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Qualification

PhD (Structural Engineering); Universiti Teknologi PETRONAS, Malaysia (October, 2015)
PhD Thesis Title: *Analytical Modelling and Finite Element Analysis of HPFRC Beams reinforced with PVA and Basalt Fibres*

M. Engg. (Structures); NED University of Engineering & Technology, (Jan. 2008)

B. Engg. (Civil); NED University of Engineering & Technology, (Feb. 2004)

Employment

1. Professor, Department of Civil Engineering, Thar Institute of Engineering, Sciences and Technology (TIEST), Mithi
   (January. 2022 to date)
2. Associate Professor, Department of Civil Engineering, Thar Institute of Engineering, Sciences and Technology (TIEST), Mithi (July. 2021 to January. 2022)
3. Associate Professor, Department of Civil Engineering, NED University of Engineering and Technology, Karachi
   (July. 2017 to date)
4. Assistant Professor, Department of Civil Engineering, NED University of Engineering and Technology, Karachi
   (Mar. 2008 to July. 2017)
5. Lecturer, Department of Civil Engineering, NED University of Engineering and Technology, Karachi
   (Feb. 2005 to Mar. 2008)
6. Structural Engineer, Mushtaq & Bilal Consulting Engineers, Karachi
   (Jan 2004 to Feb 2005)

Projects and Achievements

- Worked on numerous national and international designed based projects including Indus Motors CKD Yard Shed designing (Karachi), Indus Motors Administration Block (Karachi), Cafeteria for ABN Amro Bank (Karachi), TCF School (Gwadar), Extension of Banquet Hall, PC Pindi (Rawalpindi). Khan's Villa (Dubai).
- Worked on strengthening based Projects including Restrengthening of Asia Pacific Building (Karachi) and conservation of Sheesh Mahal (Lahore)

Research Funding

- PI on **"Durability Studies of Pozzolanic Cement Concrete"** research project of Rs. 1 million Funding supported by NED University (2019)
- Co-PI on **"Development of Environment and Energy Conservative Indigenous Cement Replacing Materials"** research project of Rs. 1 million Funding supported by NED University (2019)
- Co-PI on **"Performance of Recycled Aggregate Concrete in Aggressive Environment"** research project of Rs. 1 million Funding supported by NED University (2019)
- Co-PI on "**Development of Cost-Effective Structural Concrete Formulation using Limestone Calcined Clay-Based LC^3 Cement Blend with Domestic Resources and its Application in a Pilot Project**", NRPU Proposal No. 14074 (Funding Amount: PKR 17,250,389/- (Seventeen Million Two Hundred Fifty Thousand Three Hundred Eighty Nine)
- Co-PI on "**Constitutive Modelling of Self-Healing PVA Fibre Reinforced Concrete (SHPFRC)",** NRPU Proposal No. 17056 (Funding Amount: PKR 7,900,000/- (Seven Million Nine Hundred Thousand)

- "**Development of Fly Ash Based Pavers**" NED-HUBCO joint project (Fynding Amount: PKR 1 million)

Administrative Responsibilities

- Area Coordinator, Department of Civil Engineering, Thar Institute of Engineering, Sciences and Technology
- Supervisor, Durability Lab, Department of Civil Engineering, NED University of Engineering and Technology, Karachi 75270, Karachi

Academic Responsibilities

PhD Supervision

- Co-Supervisor, "Durability of recycled aggregate concrete" (Completed in 2022)
- Supervisor, "Stress induced Corrosion in high tensile strength steel", (in Progress)

Masters Supervision

- "Development of foamed cementitious composite blocks for light weight infilled walls" – Ms. Hiba (Completed in 2022)
- "Assessment of various construction blocks based on cost, weight and strength" – Mr. Shahzaib (Completed in 2022)
- "Response of Self-Healing PVA Fibre Reinforced Cementitious Composites for Serviceability - Mr. Muhammad Bilal (Completed in 2022)
- "Investigation of hydration properties of various ordinary Portland cement (OPC) brands available in Pakistan – Syed Zahid Hasan (In Progress)
- "Flexural investigation of PVA fibre reinforced self-healing lightweight aggregate concrete – Mr. Rasool Badshah (In Progress)
- "Tensile Behaviour of PVA Fibre Reinforced Self-Healing Concrete" – Ms. Muneeba Ashraf (In Progress)

