

# Curriculum Vitae

## I. Personal (Annex A)

### **Dr. Saad Liaquat**



Date of Birth: 30th March 1986.

Citizenship: Pakistani

Country of residence: Pakistan

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Present: House 322 Street 2, Sector F-8, Phase-6, Hayatabad, Peshawar.

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## II. Academics (Annex B)

**Certificate in Health Profession Education (CHPE), IHPER, Khyber Medical University, Peshawar, Pakistan (2020-2021).**

3<sup>rd</sup> position in certificate course scoring 89 % marks.

**Doctor of Philosophy (PhD) in Biomaterials (Dental Materials), Eastman Dental Institute, University College London, U.K (2011-2015).**

**Thesis Title:****Development of Antibacterial-releasing Dental Composites with High Strength and Dentine Bonding.****Brief Synopsis of Research:**

The aim was to develop a high strength and tough composite. This should also have ability to self-adhere to tooth structure which with addition of antibacterial and re-mineralizing agents and expansion to compensate shrinkage could reduce bacterial micro leakage. I have formulated a wide range of novel dental composites with added components to provide antibacterial action, release of calcium to promote natural tooth repair and bonding to dentine. I have also investigated use of components that shrink less upon set and lower toxicity initiators. Material characterization has focused largely upon mechanical properties and bonding to ivory dentine. For the bonding work, I have demonstrated chemical similarity of ivory with human dentine and is now investigating if there are any physical / structural differences and effects of acid treatment.

**Bachelor of Dental Surgery (BDS), Khyber College of Dentistry, Khyber Medical University Peshawar, Pakistan (2004 – 2009).**

Upper First Class (561/800) 3rd Position in Final Professional BDS examination. Subjects included: Dental materials, Anatomy, Physiology, Pathology, Biochemistry, Medicine, Surgery, Orthodontics, Endodontics, Oral & Maxillofacial surgery, Prosthodontics, Operative dentistry, Periodontics, Pedodontics, Oral medicine, Oral Pathology, Oral anatomy & tooth morphology, Radiology.

**College (Pre-Medical), Islamia College Peshawar, BISE Peshawar, Pakistan (2002 – 2004).**

A1 Grade in Pre-Medical Group (904/1100).

**High School (SSC), University Public School, BISE Peshawar, Pakistan (1991 – 2002).**

A1 Grade in Matric (726/850).

**III. Employment Record (Annex C)****Course Coordinator MPhil (02/04/21 – Till Date)**

Institute of Basic Medical Sciences  
Khyber Medical University Peshawar, Pakistan

**Professor (2/12/2025 -Till Date)**

Dental Materials, Institute of Basic Medical Sciences  
Khyber Medical University Peshawar, Pakistan

**Associate Professor (27/06/2023 -1/12/2025)**  
Dental Materials, Institute of Basic Medical Sciences  
Khyber Medical University Peshawar, Pakistan

**Assistant Professor (01/08/2018 -26/06/2023)**  
Dental Materials, Institute of Basic Medical Sciences  
Khyber Medical University Peshawar, Pakistan

**Assistant Professor (17/07/2017-31/07/2018)**  
Dental Materials  
Khyber College of Dentistry Peshawar, Pakistan

**Assistant Professor (08/03/2016-30/06/2017)**  
Lab In charge Dental Materials. Focal Person University of Health Sciences, University of Lahore, Fatima Memorial Dental Hospital, National University of Medical Sciences, Peshawar Dental College, and PGMI Lahore.  
Incharge Dental Research at Interdisciplinary Research Centre in Biomedical Materials (IRCBM), COMSATS Institute of Information Technology Lahore, Pakistan.

#### **IV. Positions held in National & International Technical Organizations (Annex D)**

1. Member International association of dental research (IADR).
2. Member British society of oral and dental research (BSODR).
3. Member British Division Oral Medicine & Pathology.
4. Member Dental Materials research (IADR).
5. Member Microbiology/Immunology research (IADR).
6. Permanent Member of Pakistan Medical and Dental Council (PMDC) since Feb 2010 to date.

#### **V. Positions held in Khyber Medical University (Annex E)**

1. Elected as member Senate, Khyber Medical University, Peshawar.
2. Elected as member Syndicate, Khyber Medical University, Peshawar.
3. Member University Selection Board, Khyber Medical University, Peshawar.
4. Member Institutional Board of Studies (IBOS) Institute of Basic Medical Sciences - Khyber Medical University, Peshawar.
5. Member of Graduate Study Committee (GSC) Institute of Basic Medical Sciences - Khyber Medical University, Peshawar.
6. Member of Grievances Committee, Khyber Medical University, Peshawar.
7. Member of Plagiarism standing committee, Khyber Medical University.
8. Focal Person IBMS for Higher Education Commission regarding NOCs and start of new MPhil and PhD programs.
9. Focal person MPhil and PhD Courses revision committee.
10. Technical expert Dental Materials in Khyber Medical University.

