years	Contract BPS-17	The Children Hospital and Institute of Child Health Lahore
6	Manager Pharmacy	6 months	Private	Fazal Din & Sons (Chemist & Druggist, Lahore)

## ALLIED JOB EXPERIENCES

- Part time Lecturer (Pharmaceutics) in University College of Pharmacy University of the Punjab from August 2007 to February 2009.
- Teaching Experience (2 years) of Clinical Biochemistry to B.Sc. Lab Technology students at School of Allied Health Sciences, Children Hospital Lahore.
- Teaching experience at various academics at both F.sc & B.Sc. Level
- Demonstrator for Training of Undergraduate Pharmacist in Clinical Pharmacy and Pharmaceutical aspects of patient care in Children Hospital Lahore.

## RESEARCH INTERESTS

- Formulation design and Pre-formulation studies.
- **Solubility and/dissolution rate enhancement techniques** including Milling and co-milling, Solid dispersion, Hot Melt Extrusion & Co-crystallization
- Study of changes in crystalline/Amorphous phase (THz, BDS and DSC analysis)
- **Microencapsulation**, Preparation and Characterization of Microcapsules
- **3D printing** for personalized delivery of medicine and printing of prosthesis
- Micro-needles and transdermal delivery
- Orally disintegrating films (ODFs)
- Microfibers generated by Centrifugal Spinning Technique and
- Pharmacy Practice

## REVIEWER OF JOURNALS

I have been appointed as reviewer/editor of various national and international journals including:

- Scientific report (Nature)
- BioMed Research International (Hindawi)
- Drug development and industrial Pharmacy (Taylor & Francis)
- Pharmaceutical Development and Technology (Taylor & Francis)
- Journal of Dispersion Science and Technology (Taylor & Francis)
- Natural Product Research (Taylor & Francis)
- Therapeutic Delivery – Future Science
- Malaysian Journal of Pharmaceutical Research (USM).
- The Scientific World Journal (Hindawi)
- Asian Journal of research in medical and pharmaceutical sciences
- Associate editor Pakistan Journal of Pharmacy

## PROFESSIONAL MEMBERSHIPS

- Registered Pharmacist (RPh) with Punjab Pharmacy Council
- Member Pakistan Pharmacist Association.
- Member early career pharmacist reference group of The Royal Pharmaceutical Society of Great Britain ("RPS")
- Member Academy of Pharmaceutical Sciences (APS), PharmSci, UK.
- Member Controlled Release Society (CRS).
- Member Punjab University Alumni Association
- Member Punjab University Pharmacy Alumni (PUPA).
- Member Alumni De Montfort University, Leicester, UK.

## PROFESSIONAL DEVELOPMENT TRAININGS FOR UNIVERSITY TEACHERS

S. No	Title	Organizer	Venue	Year
1	Beginning to Teach in Higher Education	DMU, Leicester, UK	DMU, Leicester, UK	2012
2	One-month Professional competency enhancement program	Higher Education Commission (HEC), Pakistan	IER, University of the Punjab.	2010
3	One week workshop on "Competency Enhancement of teachers	Higher Education Commission (HEC), Pakistan	UVAS, Lahore	2010
4	One week workshop on "Faculty orientation	University of the Punjab	Institute of Administrative Sciences	2010
5	One week Indigenous on-campus training course for management team	Higher Education Commission (HEC), Pakistan	University of the Punjab.	2012

## RESEARCH PROJECTS/GRANTS

S. No	Title of project	Funding Agency	Amount awarded	Role	Status
1	Development of 3D Printed tablets for personalized delivery of different drugs	Higher Education Commission of Pakistan (NRPU Scheme)	2.33 million rupees	PI***	Completed (completion certificate issued by HEC)
2	Addressing the challenge of poor solubility of BCS Class-II Drugs using some novel approaches	Higher Education Commission of Pakistan (NRPU Scheme)	2.4 million PKR	PI	Completed (completion certificate issued by HEC)
3	Development and characterization of polymeric based microneedles, a novel approach for the delivery of biopharmaceuticals"	Higher Education Commission of Pakistan (NRPU Scheme)	2.43 million PKR	Co-PI	Completed (completion report submitted to HEC)
4	Effect of co-crystallization on the properties of Drug and its dosage form	Higher Education Commission of Pakistan (NRPU Scheme)	1.4 million PKR	Co-PI	Completed (completion certificate issued by HEC)
5	Formulation and Evaluation of Orally Disintegrating Films (ODFs) of Promethazine HCl	Punjab University (2017)	150,000/ PKR	PI	Completed
6	A study of techniques for the enhancement of solubility and dissolution rate of poorly soluble drugs	Punjab University (2016)	1,50,000/ PKR	PI	Completed
7	Micellar Solubilization of Mefenamic Acid using Soluplus	Punjab University (2014)	1,50,000/ PKR s	PI	Completed
8	A Study of Solid Dispersions Prepared by Co-Milling A Quality by Design (QbD) Approach to Improve the Solubility and Dissolution Rate of Poorly Soluble Drugs	Punjab University (2013)	1,25000 PKR	PI	Completed
9	Study of Centrifugal Spinning: A novel method for the enhancement of dissolution rate of poorly soluble drugs	Punjab University (2022)	200,000/ PKR	PI	Completed
10	Study of various formulation approaches for masking the taste of bitter drugs	Punjab University (2023)	300,000/PKR	PI	Underway

\* HEC stands for Higher Education Commission of Pakistan

\*\* NRPU is the National Research project for Universities

\*\*\*PI is Principal investigator

## ACADEMIC ACHIEVEMENTS & AWARDS

S.No	Title	Awarding agency	Year of award
1	<b>Gold medal</b> on getting overall first position in B.Pharm examination 2002.	University of the Punjab & Schazoo Laboratories Pvt.Ltd.	2002
2	Certificate of Honor on getting <b>highest total marks</b> in B. Pharmacy	Chairman Pharmacy Department, University of the Punjab	2002
3	Certificate of Honor on getting <b>first position</b> in B. Pharmacy	Qarshi Foundation Pakistan	2002
4	Honorarium and on air interview on getting first position in B.Pharm examination	Radio, Pakistan	2002
5	2 <sup>nd</sup> position award in podium presentation competition held among the class.	College of Pharmacy, University of the Punjab	1999
6	Merit Scholarships during 1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> and final Prof. B. Pharmacy.	University of the Punjab	1998-2001
7	Attempt certificate for passing all four Professionals of B. Pharmacy in <b>First Attempt</b>	College of Pharmacy, University of the Punjab	2002
8	Certificate by for getting <b>First Position in M.Phil.</b> (Pharmaceutics).	Principal College of Pharmacy, University of the Punjab	2006
9	Five advance increment when selected as lecturer	University of the Punjab	2009
10	<b>Overseas scholarship</b> for PhD in UK	University of the Punjab	2011
11	Certificate for delivering <b>honorary lectures</b>	DMU, Leicester, UK.	2012
12	<b>Five advance increment</b> in pay when selected as Assistant Professor	University of the Punjab	2012
13	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2014
14	<b>Incentive award</b> on research publication	University of the Punjab	2015
15	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2015
16	<b>Incentive award</b> on research publication	University of the Punjab	2016
17	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2016
18	<b>HEC Approved supervisor</b>	Higher Education Commission of Pakistan	2016
19	<b>Incentive award</b> on research publication	University of the Punjab	2017
20	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2017
21	<b>Incentive award</b> on research publication for publishing 10 articles during the year.	University of the Punjab	2018
22	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2018
23	<b>Incentive award</b> on research publication for publishing 13 articles during the year.	University of the Punjab	2019
24	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2019
25	<b>Incentive award</b> on research publication for publishing 17 articles during the year.	University of the Punjab	2020
26	<b>Performance evaluation award</b> for overall performance during the year	University of the Punjab	2020
27	<b>Incentive award</b> on research publication for publishing 12 articles during the year.	University of the Punjab	2021



## RESEARCH PUBLICATIONS

### International Journals

1. Batool, R., Mudassir....., **Hussain, A.**, Arshad, M. S., & Muhammad, S. (2023). Fabrication and Characterization of Celecoxib-Loaded Chitosan/Guar Gum-Based Hydrogel Beads. *Pharmaceuticals*, 16(4), 1-23. (HJRS category: W, Impact Factor: 4.94).
2. Sana Ijaz, ..... N.I.B., **Amjad Hussain.** (2023). Fabrication of doxorubicin loaded zinc oxide nanoparticles using sono-chemical precipitation method ; a factor screening, *Latin American Journal of Pharmacy*, 42(5), 1056-66. (HJRS category: Y, Impact Factor: 0.249).