FYP PROJECTS

- Behaviour of LC^3 Concrete containing silica powder and sea water (2021)
- Behaviour of ordinary Portland Cement Concrete Containing light weight aggregates (2021)
- Bheaviour of Ultra High Performance Fibre Reinforced Concrete (UHPFRC) containing twisted steel fibres (2021)
- Surveying and mapping of potential clay reserves in KPK region (2021)
- Analysis and Design of Marquee structure (2021)
- Behaviour of Geopolymer Concrete at ambient temperature (2021)
- Basic creep and autogenous shrinkage of metakaolin based concretes (2021)
- Behaviour of Biomass concrete (2021)
- Surveying and mapping of potential clay reserves in Sind/Pakistan (2020)
- Durability assessment of LC^3 cement blend (2020)
- Development of lighter-weight and low cost concrete masonry blocks for structural application (2020)
- Mechanical properties of rubberised PET fiber reinforced Concrete. (2019)
- Effect of water/cement ratio on the Durability Properties of Recycled Aggregate Concrete (2019)
- Effect of Fly Ash on the Durability Properties of Recycled Aggregate Concrete (2019)
- Development of Crack Healing Material (2018)
- Durability of recycled aggregate concrete (2018)
- Durability of concrete with recycled aggregates (2017)
- Comparative analysis of RC building with and without expansion Joints
- Wind and Tier 3 analysis and Retrofit Design of an existing telecommunication tower (2017)
- Behaviour of HPFRC Beam Column Joint subjected to repetitive loading (2016)
- Behaviour of Steel-PP Hybrid FRC (2016)
- Behaviour of PVA-PP Hybrid FRC (2016)
- Durability of High Performance Slag Concrete in Marine Environment (2016)
- Performance of Different fillers in concrete (2016)
- Strengthening of RC Beams in flexure using Ferrocement
- Behaviour of reinforced concrete beam detailed for shear in compliance with compressive Force Path Method
- Behaviour of Reinforced Concrete Beams Containing Steel Fibres
- Strengthening of Reinforced Concrete Beams already tested to Failure
- Development of Post Fire Assessment Model
- Study of different super structure sections of prestressed concrete bridge
- structure Computer Aided Analysis and Design of Post Tensioned Box Girder Bridge
- Behaviour of High Rise Building using Two Different Seismic Analysis Strategies
- Computer Aided Analysis and Design of a High Rise Building Using International Building Code
- Comparative Analysis of the Behaviour of Dual System and Moment Resisting Frame

Courses Taught

Postgraduate Courses taught

- Concrete Durability (PhD course taught in Fall 2017-18 semester at NED UET)
- Seismic Analysis and Design (MS course taught in Fall 2017 semester at Indus University)
- Repair, Maintenance and Strengthening of RC Structures (MS course taught in Spring 2017 semester at Indus University)
- Computer Methods in Structural Analysis (M. Engg course taught in Fall 2022 semester at NED University)

Undergraduate Courses taught

- Engineering Drawing-II (Undergraduate course taught at NED University)
- Reinforced Concrete Design - I (Undergraduate course taught at NED University)
- Reinforced Concrete Design – II (Undergraduate course taught at NED University)
- Design of Steel Structures (Undergraduate course taught at NED University)
- Structures for Architects – II (Undergraduate course taught at NED University)
- Structures for Architects – III (Undergraduate course taught at NED University)
- Chemistry for Civil Engineers
- Reinforced Concrete Design – II
- Reinforced Concrete Design – II
- Structural Design and Drawing

Worked as Team Member on International Projects

- Building Capacity in Pakistan to Seismically Retrofit Essential Structures [Pakistan-US Joint Project]