11. Focal Person Hybrid Programs at Khyber Medical University Peshawar

## **VI. Positions held in other Universities (Annex F)**

1. Visiting Faculty University of Health Sciences, Lahore.
2. Visiting faculty COMSATS University, Lahore Campus.

## **VII. Awards/Grants/Honors (Annex G)**

1. Research Grant from Higher education commission, Pakistan.
2. Graduate research grant for conference, UCL Eastman Dental Institute, London, UK.
3. BSODR travel grant for young researchers.
4. HEC Startup Grant 2016 COMSATS University (0.5 Million PKR).
5. HEC NRP Grant 2017 COMSATS University (7.2 Million PKR).
6. Reviewer for Journal of Biomaterials Applications
7. Reviewer for mdpi open access journal Materials
8. Reviewer for mdpi open access journal Dentistry
9. Reviewer for journal of Dental Research
10. Editorial board member Journal of Advances in Basic Medical Sciences
11. Editorial board member Journal of Khyber College of Dentistry

## **VIII. Teaching Experience (Annex H)**

Currently working as a PhD approved supervisor in the field of Dental Materials. So far have graduated 20 MPhil students, and 10 MPhil and 5 PhD students under supervision at Khyber Medical University Peshawar. Previously I have been teaching BDS (Dental Materials) students. I am also supervising MPhil / MDS Clinical and Dental material students from UHS, UOL, and PGMI Lahore. I am a young, professional, enthusiastic, and committed researcher. I have gained valuable experiences during my PhD degree by directly working under internationally recognized people in biomaterials. I have potential to work in a team. During my PhD time, I have supervised several MSc, M. Clin Dent, and D. Dent students in their research projects. I am well qualified to guide, and support student at undergraduate and postgraduate level.

## **IX. Research Interests (Annex I)**

My current research centers on the development and characterization of dental composites. My research focuses on various self-adhesive, re-mineralizing, and anti-bacterial materials, and their use in various biomaterials for clinical use.

Development of various animal models that can be used as an alternate to human tissues in vitro studies.

I am also interested in interface studies, and bonding between tooth surfaces, and restorations.

## **X. Work Experience (Annex J)**

**Worked as a Front-Line Warrior against COVID-19 in Public Health Reference Lab, Khyber Medical University, Peshawar (2020).**

**Dental Surgeon Khyber College of Dentistry Peshawar, Pakistan (2008 – 2009).**

Duties include dealing patients in both In and Outpatient departments, general and specialized dentistry.

**Part-time student officer at University College London Union (UCLU), U.K (2011- 2015).**

Duties involved taking orders and stock control, generally dealing with customers, and organizing other assistants. I built a strong positive relationship with customers and staff.

**Student supervisor at Biomaterial and Tissue Engineering, Eastman Dental Institute, University College London, U.K (2011-2015).**

Duties include giving presentations, lectures, and helping postgraduate's students in the laboratory, and their research writing. Additionally, organizing various courses, and workshops.

## **XI. Conferences / Workshops Organized & Attended (Annex K)**

1. 28<sup>th</sup> Asia Pacific Dental Congress arranged by Pakistan Dental Association Karachi, Pakistan 2006.
2. 24<sup>th</sup> National Dental Conference arranged by Pakistan Dental Association, Lahore, Pakistan 2008.
3. 91<sup>st</sup> IADR/AADR/CADR General Session Seattle, Washington, USA 2013.
4. TERMIS-EU, Istanbul Conference, Turkey 2013.
5. UK Society for Biomaterials Annual Conference, Birmingham, UK 2013.
6. 22<sup>nd</sup> European Dental Materials Conference, Birmingham, UK 2013.
7. British Society for Oral and Dental Research, Bath, UK 2013.
8. 2<sup>nd</sup> International conference on Dental and Oral Health, Dubai, UAE 2014.
9. 92<sup>nd</sup> IADR/AMER General session, Cape Town, South Africa 2014.
10. European Society of Biomaterials, Liverpool, UK 2014.
11. 93<sup>rd</sup> IADR/AADR/CADR General Session Boston, Massachusetts, USA 2015.
12. 5<sup>th</sup> International symposium on Biomedical Materials, Lahore, Pakistan 2016.
13. Pak-China Business Forum, Lahore, Pakistan 2016-17.
14. Dental & Biomaterials Summer camp, Lahore, Pakistan 2016.
15. KARECON conference, Peshawar, Pakistan 2018.
16. BMEDCON conference, Peshawar, Pakistan 2023.
17. PPS conference 2023, Peshawar, Pakistan 2023.
18. ICHR conference 2023, Peshawar, Pakistan 2023.
19. ICHR conference 2025, Peshawar, Pakistan 2025.