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3. Rashid, M., Hussain....., **Hussain, A.**, Abbas, N., & Bukhari, N. I. (2022). Precise and Sensitive Ambient Temperature Based Analytical Colorimetric Method for Pregabalin. *Brazilian Journal of Pharmaceutical Sciences*, 58, 1-12.
4. Syed, M. A., ..... **Hussain, A.**, Qayyum, M. A., & Irfan, M. (2022). Assessment of Binary Agarose&ndash;Carbopol Buccal Gels for Mucoadhesive Drug Delivery: Ex Vivo and In Vivo Characterization. 27(20), 7004. (HJRS category: W, Impact Factor: 4.927).
5. Javed, S., **Hussain, A.**, Shah, P. A., Raza, S. A., Anwer, U. U., Shamim, R., Rasool, F., Hafiz, M. A., & Bukhari, N. I. J. A. P. (2022). Development of Optimized Sumatriptan–Prochlorperazine Combined Orodispersible Films Without Disintegrant: in vitro, ex vivo and in vivo Characterization. 23(5), 1-14. *AAPS PharmSciTech*, 22(8), 1-12. (HJRS category: W, Impact Factor: 3.246).
6. **Hussain, Amjad\***, Hussain, F., Arshad, M. S., Abbas, N., Nasir, S., Mudassir, J., Mahmood, F., & Ali, E. (2022). Ibuprofen loaded centrifugally spun microfibers for quick relief of inflammation in rats. *Drug. Development Industrial Pharmacy*, 47(11), 1-19. (HJRS category: X, Impact Factor: 3.225).
7. Jillani, U., Mudassir, J.,....., **Hussain, Amjad.**, Abbas, N., & Arshad, M. S. (2022). Design and Characterization of Agarose/HPMC Buccal Films Bearing Ondansetron HCl In Vitro and In Vivo: Enhancement Using Iontophoretic and Chemical Approaches. *BioMed research international*, 2022, 1-17. (HJRS category: W, Impact Factor: 3.411).
8. Sana JAVED, N. A., **Amjad Hussain**, Pervaiz Akhtar SHAH, & Syed Atif RAZA, R. S. N. I. B. (2022). Rapid Disintegrating Orodispersible Films of Sumatriptan Succinate and Prochlorperazine Using Solvent-Casting Methods - A Factor Study. *Latin American Journal of Pharmacy*, 41(1), 244-253. (HJRS category: Y, Impact Factor: 0.249).
9. M Sohail Arshad, ..., **Amjad. Hussain.**, Nasir Abbas. (2022). Formulation, Optimization, in vitro and in-vivo evaluation of levofloxacin hemihydrate Floating Tablets. *Brazilian Journal of Pharmaceutical Sciences*, 27, 1-19. (HJRS category: X, Impact Factor: 1.321).
10. Shiza Murad , ..... , Nasir Abbas , **Amjad Hussain** and Faran Ashraf Baig. (2022). Controlled release floating drug delivery system for proton pump inhibitors lansoprazole: In-vitro, In-vivo floating and pharmacokinetic evaluation. *Pakistan Journal of Pharmaceutical Sciences*, 35 (1S), 195-201,. (HJRS category: X, Impact Factor: 0.684).

11. Sana Javed, **Amjad. Hussain.**, Pervaiz Akhtar Shah Saiqa Ishtiaq,, & Ejaz Ali, N. A. a. N. I. B. (2022). Simultaneous quantification of sumatriptan succinate and prochlorperazine maleate in orodispersible films using two validated UV-spectroscopic methods. *Pakistan Journal of Pharmaceutical Sciences*, 35(1(S)), 183-194. (HJRS category: X, Impact Factor: 0.684)
12. Ijaz, Q. A., Latif, S., Rashid, M., Arshad, M. S., **Hussain, Amjad.**, Bukhari, N. I., Riaz, S., & Abbas, N. (2021). Preparation and Characterization of pH-Independent Sustained-Release Tablets Containing Hot Melt Extruded Solid Dispersions of Clarithromycin. *AAPS PharmSciTech*, 22(8), 1-12. (HJRS category: W, Impact Factor: 3.246)
13. Nasir, S., **Hussain, A\***, Abbas, N., Bukhari, N. I., Hussain, F., & Arshad, M. S. (2021). Improved bioavailability of oxcarbazepine, a BCS class II drug by centrifugal melt spinning: In-vitro and in-vivo implications. *International Journal of Pharmaceutics*, 604, 1-10. . (HJRS category: W, Impact Factor: 5.875).
14. Saman Zafar, S. H., Jahanzeb Mudassir, **Amjad Hussain**, Nasir Abbas,, & Sumera Latif, E. A. a. M. S. A. (2021). Microneedle based transcutaneous delivery of low molecular weight heparin. *Pakistan Journal of Pharmaceutical Sciences*, 34(3(SUP)), 1165-1170. (HJRS category: X, Impact Factor: 0.684)
15. Qurat-ul-ain Shoaib, ....., **Amjad. Hussain.**, Muhammad Sohail Arshad,, & Abbas, N. I. B. a. N. (2021). Solubility and dissolution rate enhancement of ibuprofen by cyclodextrin based carbonate nanosponges. *Pakistan Journal of Pharmaceutical Sciences*, 34(3(SUP)), 1045-1055. (HJRS category: X, Impact Factor: 0.684).
16. Ummarah Kanwal; Memoona Rashid; Nasir Abbas, F. R. **Amjad. Hussain.** N. I. B. (2021). Fixed Dose Single Tablet Formulation with Differential Release of Amlodipine Besylate and Simvastatin and its Pharmacokinetic profile: QbD & Risk Assessment Approach. *Drug Design, Development and Therapy*, 15: 2193-2210. (HJRS category: W, Impact Factor: 3.216)
17. Ali, E., Hussain, K., Bukhari, N. I., Arshad, N., Hussain, A., Abbas, N., Arshad, S., Parveen, S., Shehzadi, N., & Qamar, S. J. N. P. S. (2021). Determination of Bergenin in Different Parts of *Bergenia ciliata* using a Validated RP-HPLC Method. *Journal of Natural Product Sciences*, 27(1), 54-59. (HJRS category: Y, Impact Factor: ESCI)
18. Rashid, M., Sarfraz, M., Arfat, M., **Hussain, A.**, Abbas, N., Hussain, K., & Bukhari, N. I. (2021). Prediction of pharmacokinetic parameters and dose of pregabalin gastroretentive formulation in healthy adults, and special populations (healthy pediatrics and renal-impaired geriatrics). *Journal of Drug Delivery Science Technology*, 63. (HJRS category: W, Impact Factor: 3.981)
19. **Amjad Hussain\***, Sidra. N., Fahad Hussain, Nasir Abbas, Nadeem Irfan Bukhari,, & Muhammad Sohail Arshad, J. M., Sumera Latif and Abid Ali. (2021). Improved Dissolution Rate of Oxcarbazepine by Centrifugal Spinning: In-Vitro and In-Vivo Implications. *Proceedings*, 78(7), 1-9. (HJRS category: None, Impact Factor: Nil)
20. Fatima, K., Bukhari, N. I., Latif, S., Afzal, H., **Hussain, A.**, Shamim, R., & Abbas, N. (2021). Amelioration of physicochemical, pharmaceutical, and pharmacokinetic properties of lornoxicam by cocrystallization with a novel coformer. *Drug Development and Industrial Pharmacy*, 47(3) 498-508. 1892744. (HJRS category: X, Impact Factor: 3.225)