Member review panel on Journal

- 2018 Smart Materials and Structures (2017 Impact Factor: 2.963)
- 2018 Construction and Building Materials (Impact factor: 3.169 (2017))
- 2018 Iranian Journal of Science and Technology-Transaction of Civil Engineering (Impact factor: 0.5 (2017))
- 2018 Materials Research Express
- ASCE Journal of Materials in Civil Engineering (Impact factor: 1.43 (2015/2016))
- Materials and Design Journal (2016), Elsevier Journal (Impact factor: 3.501 (2014))
- 2019-2022 Construction and Building Materials (Impact factor: 3.169 (2017))
- 2019-2022 Journal of Building Engineering (Impact factor: 5.318 (2021-22))
- 2020-2022 Structures Journal (Impact factor: 5.006 (2020))
- 2021 Advances in Material Sciences and Engineering
- 2022 Coating Journal (Impact factor: 2.382 (2020))

Member review panel on peer reviewed conferences

- International Civil and Infrastructure Engineering (InCIEC 2013), 22-25th September 2013, Kuching, Sarawak, Malaysia (2 papers reviewed; http://inciec2013.myies.org/?page_id=154)
- 2013 IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA), 22-25th September 2013, Kuching, Sarawak, Malaysia (1 paper reviewed)
- 2014 CHUSER 2014 (2014 IEEE Colloquium on Humanities, Science & Engineering Research, 7-9 April, 2014, Penang, Malaysia (3 papers reviewed)
- 2nd International Conference on Advanced Micro and Nanocomposites for Engineering, 7-9 April, 2014, Penang, Malaysia (1 paper reviewed)
- International Civil and Infrastructure Engineering (InCIEC 2014), 28th September-1st October 2014, Kota Kinabalu, Sarawak, Malaysia
- 2014 IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA), 28th September-1st October 2014, Kota Kinabalu, Sarawak, Malaysia (1 paper reviewed)
- 2015 International Conference on Advances in Civil and Environmental Engineering (ACEE), 28 - 30 July 2015, Penang, Malaysia (1 paper reviewed)
- 2015 Third International Civil and Infrastructure Engineering Conference (InCIEC2015), 21-22 September 2015, Shah Alam, Malaysia (1 paper reviewed)
- 2016 International Conference on Innovations in Civil Engineering and Environmental Sciences, 7-8 December, 2016, Turkey

- 2016 International Conference on Green Buildings, Civil and Architecture Engineering (ICGBCAE'16) on Oct. 9-10, 2016 at Dubai (UAE)
- 2016 3rd International Conference on Disaster Management and Civil Engineering (ICDMCE'16) on Sept. 21-22, 2016 at Paris (France)

Member International Conference Committee

- 2008 International Conference on CONSTRUCTION IN DEVELOPING COUNTRIES - Advancing and Integrating Construction, Education, Research & Practices (ICCIDC-I)-2008 (4-5 August 2008)
- 2016 International Conference on Innovations in Civil Engineering and Environmental Sciences, 7-8 December, 2016, Turkey (Scientific Committee)
- 2019 First South Asia Conference on Earthquake Engineering (SACEE), 21-22 February, 2019, Karachi (https://sacee.neduet.edu.pk/committee)

Member of International Scientific Editorial Board

- Engineering Science and Technology International Research Journal (ESTIRJ) (http://www.estirj.com/advisoryboard.htm)
- Scientific Board member of Civil & Environmental Engineers (http://www.iieng.org/editorial_board.php?cid=7)

Awards and Honour

- Member Senate NED University (Year 2007-2009)
- Member Board of Studies (BoS year 2017 to date)
- Gold Medal Winner of the International Invention, Innovation & Technology Exhibition ITEX (2014)
- Appointed as jury member for the 1st International Student Competition on Tall Building Design – Creating a digital model of a quarantine centre, organized by Universiti Teknologi PETRONAS, Malaysia held in 2020
- Appointed as jury for the 2nd International Student Competition on Tall Building Design – Creating a digital model of a quarantine centre, organized by Universiti Teknologi PETRONAS, Malaysia held in 2021
- Received “Fatima Jinnah and Benazir Bhutto” Award for services in the field of engineering education on the 5th National Women's Day (Date 12-02-2022) from Sind Commision on the status of Women and given by Provincial Minister of Sindh for Women Development Ms. Shehla Raza.