## **XII. Research Publications in International Impact Factor and HEC Recognized HJRS journals (Annex L)**

1. S Liaquat., L Bozec., PF Ashley., & AM Young. Fibre-reinforced Dental Composites with Antibacterial, Re-mineralising and Adhesive Components. Proceedings of International Association of Dental Research, 91st IADR/AADR/CADR General Session Seattle, Washington, USA, 20-23/03/2013. Journal of Dental Research, 92 (Specific Issue A).
2. NJ Walters., MA Khan., S Liaquat., & AM Young. Novel Re-mineralising, Antimicrobial Dental & Orthopaedics Resin Based Composites. Proceedings of Tissue Engineering & Regenerative Medicine International Society (TERMIS) European Chapter Conference, Istanbul, Turkey, 17-20/06/2013. Tissue Engineering Part A.
3. S Liaquat., L Bozec., PF Ashley., & AM Young. Mechanical and Adhesion Properties of Dental Composites. Proceedings of European Dental Materials Conference, Birmingham, UK, 29-30/08/2013.
4. S Liaquat., & AM Young. Mechanical & Adhesion Properties of Adhesive, Re-mineralising & Anti-bacterial Dental Composite. Proceedings of British Society for Oral and Dental Research, Bath, UK, 09-11/09/2013.
5. S Liaquat., L Bozec., PF Ashley., & AM Young. Adhesion and Mechanical Properties of Dental Composites. Proceedings of 2<sup>nd</sup> International Conference on Dental and Oral Health, Dubai, UAE, 21-23/04/2014.
6. S Liaquat., L Bozec., PF Ashley., & AM Young. Quantification of Factors Affecting Composite Bonding to Ivory Dentine. Proceedings of International Association of Dental Research, 92<sup>nd</sup> IADR/AMER General Session, Cape Town, South Africa. 25-28/06/ 2014.
7. S Liaquat., L Bozec., PF Ashley., & AM Young. Use of Ivory to Assess Composite Dentine Bonding. Proceedings of the European Society of Biomaterials. Liverpool, UK. 31/08/-03/09/2014.
8. S Liaquat., L Bozec., PF Ashley., & AM Young. High-Strength, Low-Shrinkage Composite with Potential to Self-Bond to Dentine. Proceedings of International Association of Dental Research, 93<sup>rd</sup> IADR/AADR/CADR General Session Boston, Massachusetts, USA, 11-14/03/2015.
9. S Liaquat., A Aljabo., MA Khan., HB Nuba., L Bozec., PF Ashley., & AM Young. Characterization of Dentine to Assess Bond Strength of Dental Composites. Materials 2015,8(5),2110-2126, doi: 10.3390/ma8052110.

10. A Aljabo., W Xia., S Liaqat., MA Khan., JC Knowles., P Ashley., & AM Young. Conversion, Shrinkage, Water-sorption of Flexural Strength and Modulus of Remineralising Dental Composites. *Dental Materials* 2015, Nov;31(11):1279-8,9 doi: 10.1016/j.dental.2015.08.149.
11. P Panpisut., S Liaqat., E Zacharaki., W Xia., L Petridis., & AM Young. Dental Composites with Calcium / Strontium Phosphates and Polylysine. Published in *PLOS ONE* Oct;11 2016.
12. M. S. Zafar, S. Liaqat, S. Najeeb, Z. Khurshid, M. Alrahabi and S. Zohaib. Resin Polymers Based Tooth Coloured Filling Dental Materials. (Book Chapter). Published in *Polymer science: research advances, practical applications and educational aspects* (Formatex Research Center) 2016.
13. N Irshad., H Jabeen., & S Liaqat. To determine the ph of commercially available whitening toothpastes, *Proceedings of 5<sup>th</sup> International Symposium on Biomedical Materials*, Lahore, Pakistan 2016.
14. M Saleem., & S Liaqat. Anti-bacterial agents used in dental Composites: A Meta Analysis. *Proceedings of 5<sup>th</sup> International Symposium on Biomedical Materials*, Lahore, Pakistan 2016.
15. S Iftikhar., F Manzoor., S Liaqat., & AS Khan. Comparative Surface Characterization of Manual and Rotary Endodontic File Systems. *Proceedings of 5<sup>th</sup> International Symposium on Biomedical Materials*, Lahore, Pakistan 2016.
16. MZ Chaudhry., & S Liaqat. Anti-bacterial modifications of Glass ionomer cements: A Meta-analysis. *Proceedings of 5<sup>th</sup> International Symposium on Biomedical Materials*, Lahore, Pakistan 2016.
17. Rehman H, Zaki S, Riaz H, Qadeer A, Liaqat S. Awareness and attitudes of partially dentate patients about replacement of missing teeth. *J Rehman Med Inst.* 2019 Oct-Dec;5(4):7-12.
18. Farman H, Fayyaz S, Jabeen H, Muhammad N, Khan MA, Liaqat S. Aloe Vera in Dentistry: A Review. *Biomedical Letters* 2021; 7(2):178-186. 2021 Dec 30.
19. Muhammad N, Sarfraz Z, Zafar MS, Liaqat S, Rahim A, Ahmad P, Alsubaie A, Almalki ASA, Khandaker MU. Characterization of various acrylate based artificial teeth for denture fabrication. *J Mater Sci Mater Med.* 2022 Jan 24;33(2):17. doi: 10.1007/s10856-022-06645-8. PMID: 35072817; PMCID: PMC8786782.
20. Liaqat, S., & Jabeen, H. (2022). Conversion, Polymerization Shrinkage, Heat Generation, and Depth of Cure of Novel Dental Composites: *Pakistan BioMedical Journal*, 5(1). <https://doi.org/10.54393/pbmj.v5i1.246>
21. Malik, Z., Qasim Butt, D., Qasim Butt, Z., Muhammad, N., Kaleem, M., Liaqat, S., Adnan Khan, M. and Samad Khan, A. (2021), Evolution of Anticariogenic Resin-Modified Glass Ionomer Cements. *ChemBioEng Reviews*, 8: 326-336. <https://doi.org/10.1002/cben.202100005>