21. Afzal H, Abbas N, **Hussain Amjad**, Latif S, Fatima K, Arshad MS, et al. Physicomechanical, stability, and pharmacokinetic evaluation of aceclofenac dimethyl urea cocrystals. 2021: AAPS PharmSciTech. 22(2):68: 1-13. (HJRS category: W, Impact Factor: 3.246)
  22. Sumera Latif, Q. A. I., Misbah Hameed, ....., **Amjad Hussain**, Muhammad Sohail Arshad, Nasir Abbas. (2021). Improvement of Physico-mechanical and pharmacokinetic attributes of naproxen by cocrystallization with L-alanine. *Journal of Drug Delivery Science and Technology*, 61: 102236; 1-9. (HJRS category: W, Impact Factor: 3.981)
  23. Uzma Barkat, S. L., Hafsa Afzal, Nasir Abbas, Shaista Qamar, **Amjad Hussain**, Rahat Shamim, Rabia Khokhar. (2021). Development and Characterization of taste masked orodispersible film of chlorpromazine hydrochloride. *Acta Polonia Pharmaceutica- Drug Resaech*, 78(1), 97-106. (HJRS category: Y, Impact Factor: 0.33)
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24. **Amjad Hussain\***, Faisal. M., Muhammad Sohail Arshad, Nasir Abbas et.al (2020). Personalised 3D Printed Fast-Dissolving Tablets for Managing Hypertensive Crisis: In-Vitro/In-Vivo Studies. *Polymers*, 12(12), 3057. (HJRS category: W, Impact Factor: 4.329)
  25. Qazi Amir Ijaz, N. A., Sumera Latif, **Amjad Hussain**, Muhammad Sohail Arshad , ..... (2020). Development of a validated method for simultaneous quantification of clarithromycin and levofloxacin by high-performance liquid chromatography-diode array detector. *Acta Polonia Pharmaceutica- Drug Resaech*, 77(6), 841 – 847. (HJRS category: Y, Impact Factor: 0.33)
  26. **Amjad Hussain\*** Maham Misbah, Nasir ABBAS, Muhammad IRFAN, Muhammad Sohail ARSHAD, Rahat Shamim, Nadeem Irfan BUKHARI FM. (2020). Design and in-vitro characterization of orally disintegrating modified release tablets of naproxen sodium Turkish Journal of Pharmaceutical Sciences.17 (5):486-91. (HJRS category: Y, Impact Factor: ESCI)
  27. **Amjad Hussain**, Faisal. M., Muhammad Sohail Arshad, Nasir Abbas, Qazi Amir Ijaz, Nadia Qamar, Fahad Hussain. (2020). Drug loading and printability of two different grades of prefabricated polyvinyl alcohol filaments for fused deposition. *Journal of 3D Printing in Medicine* 4(2), 105-112. (HJRS category: None, Impact Factor: ESCI)
  28. **Amjad Hussain\***, M. S. A., Sidra Noreen, Javaria Khalid, Nasir Abbas, Jahanzeb Mudassir. (2020). Co-milling of oxcarbazepine with soluplus for the enhancement of solubility and dissolution rate. *Egyptian Pharmaceutical Journal*, 19(3), 291-296. (HJRS category: Y, Impact Factor: ESCI)
  29. Nayyer Islam, M. I., Nasir Abbas, ....., **Amjad Hussain**, et.al. (2020). Enhancement of solubility and dissolution rate of ebastine fast-disintegrating tablets by solid dispersion method. *Tropical Journal of Pharmaceutical Research*, 19(9), 1797-1805. (HJRS category: Y, Impact Factor: 0.533)
  30. Nasir Abbas, M. I., Ameer ....., **Amjad Hussain** , Mohammad Sohail Arshad, et al. (2020). Polymer blend: A new approach for eliminating curing effect of aqueous dispersion coatings. *Brazilian Journal of Pharmaceutical Sciences*, 56, 1-17. (HJRS category: X, Impact Factor: 1.321)
  31. Rashid, M., Sarfraz, M., Arafat, M., **Hussain, A.**, ....., & Bukhari, N. I. (2020). Prediction of lisinopril pediatric dose from the reference adult dose by employing a physiologically based

pharmacokinetic model. *BMC Pharmacology and Toxicology*, 21(1), 56. (HJRS category: X, Impact Factor: 2.483)

32. Hafeez, M., Saleem, Z., ....., **Hussain, A.**, & Bukhari, N. I. (2020). Off-label antibiotic use in a specialized children care hospital in Punjab, Pakistan: Findings and implications. *The Journal of Infection in Developing Countries*, 14(05), 540-544. (HJRS category: X, Impact Factor: 0.968)
33. **Amjad Hussain\*** JK, Muhammad Sohail Arshad, et.al. Mechano-chemical activation of oxcarbazepine for the enhancement of solubility and dissolution rate Latin American Journal of Pharmacy. 2020;39(5):963-7. (HJRS category: Y, Impact Factor: 0.249)
34. Arshad, M. S., Fatima, S., Nazari, K., Ali, R., Farhan, M., Muhammad, S. A., Abbas, N., **Hussain, A.**, et.al.. (2020). Engineering and characterisation of BCG-loaded polymeric microneedles. *Journal of Drug Targeting*, 28(5), 525-532. (HJRS category: W, Impact Factor: 5.121)
35. Faisal Mahmood, **Amjad Hussain\***, Sohail Arshad, Nasir Abbas, Muhammad Irfan, Nadia Qamar, Fahad Hussain. (2020). Effect of Solubilizing Aids on The Entrapment of Loratidine in Pre-Fabricated PVA Filaments Used for FDM Based 3D-Printing. *Acta Polonea Pharmaceutica - Drug research*, 77(1), 175-182. (HJRS category: Y, Impact Factor: 0.33)
36. Nasir Abbas , N. Q., **Amjad Hussain**, Sumera Latif, Muhammad, & Sohail Arshad , Q. A. I., Faisal Mahmood & Nadeem Irfan Bukhari. (2020). Fabrication of modified-release custom-designed ciprofloxacin tablets via fused deposition modeling 3D printing. *Journal of 3D Printing in Medicine*, 4(1), 17-27. (HJRS category: None, Impact Factor: ESCI)
37. Ejaz Ali, Najma Arshad, ....., **Amjad Hussain**, et. al., (2020) Linking traditional anti-ulcer use of rhizomes of *Bergenia ciliata* (Haw.) to its anti-*Helicobacter pylori* constituents, *Natural Product Research*, 34(4), 541-544. (HJRS category: W, Impact Factor: 2.861)
38. Nayyer Islam MI, ....., **Amjad Hussain**, et. al. Evaluation of solubility and dissolution of lamotrigine using lipid based microparticulate carriers: An in-vitro analysis. *Pakistan Journal of Pharmaceutical Sciences*. 2020;33(1(Supple)):299-306. (HJRS category: X, Impact Factor: 0.684)
39. Hussain, T., Ijaz, M., Shamim, R., Hussain, K., Abbas, N., **Hussain, A.**, Griessinger, J. A., & Bukhari, N. I. (2020). In Vivo Evaluation of a Novel Chitosan-Polycaprolactone Based Mucoadhesive Gastro-Retentive Sustained Release Drug Delivery System for Milnacipran HCl. *AAPS PharmSciTech*, 21, 1-11. (HJRS category: W, Impact Factor: 3.246)
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### **National Journals**

81. Sohail A., Mariah I., and **Amjad H.**, Evaluation of Antibiotic Use Behavior In Cold And Flu Amongst The Students Of Bahauddin Zakariya University Multan Pakistan. *Pakistan Journal of Pharmacy*. 2010;20-23(1 & 2):15-22. (HJRS category: *None*, Impact Factor: *Nil*)
82. **Amjad H.**, Nadeem I. , Furqan K.i, et.al., Study Of Non-Compliance And Its Reasons In Outdoor Patients With Mental Illness Of A Public Hospital. *Pakistan Journal of Pharmacy*. 2003-2006;16-19(1 & 2):21-4. (HJRS category: *None*, Impact Factor: *Nil*)
83. Khalid H., Furqan K., **Amjad H.**, and Abida L. The Pharmacy Act XI of 1967: Quackery And Irrational Use Of Drugs. *Pakistan Journal of Pharmacy*. 2003-2006;16-19(1 & 2):35-6. (HJRS category: *None*, Impact Factor: *Nil*)



## PARTICIPATION IN CONFERENCES, SEMINARS AND WORKSHOPS

### INTERNATIONAL

S. N o	Conference Name	Date	Venue
1	1st International Electronic Conference on Pharmaceutics (MDPI)	2020	Online.
2	CRS annual (46 <sup>th</sup> ) meeting and exposition 2019 organized by Controlled Release Society	2019	Valencia Spain
3	10 <sup>th</sup> BDS conference 2018, organized by international dielectric society (IDS)	2018	University de Bruxell (ULB) Brussels, Belgium
4	APS UK PharmSci 2017, the Science of Medicines	2017,	De Havarld Campus Hertfordshire University Hatfield, UK.
5	APS UK PharmSci 2016, the Science of Medicines	2016.	Technology and innovation Centre, Strathclyde University, Glasgow, UK
6	3 <sup>rd</sup> Quality by design symposium organized by De Montfort University, Leicester, UK.	2015,	De Montfort University, Leicester, UK.
7	APS UK PharmSci 2014, the Science of Medicines	2014	De Havarld Campus Hertfordshire University Hatfield, UK.
8	APS PharmSci 2013, the Science of Medicines	2013	Heriot Watt University Conference center Edinburgh, Scotland, UK
9	Workshop on skill of teaching "Beginning to Teach in higher education"	2013	De Mont fort University, Leicester, UK.
10	APS PharmSci 2012, the Science of Medicines	2012	East Midland Conference Centre University of Nottingham, UK
11	APS PharmSci 2011, the Science of Medicines	2011	East Midland Conference Centre University of Nottingham, UK
12	Technology Showcase	2011	De Montfort University, Leicester UK.