Patent

- Malaysian Patent Grant No. MY-175016-A METHOD OF PRODUCING POZZOLANIC ULTRAFINE METAKAOLIN". The patent is granted by the Intellectual Property Corporation of Malaysia (MyIPO) as of 30th September, 2020

Research Publications

Journal Papers

1. S.F.A. Rafeeqi and Tehmina Ayub; “**Investigation of the versatility of theoretical prediction models for plain concrete confined with Ferrocement**”; Asian Journal of Civil Engineering (Building And Housing) Vol. 12, NO. 3 (2011) Pages 337-352
2. S.F.A. Rafeeqi, S.U. Khan, N.S. Zafar and T. Ayub; “**Implication of Unbondedness in Reinforced Concrete Beams**”, Advanced Material Research Journal, Vol. 587, (2012) Pages 36-41 (ISSN: 1662-8985 & ISBN: 978-3-03785-513-3)
3. F. A. Memon, M. F. Nuruddin, S. Khan, N. Shafiq, T. Ayub; **“Effect of Sodium Hydroxide Concentration on Fresh Properties and Compressive Strength of Self-Compacting Geopolymer Concrete”**; Journal of Engineering Science and Technology Vol. 8, No. 1 (2013) Pages 44-56 (ISSN: 1823-4690)
4. Sadaqat Ullah Khan, M.F. Nurrudin, Tehmina Ayub and N. Shafiq; **“Effects of Ferrocement in Strengthening the Serviceability Properties of Reinforced Concrete Structures**”; Advanced Material Research Journal Vols. 690-693, (2013) Pages 686-690, (ISSN: 1662-8985; doi:10.4028/www.scientific.net/AMR.690-693.686)
5. S.U. Khan, T. Ayub and S.F.A Rafeeqi; “**Prediction of Compressive Strength of Plain Concrete Confined with Ferrocement using Artificial Neural Network (ANN) and Comparison with Existing Mathematical Models**”, American Journal of Civil Engineering and Architecture, Vol. 1, No. 1, (2013) Pages 7-14 (ISSN (Online): Pages 2328-3998, DOI:10.12691/ajcea-1-1-2)

6. S.F.A Rafeeqi and Tehmina Ayub; "**Behaviour of Reinforced Concrete Beams Detailed for Shear in Compliance with Compressive Force Path Method**"; NED University Journal of Research Structural Mechanics Vol. X, No. 1, (July 2013) Pages 13-22 [ISSN 1023-3873]

7. Sadaqat Ullah Khan, S.F.A Rafeeqi and Tehmina Ayub; "**Strengthening of Reinforced Concrete Beams in Flexure Using Ferrocement**"; Published in the Iranian journal of Science and Technology; Volume 37, C, Autumn 2013, Page 353-365

8. T. Ayub, N. Shafiq and S. U. Khan; "**Durability of concrete with different mineral admixtures: A comparative review";** World Academy of Science, Engineering and Technology International Journal of Civil Science and Engineering, Vol:7 No:8, 2013, Pages 1161-1172 [ISSN(P): 2010-376X ; ISSN (E): 2010-3778]

9. Tehmina Ayub, M.F. Nurrudin, Sadaqat Ullah Khan and Fareed Ahmed Memon; "**Prediction of Compressive Strength of Plain Concrete Confined with Ferrocement using Artificial Neural** Network (ANN)"; (special issues of the International Journal of Soft Computing and Software Engineering [JSCSE], Vol. 3, No. 3, Pages 663-667, 2013 [ISSN: 2251-7545 & DOI: 10.7321/jscse.v3.n3.101]

10. T. Ayub, S. U. Khan and Fareed Ahmed Memon; "**Mechanical characteristics of harden concrete with different mineral admixtures: A review";** Published in "The Scientific World Journal", Volume 2014, Article ID 875082, 15 pages [http://dx.doi.org/10.1155/2014/875082; Scopus indexed and Impact factor: 1.73, ISSN: 1537-744X]