22. Rehman H, Khan A, Liaqat S, Zaki S, Riaz H, and Qadeer A. (2021) Frequency of Type of Common Major Connector Design Employed in Removable Partial Dentures Provided to Patient. J Khyber College of Dentistry, Mar 2021, Vol 11, No 1.
23. Khattak, P., Khalil, T. F., Bibi, S., Jabeen, H., Muhammad, N., Khan, M. A., & Liaqat, S. (2022). Juglans Regia (Walnut Tree) Bark in Dentistry. Systematic Review. Pakistan BioMedical Journal, 5(2). <https://doi.org/10.54393/pbmj.v5i1.201>
24. Pasha, M., Muhammad, N., Shahnawaz, S., Najmi, Y., Shahroz, N. and Liaqat, S. (2022). Ceramic Nanomaterials in Dental Applications. In Nanoengineering of Biomaterials (eds S. Jana and S. Jana). <https://doi.org/10.1002/9783527832095.ch22>
25. Liaqat S, Jabeen H, (2022), Polymerization Shrinkage, Degree of Conversion, Depth of Cure, And Heat Generation of Novel Experimental and Commercial Composite. J Khyber College of Dentistry, Dec 2021, Vol 11, No 4
26. Aziz S, Ahmad S, Jamal S, Jabeen H, Muhammad N, Khan MA, et al. Ginseng in Dentistry: a systematic review. [Review Article]. J Rehman Med Inst.2021 Oct-Dec;7(4):24-31
27. Liaqat S, Jabeen H. Mechanical, Chemical and Bond analysis of Novel Experimental and Commercial Composites. J Med Sci 2022 ;30(1)
28. Liaqat, S., Durrani, A., Sajjad, F., Ullah, S., Jabeen, H., Muhammad, N., & Khan, M. A. (2022). Sophora Flavescens in Dentistry: A Systematic Review. Pakistan BioMedical Journal, 5 (3). <https://doi.org/10.54393/pbmj.v5i3.338>
29. Aziz S, Khattak P, Durrani A, Jabeen H, Khan M.A, Muhammad N, & Liaqat S (2022), Materials Used in 3D Printing for Bone Defects: A Systematic Review. J Khyber College of Dentistry, Mar 2022, Vol 12, No 1
30. Liaqat, S., Farman, H., Bibi, S., Fayyaz, S., Ullah, S., Jabeen, H., Khan, M. A., & Muhammad, N. (2022). Approval and Legislation Involved in Development of Medical Devices in Dentistry – A Systematic Review: Approval and Legislation of Medical Devices in Dentistry. Pakistan BioMedical Journal, 5(6). <https://doi.org/10.54393/pbmj.v5i6.495>
31. Liaqat, S., Jamal, S., Ahmad, S., Sajjad, F., Khalil, T. F., Jabeen, H., Khan, M. A., & Muhammad, N. (2022). Ethical Issues and Use of Animal Models in Dentistry - A Systematic Review: Animal studies, Ethical issues, Dentistry, Artificial Intelligence. Pakistan BioMedical Journal, 5(6). <https://doi.org/10.54393/pbmj.v5i6.494>
32. Amin, N., Siddiqui, U., Muhammad, N., Liaqat, S., Khan, M.A. and Rahim, A. (2022). Advancement of Guided Tissue Regeneration (GTR) Membranes for Dental Applications. In Applications of Polymers in Surgery Volume 123. DOI: 10.21741/9781644901892-6