## NATIONAL

S.No	Conference/workshop Name	Date	Venue
1	International conference on emerging trends in pharmaceutical sciences (ICETPS)	2023	CUST, Islamabad
2	International conference on recent trend & innovations in drug design (CTIDD)	2023	BZU, Multan
3	One day training workshop "How to Improve / Implement HEC-QAA Parameters"	2022	University of the Punjab
4	One day workshop on "Pharmaceutical formulation through 3D printing"	2022	University of Lahore
5	4 <sup>th</sup> international Health Conference and Exhibition 2021	2021	Hajvery University Lahore
6	International Conference of Drug delivery	2019	University of Faisalabad
7	8 <sup>th</sup> invention to innovation summit organized by ORIC University of the Punjab	2019.	University of the Punjab, Lahore
8	6 <sup>th</sup> Rashid Latif Medical and Pharmacy Conference	2019.	Rashid Latif Pharmacy College, Lahore
9	International Pharmacy Conference (IPC-19):	2019.	Bahauddin Zakariya University, Multan
10	Pak Lab Expo 2018, Pakistan 2 <sup>nd</sup> international Laboratory and analytical equipment Exhibition	2018	Expo Center Lahore, Pakistan
11	3 <sup>rd</sup> International Health Trigon (IHT) Summit	2018	Faculty of Pharmacy University of Lahore
12	5 <sup>th</sup> Annual Conference of Rashid Latif College of Pharmacy	2018	Rashid Latif Pharmacy College, Lahore
13	1 <sup>st</sup> National conference on recent advancement in Pharmaceutical sciences	2018	University of Sargodha, Sargodha
14	International Pharmaceutics Conference	2018.	Bahauddin Zakariya University, Multan
15	One-day seminar on celebration of 'Freedom of Information day'	2018.	organized by Lahore, Museum,
16	4 <sup>th</sup> Annual Conference of Rashid Latif College of Pharmacy	2017	Rashid Latif Pharmacy College, Lahore
17	National conference on recent innovations in Pharmaceutical sciences (NCRIPS)	2016	Margala Hotel, Islamabad, Pakistan
18	National Pharmacy Conference	2015	University of Peshawar, Baragali Campus
19	International conference on recent innovation in Pharmaceutical Sciences	2015	RIPHA Islamabad.
20	Workshop on Contemporary Pharmacy Practice,	2013	Lahore College of Pharmaceutical Sciences.

21	16 <sup>th</sup> International Pharmacy conference by Pakistan Pharmacist Association	2011	Pakistan Pharmacist Association, PC Hotel, Lahore
22	International conference of Hospital Pharmacy Practices	2009	Jinnah Hospital & AIMC Lahore
23	15 <sup>th</sup> International Pharmacy conference and exhibition	2009	Pakistan Pharmacist Association, PC Hotel, Lahore
24	13 <sup>th</sup> International Pharmacy conference and exhibition 2006	2006	Pakistan Pharmacist Association, PC Hotel, Lahore
25	Two-day "National seminar and workshop"	2003	Ministry of Health, Government of Pakistan in Collaboration with WHO

## CONFERENCES PROCEEDINGS/ABSTRACT/POSTER PRESENTED

### International

1. Amjad Hussain, S. N., Fahad Hussain , Nasir Abbas , Nadeem Irfan Bukhari ,, & Muhammad Sohail Arshad , J. M., Sumera Latif and Abid Ali. (2020). *Improved Dissolution Rate of Oxcarbazepine by Centrifugal Spinning: In-Vitro, In-Vivo Implications*. Paper presented at the 1st International Electronic Conference on Pharmaceutics (MDPI), 1–15 December 2020, Online.
2. **Amjad Hussain** MI, Nasir Abbas, Muhammad Sohail Arshad, Muhammad Tayyab,. Effect of co-formers on the release of theophylline from Hydroxypropyl cellulose based microcapsules Controlled Release Society Annual Meeting & Exhibition; 2019 24-26 July; Valencia, Spain.
3. Nasir Abbas QA, **Amjad Hussain**, Development of Carbonate Nano-sponges: A way to improve in-vitro and in-vivo performance of Naproxen. Controlled Release Society Annual Meeting & Exhibition; 2019 24-26 July; Valencia, Spain.
4. Muhammad Sohail arshad, **Amjad Hussain**, N. Shafiq, Muhammad Tayyab, Preparation and characterization of Carvedilol loaded HPMC based fast dissolving films using Piezoelectric inkjet printing:Ex-vivo buccal permeation studies using iontophoresis . Controlled Release Society Annual Meeting & Exhibition; 2019 24-26 July; Valencia, Spain.
5. **Amjad Hussain**, Geoff Smith, Irina Ermolina, Correlation between molecular dynamics and physical stability of two milled anhydrous sugars: lactose and sucrose. 10<sup>th</sup> BDS conference 2018, organized by international dielectric society, 26-31 August, 2018, Brussels, Belgium.
6. Nasir Abbas, Sumera Latif, **Amjad Hussain**, Improvement of formulation, in-vitro and in-vivo performance of naproxen by co-crystallization. 78<sup>th</sup> FIP@APS Congress, 2-6 September 2018, Glasgow, UK.
7. Nasir Abbas, Sumera Latif, **Amjad Hussain**, Improvement of compressional, in-vitro and in-vivo performance of naproxen by co-crystallization. 78<sup>th</sup> FIP@APS Congress, 2-6 September 2018, Glasgow, UK
8. **Amjad Hussain**, Sonia Ashfaq Gondal, Nasir Abbas,.Microencapsulation: A taste and odor masking approach for garlic (*Allium sativum*) powder. 8<sup>th</sup> APS UK PharmSci 2017, the Science of Medicines, Weston Auditorium Hertfordshire University, Hatfield UK, 5 - 7 September 2017.
9. **Amjad Hussain**, Javairia Masood, Rahat Shamim, A novel method for determining the flow of cohesive pharmaceutical powders and improving the flow by using co-milling technique. 8<sup>th</sup> APS UK PharmSci 2017, the Science of Medicines, Weston Auditorium Hertfordshire University, Hatfield UK, 5 - 7 September 2017.
10. Nasir Abbas, **Amjad Hussain**, Muhammad Ahsan Formulation and evaluation of fluconazole loaded nano-sponges for improved topical drug delivery. 8<sup>th</sup> APS UK PharmSci 2017, the Science of Medicines, Weston Auditorium Hertfordshire University, Hatfield UK, 5 - 7 September 2017.
11. Nasir Abbas, Qazi Amir, **Amjad Hussain**, Synthesis and evaluation of pH dependent hydrogels for controlled release of valnaxefine HCl. 8<sup>th</sup> APS UK PharmSci 2017, the Science of Medicines, Weston Auditorium Hertfordshire University, Hatfield UK, 5 - 7 September 2017.
12. Khizar, Nosheen, **Hussain Amjad**, et.al. "Co-milling of Naproxen with aluminium hydroxide and colloidal silica for the improvement of flow, solubility and dissolution properties" in The Control Release Society (CRS) Germany local chapter, annual conference, 2-3 March 2017, Phillips university Marburg
13. **Hussain, A.**, Misbah M., Abbas N., Bukhari, N.I Arshad M.S., Preparation of orally disintegrating modified release tablets of naproxen sodium using soluplus. APS UK PharmSci 2016, the Science of Medicines, Technology and innovation Centre, Strathclyde University, Glasgow UK, 5 - 7 September 2016.

14. **Hussain, A.**, Queshi F., Abbas N., Bukhari, N.I Arshad M.S., Study of okra gum in comparison with starch paste as a binder in naproxen sodium tablets. APS UK PharmSci 2016, the Science of Medicines, Technology and innovation Centre, Strathclyde University, Glasgow UK, 5 - 70 September 2016.
15. **Hussain, A.**, Ermolina, I., Bukhari, N.I., Smith, G., Study of Changes in Crystallinity of Ball Milled Mefenamic Acid using Terahertz Pulsed Spectroscopy. APS UK PharmSci 2014, the Science of Medicines, Weston Auditorium Hertfordshire University, Hatfield UK, 8 - 10 September 2014.
16. **Hussain, A.**, Ermolina, I., Bukhari, N.I., Khan, K.A., Smith, G., Milling and Co-milling with various excipients for the improvement of intrinsic dissolution rate of Ibuprofen. APS UK PharmSci 2013, the Science of Medicines, Heriot Watt University, Edinburgh Scotland UK, 1 - 3 September 2013.
17. **Hussain, A.**, Ermolina, I., Bukhari, N.I., Smith, G., Surface percolation of protons a probe for the creation of crystal defects in lactose monohydrate following short milling times, Poster Presentation. APS UK PharmSci 2012, the Science of Medicines, East Midland Conference Centre, Nottingham UK, 12 - 14 September 2012.
18. **Hussain, A.**, Ermolina, I., Bukhari, N.I., Smith, G., A study of the amorphization of lactose monohydrate following extended milling times Poster Presentation. APS UK PharmSci 2012, the Science of Medicines, East Midland Conference Centre, Nottingham UK, 12 - 14 September 2012.