11. Sadaqat Ullah Khan, M. Fadhil Nuruddin, T. Ayub and N. Shafiq; **"Effects of different mineral admixtures on the properties of fresh concrete";** Published in "The Scientific World Journal"; vol. 2014, Article ID 986567, 11 pages, 2014. doi:10.1155/2014/986567 [Scopus indexed and Impact factor: 1.73, ISSN: 1537-744X]]

12. M. Fadhil Nuruddin, Sadaqat Ullah Khan, N. Shafiq and T. Ayub; **"Strength Development of High-Strength Ductile Concrete (HSDC) incorporating Metakaolin and PVA fibres";** The Scientific World Journal, vol. 2014, Article ID 387259, 11 pages, 2014. doi:10.1155/2014/387259. [Scopus indexed and Impact factor: 1.73, ISSN: 1537-744X]]

13. **S. U. Khan**, M. F. Nuruddin, N. Shafiq, and T. Ayub, "**Effect of metakaolin and PVA fibres on the workability and mechanical properties of concrete**," Advanced Materials Research Journal, Trans Tech Publications, Volume 935, pp. 188-192

14. Tehmina Ayub, Nasir Shafiq, and M.F. Nuruddin; **"Analytical prediction of the mechanical properties of high performance PVA fiber reinforced concrete"**, In International Conference on Civil, Offshore & Environmental Engineering (ICCOEE) 2014, 3-5 June, 2014, Kuala lumpur, Malaysia, Published in Applied Mechanics and Materials Vol. 567 (2014), Pages 345-350 (doi:10.4028/www.scientific.net/AMM.567.345)

15. Nasir Shafiq, Tehmina Ayub and M.F. Nuruddin; "**Predictive Stress-Strain Models for High Strength Concrete Subjected to Uniaxial Compression**, In International Conference on Civil, Offshore & Environmental Engineering (ICCOEE) 2014, 3-5 June, 2014, Kuala lumpur, Malaysia. Published in Applied Mechanics and Materials, Vol. 567 (2014) Pages 476-481 (doi:10.4028/www.scientific.net/AMM.567.476)

16. T. Ayub, N. Shafiq and M. F. Nuruddin; **Effect of Chopped Basalt fibers on the microstructure and the mechanical properties of high performance fiber reinforced concrete (HPFRC);** Published in the Advances in Materials Sciences and Engineering; Volume 2014 (2014), Article ID 587686, 14 pages, http://dx.doi.org/10.1155/2014/587686 [Scopus and ISI indexed; Impact factor: 0.897, ISSN: 1687-8434]

17. Tehmina Ayub, Nasir Shafiq, and M.F. Nuruddin; "**Stress-Strain Response of High Strength Concrete and Application of the Existing Models"**; Research Journal of Applied Sciences, Engineering and Technology; 8(10): 1174-1190, 2014

18. A.R. Khan and T. Ayub; **"Performance of RC Beams Strengthened in Predominent Shear and Flexure Loading Regions using U-Shaped CFRP Anchorages and/or Strips";** Iranian Journal of Science and Technology, IJST, Transactions of Civil Engineering, Vol. 39, No. C1, pp 41-51

19. M. Fadhil Nuruddin, Sadaqat Ullah Khan, N. Shafiq and Tehmina Ayub; "**Strength Prediction Models for PVA fiber Reinforced High-Strength Concrete**," Published in Journal of Materials in Civil Engineering (ASCE) in 2015. [http://ascelibrary.org/doi/abs/10.1061/(ASCE)MT.1943-5533.0001279]

20. Nasir Shafiq, Muhd. Fadhil Nuruddin, Sadaqat Ullah Khan and Tehmina Ayub; "**Calcined Kaolin as Cement Replacing Material and Its Use in High Strength Concrete**," Published in Construction and Building materials in 2015. [http://www.sciencedirect.com/science/article/pii/S095006181500197X]

21. Tehmina Ayub, Nasir Shafiq, and Sadaqat Ullah Khan; "**Compressive Stress-Strain Behavior of HSFRC Reinforced with Basalt Fibers**." 10.1061/(ASCE)MT.1943-5533.0001441 , 06015014"; Journal of Materials in Civil Engineering 2015