33. Khan, G., Roghani, K., Muhammad, N., Liaqat, S., and Khan, M.A. (2022). Advancements in Polymeric Denture Lining Materials. In Applications of Polymers in Surgery Volume 123. DOI: 10.21741/9781644901892-7
34. Khan, M.A., Babar, B.Z., Shereen, A., Maqbool, H., Afridi, W.K., Liaqat, S., Imran, M., and Muhammad, N. (2022), Evaluation of Compressive Strength of Conventional Glass Ionomer Cement and Resin Modified Glass Ionomer Cement. J Khyber College of Dentistry, Jun 2022, Vol 12, No 2
35. Arfa Ahmed, Nawshad Muhammad, Asif Ali, Zeeshan Mutahir, Abdul Samad Khan, Faiza Sharif, Asma Tufail Shah, Zia Ul Haq, Saad Liaqat & Muhammad Adnan Khan (2022) Effect of augmentin-coated silver nanoparticles on biological and mechanical properties of orthodontic bracket cement, Materials Technology, DOI: 10.1080/10667857.2022.2103612
36. Liaqat S, Tariq S, Hayat I, Mobeen B, Fayyaz S, Jabeen H, et al. (2022) Therapeutic Effects and Uses of Ozone in Dentistry: A Systematic Review. Ozone: Science & Engineering. <https://doi.org/10.1080/01919512.2022.2125363>.
37. Liaqat S, Jabeen H. (2022) Mass and Volume Changes of Novel Chlorhexidine, Polylysine, and Composites Based on Calcium Phosphate. KMUJ; Vol 14 No 3
38. Sabir, Muhammad, Nawshad Muhammad, Usama Siddiqui, Abdul Samad Khan, Mariam Raza Syed, Abdur Rahim, Saad Liaqat, et al. "Effect of Nanocrystalline Cellulose/Silica-Based Fillers on Mechanical Properties of Experimental Dental Adhesive." Polymer Bulletin (2022/10/08 2022). <https://doi.org/10.1007/s00289-022-04503-9>
39. Liaqat, Saad, Haleema Qayyum, Zainab Rafaqat, Abdul Qadir, Sarmad Fayyaz, Aiman Khan, Humaira Jabeen, Nawshad Muhammad, and Muhammad Adnan Khan. "Laser as an Innovative Tool, Its Implications and Advances in Dentistry: A Systematic Review." Journal of Photochemistry and Photobiology (2022): 100148.
40. Main K, Khan MA, Nuutinen JP, Young AM, Liaqat S, Muhammad N. Evaluation of modified dental composites as an alternative to Poly (methyl methacrylate) bone cement. Polymer Bulletin. 2023 Jan 30:1-6. <https://doi.org/10.1007/s00289-023-04677-w>
41. Alsaiani M, Khan G, Khan MA, Liaqat S, Alkorbi AS, Irfan M, Rizk MA, Muhammad N. Evaluation of the Effect of Lignin on Mechanical, Water Sorption, and Antifungal Properties of Silicone Based Denture Soft Liners. Silicon. 2023 May 8:1-4.
42. Jabeen H, Muhammad N, Siddiqui U, Sabir M, Ahmad N, Liaqat S. Effect of Tio2 Decorated Cellulosic Materials Addition on Mechanical and Biological Properties of Dental Adhesive Composites. Cellulose Chemistry & Technology. 2023 Volume 57 Issue 5-6 May-June. <https://doi.org/10.35812/CelluloseChemTechnol.2023.57.48>
43. Alsaiani M, Roghani K, Liaqat S, Alkorbi AS, Sharif F, Irfan M, Rizk MA, Uroos M, Ahmad N, Muhammad N. Effect of Ionic Liquids on Mechanical, Physical, and Antifungal Properties