#### National

1. **Amjad Hussain**, et al, Cotton Candy Medicine:- An innovative tool for designing palatable formulation for paediatric patients. International conference on recent trend & innovations in drug design (CTIDD) organized by CUST, Islamabad in March 2023.
2. **Amjad Hussain**, et al, Cotton Candy Medicine:- An innovative formulation design for pediatric patients. International conference on recent trend & innovations in drug design (CTIDD) organized by BZU, Multan in February 2023.
3. **Amjad Hussain**, Faisal Mahmood, 3D Printing of pharmaceuticals – A way forward to customized drug delivery. International Pharmacy Conference on drug delivery: organized by University of Faisalabad, on 9, November, 2019
4. **Nasir Abbas**, Sumaira Latif, **Amjad Hussain**, Improvement of formulation, in-vitro and in-vivo performance of naproxen by co-crystallization, International Pharmacy Conference on drug delivery: organized by University of Faisalabad, on 9, November, 2019
5. **Amjad Hussain**, Addressing the challenge of Poor Solubility of BCS class II drugs – An overview of strategies and techniques, International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019
6. Faisal Mahmood, **Amjad Hussain\***, Nasir Abbas, Customized delivery of drugs through 3D printing – Exploring the challenges and opportunities, International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019.
7. Sidra Noreen, **Amjad Hussain\***, Nasir Abbas, Mechano-chemical activation of Oxcarbazepine with Soluplus for the enhancement of its Dissolution **rate**, International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019.
8. Javaria Khalid, **Amjad Hussain\***, Nasir Abbas Development of Oxcarbazepine –Soluplus Solid dispersions by HME for the improvement of solubility, International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019

9. Noman Asif, Ghazi Mustansar, Nasir Abbas, **Amjad Hussain**, Nadeem Irfan Bukhari, In-vitro chemical equivalence: a possible alternative to chemical equivalence International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019.
10. Sumaira Latif, Nasir Abbas, **Amjad Hussain**, Muhammad Sohail Arshad, Development of Paracetamol-Caffeine co-crystals to improve formulation properties and in-vivo performance. International Pharmacy Conference (IPC-19): organized by Bahauddin Zakariya University, Multan on 14-16 February, 2019.
11. Maryam Farruk **Amjad Hussain**, Study of solid dispersion: Technique for solubility enhancement of Poor soluble drugs. Poster presented in 3<sup>rd</sup> international Health Trigon Summit 2018, organized by University of Lahore, 17-18<sup>th</sup> April, 2018.
12. **Amjad Hussain**, Madiha Imtiaz, Effect of co-former on drug release from HPC based microcapsule of theophylline in 1<sup>st</sup> National conference on recent advancement in Pharmaceutical sciences, organized by University of Sargodha on 7-8 March, 2018.
13. **Amjad Hussain**, Characterization of milled surfaces – opportunities for improving solubility and dissolution rate of pharmaceuticals in International Pharmaceutics Conference, organized by Bahauddin Zakariya University, Multan on 12-13 February, 2018
14. **Amjad Hussain**, Impact of Ball Milling on the Properties of Lactose Monohydrate, at national conference on recent innovations in Pharmaceutical sciences (NCRIPS), (Margala Hotel, Islamabad, Pakistan on 25 October, 2016.
15. Nasir Abbas, **Amjad Hussain**, Muhammad Sohail Arshad, Search of elusive/dispersing polymorphism of pharmaceutical compounds by high pressure techniques, at national conference on recent innovations in Pharmaceutical sciences (NCRIPS), (Margala Hotel, Islamabad, Pakistan on 25 October, 2016.
16. **Hussain, A.** Younas.S, Use Okra gum as binder in Naproxen sodium tablets presented at National Pharmacy Conference University of Peshawar (Baragali campus), 20- 23 August, 2015.
17. **Hussain, A.**, Anjum, Z., Ehsan, N., Bukhari, N.I., Abbas, N., Micellar solubilization of poorly soluble drugs using a new surfactant-Soluplus presented at 1<sup>st</sup> International conference on recent innovations in Pharmaceutical sciences Margala Hotel, Islamabad, Pakistan, 3- 5 March, 2015.
18. **Hussain. A.**, “Study of Prescribing Errors and Their Effect on Patient Perception and Compliance in Psychiatric Patients of a Mental Hospital” presented at 16<sup>th</sup> International Pharmacy conference and exhibition 2011, organized by Pakistan Pharmacist Association.
19. **Hussain. A.**, “Preliminary assessment of the prescribing errors in outpatient department of public hospitals” International conference of Hospital Pharmacy Practices 2009, organized by Jinnah Hospital & AIMC Lahore.
20. **Hussain A.**, Rasheed Huma., Ali A., Imtiaz A., Orphan drugs” 8<sup>th</sup> annual symposium of the children’s hospital and institute of child health Lahore, Pakistan 2003.

## Webinars

1. “Align yourself to publication process”, a webinar organized by HEC Pakistan in collaboration with Elsevier (Speaker Mr. Vishal Gupta, Customer Consultant Elsevier, South Asia) on May 20<sup>th</sup>, 2020.
2. Advances in Drug Formulation & Delivery, a webinar series organized by Bioduro Drug Discovery and Development Community (Dr. Micheal Thompson, developments in twin screw granulation) on May 26<sup>th</sup> 2020.

## PODIUM PRESENTATION/TALKS (NATIONAL AND INTERNATIONAL CONFERENCES)

S. No	Title of Talk	Conference name	Organized by/Venue	Date
1	Cotton Candy medicine- An innovative tool for designing palatable formulation for paediatric patients	International conference on emerging trends in pharmaceutical sciences (ICETPS)	Capital University of Science and Technology (CUST), Islamabad	2023
2	Cotton Candy Medicine:- An innovative formulation design for pediatric patients	International conference on recent trend & innovations in drug design (CTIDD)	BZU, Multan	2023
3	Pharmaceutical formulation through 3D printing	Hands on training workshop on Pharmaceutical formulation through 3D printing	University of Lahore	2022
4	Cotton Candy medicine- An innovative tool of drug design for pediatric patient	4 <sup>th</sup> international Health Conference and Exhibition 2021	Hajvery University Lahore	2021
5	3D printing of pharmaceuticals– A way forward to customized drug delivery.	International Conference of Drug delivery	Organized by University of Faisalabad	2019
6	Exploring the 3D Printing: A New Era in Development of Patient Specific Pharmaceuticals	Technology Stall at 8 <sup>th</sup> invention to innovation summit	ORIC, University of the Punjab at CEMB	2019
7	3D Printing - A New Horizon in the customized delivery of Pharmaceuticals	Rashid Latif Medical and Pharmacy Conference	Rashid Latif Pharmacy College	2019
8	Addressing the Challenge of poor solubility of drugs	International Pharmacy Conference 2019	Bahauddin Zakariya University, Multan	2019
9	Importance of particle size in solid state characterization	Pak Lab Expo 2018	Expo Center, Lahore	2018
10	Characterization of milled surfaces – opportunities for improving solubility and dissolution rate of pharmaceuticals	International Pharmaceutics Conference	Bahauddin Zakariya University, Multan	2018
11	Impact of Ball Milling on the Properties of Lactose Monohydrate	national conference on recent innovations in Pharmaceutical sciences (NCRIPS)	organized by RIPHA institute/Margala Hotel, Islamabad	2016
12	Use of okra gum as binder in naproxen tablets	national pharmacy conference	University of Peshawar	2015
13	Solubility and dissolution rate enhancement by Co-milling	1 <sup>st</sup> International conference on recent innovations in Pharmaceutical	RIPHA institute/Margala Hotel, Islamabad	2015

		Sciences		
14	A study of the amorphization of lactose monohydrate following extended milling times	APS, UK PharmSci 2012 the Science of Medicines	East Midland Conference Centre, Nottingham UK	2012
15	Study of Prescribing Errors and Their Effect on Patient Perception and Compliance in Psychiatric Patients of a Mental Hospital	16 <sup>th</sup> International Pharmacy conference	Pakistan Pharmacist Association	2011
16	Preliminary assessment of the prescribing errors in outpatient department of public hospitals	International conference of Hospital Pharmacy Practices	Jinnah Hospital & AIMC Lahore	2009
17	"Orphan drugs	8 <sup>th</sup> annual symposium of the children's hospital	children's hospital and institute of child health Lahore,	2003