- and Biocompatibility of a Soft Denture Lining Material. ACS omega. 2023 Jul 17. <https://doi.org/10.1021/acsomega.3c02677>
44. Khan, Mohammad Adnan, Nawshad Muhammad, Saad Liaqat, Munazzah Ejaz, Sarmad Fayyaz, Hoor Ali, and Taj Ali Khan. "Mechanical and antibacterial properties of conventional pit and fissure sealants with addition of miswak fibers." *Biomaterial Investigations in Dentistry* 10, no. 1 (2023): 2271972. <https://doi.org/10.1080/26415275.2023.2271972>
  45. Farman, Humaira, Mohammad Adnan Khan, Abdulmohsin J. Alamoudi, Meshal Alshamrani, Saad Liaqat, Waleed Rizg, Faiza Sharif, Rasheed A. Shaik, and Nawshad Muhammad. "Fabrication and Evaluation of Polymeric Composite GTR Membrane from Eggshell Powder, Incorporated Polylactic Acid (PLA) and Polyethylene Glycol (PEG) Based GTR Membrane for Periodontal Application: In Vitro Evaluation." *Frontiers in Materials* 10: 1234065. <https://doi.org/10.3389/fmats.2023.1234065>
  46. Hussain S, Rauf M, Aleem S, Rehman K, Khan MA, Liaqat S, Muhammad N, Khan MA. Clinical characteristics and oral manifestations of COVID-19: a cross-sectional study from Peshawar, Pakistan. *Khyber Med Univ J* 2023;15(4): pp. <https://doi.org/10.35845/kmu.j.2023.23396>
  47. Gul, Sajida, Muhammad Adnan Khan, Saad liaqat, Naveed Ahmad, and Nawshad Muhammad. "Assessment of Chlorohexidine-Coated Cotton Filler Addition on Resin-based Fissure Sealants' Mechanical, Water Sorption, and Antibacterial Properties." *European Journal of Materials* (2024): 1-13 <https://doi.org/10.1080/26889277.2024.2336225>
  48. Sumaira Aziz, Nawshad Muhammad, Jamal Nasir Khan, Warda Khan Yousafzai, Humaira Jabeen, Muhammad Adnan Khan, & Saad Liaqat, Nanotechnology in Pit and Fissure Sealants: A Systematic Review. *J Khyber College of Dentistry*, June 2024, Vol 14, No 2 <http://doi.org/10.33279/jkcd.v14i2.520>
  49. Anwar, S., Liaqat, S., Ullah, R., Iqbal, Z., Rahman, F., Ali, E. A., ... Muhammad, N. (2024). Evaluation of dimensional stability, setting time, tensile strength, and rheological properties of kaolin clay incorporated alginate impression material. *International Journal of Polymer Analysis and Characterization*, 1–16. <https://doi.org/10.1080/1023666X.2024.2398152>
  50. Ahmad, Saira, Saad Liaqat, Riaz Ullah, Zafar Iqbal, Essam A. Ali, Fozia Rahman, Umar Nishan, Sandleen Feroz, and Nawshad Muhammad. 2024. "Fabrication of Drug Loaded Polylactic Acid/Keratin/Polyethylene Glycol GTR Membrane for Periodontal Application." *International Journal of Polymeric Materials and Polymeric Biomaterials*, October, 1–14. doi:10.1080/00914037.2024.2416447.
  51. Zeeshan, Muhammad, Nayab Amin, Nawshad Muhammad, Usama Siddiqui, Zainab Sultan, Humaira Jabeen, And Saad Liaqat. "Synthesis And Characterizations of Novel Miswak Powder-Based Dental Composites." *Cellulose Chemistry & Technology*. 2024 Volume 58 Issue 7-8 July-August doi: <https://doi.org/10.35812/CelluloseChemTechnol.2024.58.66>

52. Ayub, Zainab, Liaquat, Saad, Alamoudi, Abdulmohsin J., Alshamrani, Meshal, Rizg, Waleed Y., Shaik, Rasheed A., Ahmad, Naveed, Feroz, Sandleen, Muhammad, Nawshad, Effect of Nystatin Coated Copper Oxide (CuO) Particles on Mechanical, Thermal, and Antifungal Properties of Polymethyl Methacrylate (PMMA)–Based Denture Materials, *Advances in Polymer Technology*, 2024, 5530338, 12 pages, 2024. <https://doi.org/10.1155/2024/5530338>
53. Muhammad, Nawshad, Palwasha Khattak, and Saad Liaquat. 2024. "The Potential of Ceramic Nanomaterials in Preventive Dentistry." *Nanomedicine*, November, 1–3. doi:10.1080/17435889.2024.2418286.
54. Lone, Saadia Bano, Usama Siddiqui, Nayab Amin, Munazzah Ejaz, Saad Liaquat, Anila Asif, and Zohaib Khurshid. "Evaluation of Monomer Conversion, Vickers Hardness, Compressive Strength & Water Sorption of Commercial Dental Composite Resins." *Brazilian Dental Science* 27, no. 4 (2024). <https://doi.org/10.4322/bds.2024.e4433>
55. Khan, Muhammad Amer, Nawshad Muhammad, Saad Liaquat, Adnan Khan, Humaira Jabeen, Hasham Khan, And Sumbal Anwar. "Effect Of Lignocellulosic Filler On Mechanical And Rheological Properties Of Alginate-Based Dental Impression Materials." *Cellulose Chemistry & Technology* 59 (2025).
56. Malik A, Fida U, Hassan S, Aziz S, Jabeen H, Khan MA, Muhammad N, Liaquat S. CRISPR-based gene and cell therapy designs to improve treatment efficacy and safety for patients with genetic disorders, infectious diseases and cancer. *J Rehman Med Inst.* 2025 April June;11(02):81-87
57. Batool, Iqra, Saira Khalid, Saad Liaquat, Hammad Hassan, Aiman Khan, and Muhammad Aamir Rafique. "Comparative Analysis of Polyether Ether Ketone and Aluminum Oxide Fillers in Reinforcing Polymethylmethacrylate Denture Base Resin." *Pakistan Journal of Medicine and Dentistry* 14, no. 3 (2025): 58-66.
58. Tariq, Samia, Saad Liaquat, Irrum Mushtaq, Nawshad Muhammad, Abdul Samad Khan, Ahmed H. Albariqi, Fahad Y. Sabei, et al. 2025. "Endodontic Sealers Loaded with Dexamethasone Adorned Silver Structures: Mechanical and Biological Properties." *Composite Interfaces*, November, 1–20. doi:10.1080/09276440.2025.2585590.
59. Ikram S, Liaquat S, Feroz S, Sharif F, Fawzy KF, Ahmad N, Nishan U, Alkhtani F, Muhammad N. Effect of zinc oxide-doped hydroxyapatite nanoparticles on the friction reduction and antibacterial properties of orthodontic ceramic brackets and stainless-steel wires. *J Mater Sci Mater Med.* 2025 Nov 7;36(1):102. doi: 10.1007/s10856-025-06958-4. PMID: 41201770; PMCID: PMC12594708.
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Nanoparticles as a Diagnostic and Therapeutic Tool in Oral Cancer: A Systematic Review." *Journal of Rehman College of Dentistry* 6, no. 03 (2025): 123-131.

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### **XIII. Courses, Seminars, and Lectures Attended (Annex M)**

1. Rapid hydroxyapatite layer formation on novel fast setting, low modulus composite bone cements. Adnan Khan, *Biomaterials & Tissue Engineering* 2012.

2. Modeling and inactivation of peri-implantitis microcosm: in-vivo and in-vitro outcomes. Vanessa Soussa, Periodontology 2012.
3. Relationship of diabetes mellitus and periodontitis: microbial profile. Linda Liu, Periodontology 2012.
4. Centre for Languages & International Education courses: full term pronunciation and public speaking for MPhil/PhD students 2012.
5. Centre for Languages & International Education courses: full term thesis writing option A for MPhil/PhD students 2012.
6. Publishing Scientific Papers with LaTeX/BibTex Spring 2011/12.
7. Library Skills Training for Science and Engineering Students Endnote - spring 2011/12.
8. Biomaterials and their optimization for the treatment of vision loss. Rachel Williams, Dept. Of Eye & Visual Science, University of Liverpool 2012.
9. How dentistry got its teeth into UK Bio bank. John Galloway, Oral & Dental Lead UK Bio bank, EDH 2012.
10. O2 regulating materials: breathing new life into tissue regeneration. Gavin Jell, Dept. of Surgical and Interventional Sciences, UCL Royal Free Medical School 2012.
11. Charting with Excel Charting with Excel - 2011/12.
12. Statistics for Researchers Scientific Method, Probability & Statistics (autumn 11/12).
13. Phage dUTPases control transfer of virulence genes by an oncogenic G protein like mechanism. José R Penadés, Instituto Investigación en Ganadería de Montaña, Castellón, Spain 2011.
14. Your PhD Part 3 - Managing and Producing Your Thesis and Reports Managing and Producing Your Thesis and Reports 2011.
15. Understanding Statistical Concepts in Clinical Research Workshop 1 - 2011/12. Your PhD Part 2 - Management Skills for Researchers Management Skills for Researchers: 15 November 2011.
16. Your PhD Part 1 - Reading for a PhD - The First Important Steps Reading for a PhD - The First Important Steps: 11 November 2011.
17. Transition of *Enterococcus faecium* from commensal organism to nosocomial pathogen. Rob Willems, University Medical Center Utrecht, the Netherlands 2011.

18. Maximizing Your Potential Part 1: Introduction to Skills Development and the Research Student Log 2011/12.
19. PhD Induction Program for School of Life and Medical Sciences (SLMS) October 2011/12.
20. Osteogenic adult stem cells and titanium constructs for repair and regeneration UCL 2011.