## FORMAL TRAININGS

S. No	Title	Organizer/Venue	Year
1	Faculty-wise training workshop on "how to prepare self-assessment report (SAR)	QEC, University of the Punjab	2023
2	2 days' workshop on patent filling and introduction to intellectual property system of Pakistan	Office of research innovation & Commercialization (ORIC) University of the Punjab	2018
3	World quality day	University of the Punjab and Virtual University of Pakistan	2016
4	Drug and food safety congress	Dimension development foundation and Punjab University College of pharmacy	2016
5	Workshop on Mastering Research Tools using SPSS, AMOS, STATA and EndNote	RCTD and Superior University, Lahore	2012
6	Effective presentation skills using PowerPoint	De Montfort University, Leicester, UK	2011
7	Managing data using Microsoft excel	De Montfort University, Leicester, UK	2011
8	National Seminar & Workshop on environmental Toxicology and health	UVAS, Lahore	2011
9	One-day seminar on "Good Clinical practices"	UVAS, Lahore	2011
10	National seminar on use of animals in Science-Ethical and practical considerations	University College of Pharmacy, University of the Punjab	2011
11	Workshop on "Academic writing for research	IRP and UMT, Lahore	2011
12	Academic writing for research", seminar	University of the Punjab	2011
13	<b>"Clinical Research Certified Professional (CRCP)</b>	Clinical trial Unit, Dow University of Health sciences, Karachi and Services Institute of Medical Sciences, Lahore	2011
14	Workshop on "Managing Research projects"	IPA in UVAS, Lahore	2009
15	5 day training work on "Good pharmacy Practices"	Punjab Pharmacy Council	2005
16	National Pharmacy Conference on "Impact of WTO on Pharmaceutical Trading	University College of Pharmacy	2007
17	Training workshop on Logistic Support System (LSS)	WHO, Pakistan	2008
18	National seminar & workshop	Ministry of Health (MoH), Government of Pakistan	2003
19	Internship (6 weeks)"	Highnoon Laboratories Pvt. Ltd.	2001

## MANAGERIAL AND ADMINISTRATIVE RESPONSIBILITIES

S.No.	Description	Duration/Year
1	<b>In-charge examination</b> (Undergraduate & Postgraduate) at Punjab University College of Pharmacy.	Since 2016
2	<b>Student advisor</b> University College of Pharmacy, PU	2014 to 2018
3	Deputy Student Advisor University College of Pharmacy.	2011 to 2014
4	<b>Incharge Central Research Lab</b> of University College of Pharmacy	Since 2016
5	<b>Member Purchase committee</b> of University College of Pharmacy	Since 2016
6	Member University admission management committee, University of the Punjab	2015 & 2016
7	<b>Member disciplinary committee</b> of University Convocation, University of the Punjab.	2013 to 2018
8	<b>Inquiry officer</b> for non-teaching staff (under PEEDA Act) of Punjab University.	2018 & 2019
9	Co-opted member election convener committee for ASA of Punjab university election	2016
10	<b>Member Board of studies</b> , College of Pharmacy, PU.	2012 and 2018.
11	Focal person for the Hostels/ Accommodation of students	2012
12	<b>Tutor</b> of various Pharm D classes at College of Pharmacy, University of the Punjab	Since 2009
13	<b>Organizing Secretary</b> of Seminar organizing committee of College of Pharmacy, University of the Punjab.	2012 to 2017
14	<b>Member Convocation organizing committee</b> of College of Pharmacy, University of the Punjab.	Since 2015
15	<b>Signatory on behalf of Principal</b> for Pharmacy Council for the Registration of graduate Pharmacists	Since 2014
16	Coordinator for the renovation and up gradation of Animal House	2010 to 2013
17	<b>Focal person</b> for provision of data/preparation of Reports of College for University and HEC.	Since 2013
18	<b>Focal person</b> of Quality enhancement cell (QEC) of University College of Pharmacy, University of the Punjab.	Since 2015
19	<b>Secretary Alumni Association</b> of College of Pharmacy (PUPA), University of the Punjab.	Since 2014
20	<b>Focal Person Alumni Association</b> of University of the Punjab for College of Pharmacy.	2019
21	<b>Focal person</b> of Government (PM & CM) Laptop scheme for students.	Since 2012
22	<b>Lab Manager</b> "Formulation design lab" of College of Pharmacy, University of the Punjab	2017
23	<b>Incharge Character Building Society (CBS)</b> at university College of Pharmacy set up by National Accountability Bureau (NAB) Pakistan at university and college levels	Since 2016
24	<b>Member Doctoral Program Committee (DPC)</b> of College of Pharmacy, University of the Punjab	2015
25	<b>Resident Inspector</b> of various examination (Pharm D, B.A, M.A, LLB etc.) conduction by University of the Punjab	Since 2013
26	Tour Incharge of study tours of 2 <sup>nd</sup> and 4 <sup>th</sup> prof. classes at College of Pharmacy, University of the Punjab	Since 2010
27	Member committee for organizing annual sports at PUCP	Since 2015
28	Member Pharmacy & Therapeutic Committee, health center, PU,	Since 2018

### **PAPER SETTER/EXAMINER PHARM-D EXAMINATION**

I have been appointed as External examiner/Paper setter for Pharm-D and M.Phil examination since 2009 in different universities of Pakistan including

- Bahauddin Zakariya University Multan.
- University of Sargodha.
- Gomal University Dera Ismail Khan.
- Ripla Institute of Pharmaceutical sciences, Islamabad.
- University of Health Sciences (UHS) Lahore.
- Superior University Lahore.
- Government College University Faisalabad.
- Lahore College for Women University (LCPW).
- University of Health Sciences Lahore.
- Shifa Tameer-e-Millat pharmacy Institute, Islamabad

### **MEMBER SELECTION BOARD**

- Member selection committee at Lahore Pharmacy College affiliated with University of health sciences, Lahore.

### **MEMBER BOARD OF STUDIES**

- Member Board of studies (BoS), Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Government College university, Faisalabad.

### **MEMBER DEPARTMENTAL TENURE TRACH REVIEW COMMITTEE (DTRC)**

- Member DTRC, Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Government College university, Faisalabad.

## RESEARCH SUPERVISED

### Ph.D

S. No	Student Name	Title	Session/Status	Supervisory status
1	Faisal Mahmood	Design, fabrication, and characterization of FDM based 3D printed objects for personalized dosing of model drugs	2015-2020/ Completed	1 <sup>st</sup> supervisor
2	Sidra Rashid	Study of Centrifugal spinning for enhancing the solubility and dissolution rate of poorly soluble drugs	2015-2020/ completed	1 <sup>st</sup> supervisor
3	Sumaira Latif	Pharmaceutical Co crystals: A New Paradigm of Crystal Engineering to modify Physicochemical and Pharmaceutical Properties of drugs	2014-2019/ Completed	2 <sup>nd</sup> supervisor
4	Sana Javaid	Design, fabrication, and evaluation of orodispersible films of sumatriptan succinate and prochlorperazine maleate for relief of migraine and associated nausea	2015-2020/ Completed	2 <sup>nd</sup> supervisor
5	Nadia Qamar	Fused Deposition Modelling of Ciprofloxacin Oral Tablets & Hernial Implants and Their Pharmaceutical Evaluation	2015-2020/ Completed	2 <sup>nd</sup> supervisor
6	Qazi Amir Javaid	3D printing of antibiotics/yet to be finalized	2015-2020/ Completed	2 <sup>nd</sup> supervisor
7	Memona Rashid	Dose adjustable, Multiunit Gastroretentive Sustained Drug Delivery System for Pregabalin: Formulation and Evaluation	2015-2020/ Completed	2 <sup>nd</sup> supervisor
8	Nosheen Khizar	Effect of Milling and Co-milling on Physicochemical and Pharmaceutical Properties of BCS Class II drugs, Naproxen and Mefenamic Acid	2015-2020/ underway	2 <sup>nd</sup> supervisor
	Muhammad Sohail		2018-2023 underway	2 <sup>nd</sup> supervisor
	Sara Yasin		2021-2026 underway	2 <sup>nd</sup> supervisor
	Fozia Akbar		2021-2026 underway	2 <sup>nd</sup> supervisor

**M.Phil (as 1<sup>st</sup> supervisor)**

S. No	Student Name	Title	Session/ Status	Supervisory status
1	Saira Naeem	Prevalence of vitamin D deficiency and perception of selected physicians in Lahore on its treatment	2012-13 Completed	1 <sup>st</sup> supervisor
2	Ali Sayed	Development and optimization of a novel dental analgesic system containing flurbiprofen and lidocaine	2012-13 Completed	1 <sup>st</sup> supervisor
3	Khalid Iqbal	Study of the factors affecting the properties of griseofulvin after ball milling applying design of experiment	2012-13 Completed	1 <sup>st</sup> supervisor
4	Nadia Mazhar	Effect of the selected absorption enhancers on permeation of mefloquine using Franz diffusion cells	2013-14 Completed	1 <sup>st</sup> supervisor
5	Nosheen Khizer	Study of Selected Surfactant and Inorganic Materials on Properties of Naproxen after Co-milling	2013-14 Completed	1 <sup>st</sup> supervisor
6	Nigarish Ehsan	Micellar solubilization of Ibuprofen using Soluplus <sup>®</sup> , a newly developed surfactant	2014-15 Completed	1 <sup>st</sup> supervisor
7	Zunaira Anjum	Micellar solubilization of Mefenamic acid using Soluplus <sup>®</sup> , a newly developed surfactant	2014-15 Completed	1 <sup>st</sup> supervisor
8	Nazia Rasheed	Public and patient perception about role of Pharmacist in Health care system	2014-15 Completed	1 <sup>st</sup> supervisor
9	Farah Qureshi	Study of Okra gum in comparison with starch paste as a binder in naproxen sodium tablets	2015-16 Completed	1 <sup>st</sup> supervisor
10	Maham Misbah	Preparation and in vitro evaluation of orally disintegrating modified release tablets of naproxen sodium	2015-16 Completed	1 <sup>st</sup> supervisor
11	Javeria Masood	Study of different methods for the modification of flow properties of cohesive pharmaceutical powders	2015-16 Completed	1 <sup>st</sup> supervisor
12	Mahmood	Study of exhaled carbon monoxide levels and its effect on health of susceptible population	2015-16 Completed	1 <sup>st</sup> supervisor
13	Sonia Gondal	Microencapsulation: A taste and odor masking approach for garlic ( <i>Allium Sativum</i> ) powder	2016-17 Completed	1 <sup>st</sup> supervisor
14	Madiha Imtiaz	Formulation and Evaluation of Hydroxypropyl cellulose (HPC) based Microcapsules of Theophylline	2016-17 Completed	1 <sup>st</sup> supervisor
15	Azka Rehman	Formulation and evaluation of mucoadhesive buccal films of Flurbiprofen	2016-17 Completed	1 <sup>st</sup> supervisor
16	Anum Azeem	Study of Co-milling: a technique for the improvement of solubility and dissolution rate of a poorly soluble drug from BCS class II	2016-17 Completed	1 <sup>st</sup> supervisor
17	Anam Sohail	Preparation and evaluation of solid dispersion of indomethacin for the improvement of solubility and dissolution rate	2016-17 Completed	1 <sup>st</sup> supervisor
18	Sadia Latif	Formulation and evaluation of Hydroxy-Propyl cellulose (HPC) based Orally Disintegrating Films (ODFs) of Promethazine HCl	2016-17 Completed	1 <sup>st</sup> supervisor
19	Sara Zia	Study of Flaxeed as Pharmaceutical Excipient	2017-18 Completed	1 <sup>st</sup> supervisor
20	Maryam Farrukh	Preparation and characterization of solid dispersion for the improvement of solubility and dissolution rate of Piroxicam	2017-18 Completed	1 <sup>st</sup> supervisor

21	Komal Younas	Solid dispersion of lornoxicam for the improvement of its solubility and dissolution profile	2017-18 Completed	1 <sup>st</sup> supervisor
22	Javaria Khalid	Study of mechano-chemical methods for the improvement of solubility and dissolution rate of a BCS class II drug	2018-19 Completed	1 <sup>st</sup> supervisor
23	Sidra Noreen	Development and evaluation of co-milling based solid dispersions for the improvement of solubility and dissolution rate of a poorly soluble drug	2018-19 Completed	1 <sup>st</sup> supervisor
24	Fahad Hussain	A study on the enhancement of dissolution rate of a poorly soluble drug using temperature controlled Centrifugal spinning	2019-20 (Spring) Completed	1 <sup>st</sup> supervisor
25	Mahwish Amin	A study of various solid dispersion methods for the development of fast release tablets of a poorly soluble drug	2019-20 (Spring) Completed	1 <sup>st</sup> supervisor
26	Muniba Mukhtar	Fabrication and physico-mechanical characterization of HME based flurbiprofen loaded filaments for 3D printing	2019-20 (Fall) Completed	1 <sup>st</sup> supervisor
27	Mehwish Muratab	Fabrication of centrifugally spun microfibers containing flurbiprofen, A characterization and process optimization study	2019-20 (Fall) Completed	1 <sup>st</sup> supervisor
28	Naureen Afzal	Formulation development and characterization of Metformin HCl extended release Tablets coated with immediate release Atorvastatin	2020-21 Completed	1 <sup>st</sup> supervisor
29	Omer Mahmood	Design and evaluation of drug loaded 3D printer capsular device for immediate and sustained release of captopril	2020-21 Completed	1 <sup>st</sup> supervisor
30	Rabia Javaid	Design and formulation of 'Dome matrix' tablets of curcumin and nebivolol	2020-21 Completed	1 <sup>st</sup> supervisor
31	Muhammad Ayyan	Formulation of immediate release captopril tablet using cotton candy technique incorporated by sustained release microcapsule	2020-21 Completed	1 <sup>st</sup> supervisor
32	Hafiz Muhammad Owais	Formulation and Stability Evaluation of Micro-fibrous Tablets of Montelukast and Dexamethasone for the Management of Acute Covid-19 Symptoms.	2021-22 Completed	1 <sup>st</sup> supervisor
33	Tanzeela Tariq	Formulation and Evaluation of Dry Powder Inhalation Containing Remdesivir and Dexamethasone Sodium Phosphate For The Management Of Acute Covid-19 Symptoms	2021-22 Completed	1 <sup>st</sup> supervisor
34	Sumbal	Fabrication of Taste Masked Amoxicillin Tablets by Different Techniques and their <i>In-vitro</i> and <i>In-vivo</i> Evaluation.	2021-22 Completed	1 <sup>st</sup> supervisor
35	Nimra Shakeel	Fabrication and characterization of HME based flurbiprofen loaded filaments for 3D printed tablets	2022-23	1 <sup>st</sup> supervisor

## M.Phil (as 2<sup>nd</sup> supervisor)

1	Sana Javed	Study of solubility and dissolution of naproxen, a Biopharmaceutical classification system class II drug, using solid dispersion	2012-13 Completed	2 <sup>nd</sup> supervisor
2	Ume-Salma	Study of factors affecting properties of ketoprofen after ball milling using quality by design approach	2012-13 Completed	2 <sup>nd</sup> supervisor
34	Sana Qamar	Evaluation of the properties of milled and mucilage of flaxseeds as tablet excipient using paracetamol as a model drug	2012-13 Completed	2 <sup>nd</sup> supervisor
5	Ayesha Mehmood	Study of changes in liver profile induced by pemetrexed alone or pemetrexed based chemotherapy regimens in adult cancer patients	2012-13 Completed	2 <sup>nd</sup> supervisor
6	Bushra Shehbaz	Treatment of vitamin D deficiency and its effects on the Vitamin D levels	2012-13 Completed	2 <sup>nd</sup> supervisor
7	Bilal Tahir	Development of a novel dental analgesic system using artificial intelligence	2012-13 Completed	2 <sup>nd</sup> supervisor
8	Kashif Riaz	Occurrence of medication errors and comparison of manual and computerized prescription systems in public sector hospitals	2012-13 Completed	2 <sup>nd</sup> supervisor
9	Marina Rehman	Occurrence of medication errors and comparison of manual and computerized prescription systems	2013-14 Completed	2 <sup>nd</sup> supervisor
10	Kanwal Fatima	Study of the effect of selected excipients on the stability of naproxen-Gelucire solid dispersion	2013-14 Completed	2 <sup>nd</sup> supervisor
11	Naveel Atif	Patients' health literacy and comprehension of CVS disorder and their effect on the concordance and therapeutic outcome	2013-14 Completed	2 <sup>nd</sup> supervisor
12	Zunaira Rafique	Study of effect of selected absorption enhancers on permeation of artemether using Franz diffusion cells	2013-14 Completed	2 <sup>nd</sup> supervisor
13	Mehwish Mahtab	Development and optimization of a palatable sodium benzoate formulation using artificial intelligence approach	2013-14 Completed	2 <sup>nd</sup> supervisor
14	Zobia Mubarak	Evaluation of different forms of date syrup as an excipient using paracetamol as a model drug	2013-14 Completed	2 <sup>nd</sup> supervisor
15	Zaigham Ghaffar	Cross sectional study of the prevailing factors for two current and the most prevailing ailments at community level in Lahore	2013-14 Completed	2 <sup>nd</sup> supervisor
16	Memoona Rashid	<i>In silico</i> prediction of pediatric dose of methotrexate from adult pharmacokinetic data and study on the effect of factors affecting its pharmacokinetic parameters	2014-15 Completed	2 <sup>nd</sup> supervisor
17	Ayesha Khadija	Formulation of a novel trans-lip drug delivery system of estradiol	2014-15 Completed	2 <sup>nd</sup> supervisor
18	Maham Shafiq	Study of potential trans-lip delivery of estradiol as a novel dosage form	2014-15	2 <sup>nd</sup> supervisor
19	Ayesha Mehwish	Formation and development of palatable dosage form of sodium benzoate using computer aided approach	2014-15 Completed	2 <sup>nd</sup> supervisor
20	Iram Sohail	Study of the factors affecting the characteristics of sodium benzoate formulation	2014-15 Completed	2 <sup>nd</sup> supervisor