#### **XIV. Laboratory Techniques Expertise (Annex N)**

1. Design, characterization and biological evaluation of complex, multifunctional biomaterials:
2. Synthesis of materials including resin-based dental and orthopedics composites, calcium phosphate cements and hydrogels.
3. Mechanical testing with Universal testing machine for (strength, adhesion, modulus, toughness, resilience), including fatigue testing.
4. Fourier Transform Infrared Spectroscopy. UV-Visible Spectroscopy.
5. Raman Spectroscopy.
6. Energy-Dispersive X-ray Spectroscopy. Light and scanning electron microscopy.
7. Adherence to International Standards (ISO). Diamond saw cutting tools.
8. Mass, Volume, along with density determination.
9. Human, bovine teeth, and Elephant Ivory tusk characterization, and handling.
10. Use of different Laboratory and scientific software's, and programs.

#### **XV. General Skills (Annex O)**

General skills in research project management and data analysis. Skills include:

##### **Computing Skills**

**Applications** Microsoft Office Suite, SPSS, Origin Pro, Internet Explorer, Paint Shop Pro, Endnote, Reference manager, online data base access, and several e-mail packages.

#### **XVI. Co-Curricular Work and Distinctions (Annex P)**

1. UCLU staff from September 2011 till Nov 2015.
2. Class Representative in Bachelor of Dental Surgery KCD Peshawar 2004 to 2009. Sports Secretary of Khyber College of Dentistry 2007.
3. Editor Scientific Section, Qindeel Magazine, Khyber College of Dentistry, Peshawar 2009.
4. Organizer 14<sup>th</sup> National Radiological Conference, PC Hotel, Peshawar in Nov. 2006. Organizer and Participant in Hypersensitivity Conference, Khyber College of Dentistry Peshawar 2009.
5. Organizer Literary Week, Khyber College of Dentistry, Peshawar in 2005, 2006, 2007.
6. Incharge Biological sciences Afghan students funded by USAID and HEC 2016 onward.

7. Incharge Clinical outreach at COMSATS Lahore.

### **XVII. PhD Scholars Supervised / Under supervision (Annex Q)**

- |    |                                                     |            |                       |      |
|----|-----------------------------------------------------|------------|-----------------------|------|
| 1. | Dr. Usama Siddiqui, IBMS, Khyber Medical University | Supervisor | Lab Work Completed    | 2023 |
| 2. | Dr. Saira Khalid, IBMS, Khyber Medical University   | Supervisor | Course work completed | 2023 |

### **XVIII. MPhil scholars supervised / under supervision (Annex R)**

- |     |                                                     |            |                      |      |
|-----|-----------------------------------------------------|------------|----------------------|------|
| 1.  | Dr. Muhammad Zeeshan, University of Health Sciences | Supervisor | Degree completed     | 2021 |
| 2.  | Dr. Zainab Sultan, PGMI, Lahore                     | Supervisor | Degree completed     | 2022 |
| 3.  | Dr. Shehzad Fahad, Khyber Medical University        | Supervisor | Degree completed     | 2022 |
| 4.  | Dr. Mobeen Ali, Khyber Medical University           | Supervisor | Degree completed     | 2023 |
| 5.  | Dr. Shawana, Khyber Medical University              | Supervisor | Degree completed     | 2022 |
| 6.  | Dr. Aimen Tariq, Khyber Medical University          | Supervisor | Degree completed     | 2022 |
| 7.  | Dr. Aneesa Durrani, Khyber Medical University       | Supervisor | Research in progress | 2023 |
| 8.  | Dr. Sahar Jamal, Khyber Medical University          | Supervisor | Degree completed     | 2023 |
| 9.  | Dr. Sabra Bibi, Khyber Medical University           | Supervisor | Degree completed     | 2023 |
| 10. | Dr. Fatma Sajjad, Khyber Medical University         | Supervisor | Degree completed     | 2023 |
| 11. | Ibrar Ahmad, Khyber Medical University              | Supervisor | Degree completed     | 2023 |
| 12. | Dr. Huma Riaz, Khyber Medical University            | Supervisor | Research in progress | 2023 |
| 13. | Dr. Haleema Qayyum, Khyber Medical University       | Supervisor | Degree completed     | 2023 |
| 14. | Dr. Hanniyah Sadia, Khyber Medical University       | Supervisor | Research in progress | 2023 |
| 15. | Dr. Ayesha Rehman, Khyber Medical University        | Supervisor | Research in progress | 2024 |
| 16. | Dr. Aimen Dawood, Khyber Medical University         | Supervisor | Research in progress | 2024 |
| 17. | Hamza Khan, Khyber Medical University               | Supervisor | Research in progress | 2024 |

### **XIX. References (Available From Referees on Request)**

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(PhD Supervisor)

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