21	Tahira Noreen	Effect of polymorphism of mefenamic acid in tablet dosage form	2014-15 Completed	2 <sup>nd</sup> supervisor
22	Nadia Qamar	Comparison of the effectiveness of branded and generic iron supplements in anemic pregnant women	2014-15 Completed	2 <sup>nd</sup> supervisor
23	Farhan Ali	Study of the potential involvement of retail/community pharmacy sector for the initiation of public awareness programs	2014-15 Completed	2 <sup>nd</sup> supervisor
24	Arooj Rasool	Effect of Polymorphism on the release of Piroxicam from tablet dosage form	2015-16 Completed	2 <sup>nd</sup> supervisor
25	Mehreen Aftab	Preparation and characterization of solid dispersion of ibuprofen prepared by different techniques	2015-16 Completed	2 <sup>nd</sup> supervisor
26	Javeria Arshad	Preparation and characterization of solid dispersion of naproxen prepared by different techniques	2015-16 Completed	2 <sup>nd</sup> supervisor
27	Ahmad Kamal Moosa	Preparation and evaluation of modified and sustained release double layer tablet of Trimetazidine and Nifedipine	2015-16 Completed	2 <sup>nd</sup> supervisor
28	Sana Ijaz	Study of the effect of modified starch as tablet excipient using Lyophilization	2015-16 Completed	2 <sup>nd</sup> supervisor
29	Obaid Anwar	Study of the effect of tablet excipient modification using Lyophilization	2015-16 Completed	2 <sup>nd</sup> supervisor
30	Malia Pervaiz	Taste masking of sodium benzoate using ethylcellulose based optimized microsphere	2015-16 Completed	2 <sup>nd</sup> supervisor
31	Amna Hafeez	Formulation of ethylcellulose based sodium benzoate coacervates by non-solvent addition method using central composite design	2015-16 Completed	2 <sup>nd</sup> supervisor
32	Riffat Khan	Modification of starch as tablet excipient using freeze drying	2015-16 Completed	2 <sup>nd</sup> supervisor
33	Sameen Khan	Study of stability chloramphenicol in water-based eye drops using CMC sodium, PEG-400 and PEG-4000	2016-17 Completed	2 <sup>nd</sup> supervisor
34	Hira Khurshid	Effect of temperature and pressure on pharmaceutical properties during milling of mefenamic acid	2016-17 Completed	2 <sup>nd</sup> supervisor
35	Rashida Sarwar	Effect of temperature and pressure on pharmaceutical properties during milling of ibuprofen	2016-17 Completed	2 <sup>nd</sup> supervisor
36	Ayesha Siddiq	Assessment of clinical risk of external infection in patients after cardiac bypass surgery	2016-17 Completed	2 <sup>nd</sup> supervisor
37	Iqra Saeed	Development and evaluation of sustained release preparation of Diclofenac sodium and mefenamic acid applying Fused deposition modeling (FDM) technique	2016-17 Completed	2 <sup>nd</sup> supervisor
38	Nida Saeed	Development and evaluation of tablets of Cefixime and ciprofloxacin applying Fused deposition modeling (FDM) technique	2016-17 Completed	2 <sup>nd</sup> supervisor
39	Esha Tariq Bhatti	Effect of polymorphism of indomethacin on its solid dispersion by quench cool method	2016-17 Completed	2 <sup>nd</sup> supervisor



40	Rabia Mehmood	Formulation and evaluation of Piroxicam loaded nano-sponges for topical delivery	2016-17 Completed	2 <sup>nd</sup> supervisor
41	Komal Sarwar	Formulation and Evaluation of indomethacin loaded nano-sponges for oral delivery	2016-17 Completed	2 <sup>nd</sup> supervisor
42	Fareeha Nosheen	Design, evaluation and stability optimization of ibuprofen nano-emulsion for topical use	2017-18 Completed	2 <sup>nd</sup> supervisor
43	Wajeeha Ishtiaq	Design, characterization analytical method validation and stability studies of Racecadol 100mg capsule	2018-19 Completed	2 <sup>nd</sup> supervisor
44	Asma Shah Rukh	Formulation and evaluation of cyclodextrin based nano-sponges of mefenamic acid	2018-19 Completed	2 <sup>nd</sup> supervisor
45	Nida Habib	Fused deposition modeling (FDM), a new tool for the fabrication of a gastro-retentive buoyant system	2019-2020 Completed	2 <sup>nd</sup> supervisor
46	Sohail Khalid	Fabrication and in-vitro evaluation of theophylline floating tablets by Hot Melt Extrusion coupled with 3D printing Technique	2019-2020 Completed	2 <sup>nd</sup> supervisor
47	Zunairah Younis	Design and evaluation of nano-emulsified in situ ophthalmic gel for sustain delivery of ibuprofen	2019-2020 Completed	2 <sup>nd</sup> supervisor
48	Zainab Safdar	Preparation and evaluation of nanoemulsion based in situ gel for ocular delivery of indomethacin	2019-2020 Completed	2 <sup>nd</sup> supervisor
49	Aqsa	Effect of milling on compressional properties of diclofenac sodium	2020-2021 Completed	2 <sup>nd</sup> supervisor
50	Ammara Ashiq	Formulation and characterization of nanosponge based in-situ gel for ophthalmic delivery of ibuprofen	2020-2021 Completed	2 <sup>nd</sup> supervisor
51	Mahnoor Azhar	Preparation and Evaluation of Naproxen Loaded Nanosponges in-situ gel by Solvent Emulsification Method for ocular delivery	2020-2021 Completed	2 <sup>nd</sup> supervisor
52	Sana Rashid	Betacyclodextrin-based nanosponges: An effective carrier for oral delivery of Indomethacin	2020-2021 Completed	2 <sup>nd</sup> supervisor
53	Bisma	Preparation and evaluation of nanoemulsion based aerosol formulation for pulmonary delivery of azithromycin	2020-2021 Completed	2 <sup>nd</sup> supervisor

### Undergraduate projects (Pharm D, Pharmaceutical technology)

S. No	Student Name	Title	Session
1	Khula Taj	Development of rice-based ORS formulation	2013
2	Sana Tauheed	Development of Sodium Chloride mouthwash	2013
3	Lubna Mohsin	Development of Mefenamic acid Tablets	2013
4		Development of Ibuprofen Tablets	2014
5	Farah	Development of cinnamon toothpaste	2014
6	Kiran Pervaiz	Product development of Aloe Vera Soap	2015
7	Jamila Saleem	Effect of Milling, Co-Milling on Bulk Properties, Solubility and Dissolution Rate of Mefenamic Acid	2018
8	Fahad Hussain	Development of Ibuprofen Suspension	2018
9	Laila Iqtidar	Enhancement of dissolution rate of Ibuprofen by solid dispersion technique	2018
10	Areeba Maqsood	Preparation and Characterization of Solid Dispersion of Ibuprofen for The Improvement Of Solubility And Dissolution Rate	2018
11	Madeeha Rasool	Solubility and Dissolution Rate Enhancement of Indomethacin by Solid Dispersion Technique Using	2018
12	Krishna	Enhancement of dissolution rate of Ibuprofen by co-milling technique	2018
13	Nyla Anwar	Effect of milling and co-milling on bulk properties of Diclofenac sodium	2018
14		Development Paper soap	2019
15	Warisha	Cotton candy based pediatric formulation	2019
16	Saif-Ullah	Adhesive strength of adhesive tapes	2019
17	Nimra	Development of Aloe Vera soap	2019
18		Transdermal patches of diclofenac sodium	2019
19		Microcapsules of diclofenac sodium	2019
20		Preparation and characterization of orally disintegrating films	2019
21	Nimra Hameed	Formulation and evaluation of mouth freshening oral disintegrating films	2021
22	Atif Nazir	Preparation of Fast Disintegrating Tablets of Ibuprofen for Quick Relief of Pain	2021
23	Fatima Younas	Preparation and evaluation of floating effervescent tablet of diclofenac sodium for sustained release action	2021
24	Kiran Wakeel	Comparison of binding properties of different natural polymers in paracetamol tablets <i>abelmoschus esculentus</i> ( <i>okra</i> ) <i>cordia myxa</i> ( <i>lasura</i> ) <i>starch</i>	2021
25	omaima	Solid dispersions of curcumin	2022
	Sana	Cotton candy based formulation of domperidon	2022
	Aimen	Powder drug inhaler of montelukast	2022
	Daiyal	Curcumin based dressing	2022

## REFERENCES

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