22. Sadaqat Ullah Khan and Tehmina Ayub, "**Modelling of the Pre and Post-Cracking Response of the PVA Fibre Reinforced Concrete Subjected to Direct Tension**" Construction & Building Materials Journal (2016), pp 540-557

23. Nasir Shafiq Tehmina Ayub and Sadaqat Ullah Khan; "**Investigating the performance of PVA and basalt fiber reinforced beams subjected to flexural action**"; Published in Composite Structures Journal, Volume 153, 1 October 2016, Pages 30–41

24. Sadaqat Ullah Khan, Tehmina Ayub and Nasir Shafiq, "**Comparison of Physical and Chemical Properties of Micro-Silica and Locally Produced Metakaolin and Effect on the Properties of Concrete**", Published in World Academy

of Science, Engineering and Technology International Journal of Civil and Environmental Engineering Vol:11, No:8, 2017

25. Tehmina Ayub, Sadaqat Ullah Khan and Nasir Shafiq; "**Flexural Modelling and Finite Element Analysis of FRC Beams Reinforced with PVA and Basalt Fibres and their Validation**"; Published in Advances in Civil Engineering Journal in 2018
26. Tehmina Ayub, Sadaqat Ullah Khan and Ayesha Ayub; "**Analytical Model for the Compressive Stress-Strain Behavior of PVA-FRC**", Construction and Building Materials, Volume 214, 30 July 2019, Pages 581-593
27. Sadaqat Ullah Khan and Tehmina Ayub; "**Flexure and shear behavior of Poly Ethylene Terephthalate (PET) fibres and strips in RC beams**", Published in Structure Journal, Volume 25, pp. 200-211, 2020 (***IF: 1.646)***
28. Sadaqat Ullah Khan and Tehmina Ayub; "**Physical and Chemical Characteristics of Locally Produced Metakaolin and Micro-Silica and their Effect on the Concrete Properties**" Published in Iranian Journal of Science and Technology, Transaction of Civil Engineering", 2020 (***IF: 1.465***)
29. Tehmina Ayub, Asad-ur-Rehman Khan, and Wajeeha Mahmood, "**Effect of Recycled Concrete Aggregates on Compressive Strength and Hydraulic Permeability of Concrete"**, INTERNATIONAL JOURNAL OF ENERGY and ENVIRONMENT, Volume 14, 2020 (DOI: 10.46300/91012.2020.14.6)
30. Tehmina Ayub and Sadaqat Ullah Khan; "**Flexural Investigation of a/d Ratio for High-Strength PVA-FRC Beams Based on Experimental and Finite Element Analysis**", Published in Iranian Journal of Science, Engineering and technology (Transaction of Civil Engineering) in 2021 https://doi.org/10.1007/s40996-020-00544-0 (***IF: 1.465***)
31. Tehmina Ayub, Sadaqat Ullah Khan and Wajeeha Mahmood; "**Mechanical Properties of Self-Compacting Rubberised Concrete (SCRC) Containing Polyethylene Terephthalate (PET) Fibres",** Published in the Iranian Journal of Science, Engineering and technology (Transaction of Civil Engineering) in 2021 https://doi.org/10.1007/s40996-020-00568-6 (***IF: 1.465***)
32. Wajeeha Mahmood, Asad-ur-Rehman Khan, Tehmina Ayub, "**Mechanical and Durability properties of concrete containing recycled coarse aggregates**", Published in the Iranian Journal of Science, Engineering and technology (Transaction of Civil Engineering) in 2021 https://doi.org/10.1007/s40996-021-00692-x (***IF: 1.465***)
33. Sadaqat Ullah Khan and Tehmina Ayub, "**Mechanical Properties of Hybrid Self-Compacting Fibre-Reinforced Concrete (SCC-FRC) Containing PVA and PP Fibres**", Published in the Iranian Journal of Science, Engineering and technology (Transaction of Civil Engineering) in 2021 https://doi.org/10.1007/s40996-021-00652-5 (***IF: 1.465***)
34. Tehmina Ayub, Wajeeha Mahmood and Asad-ur-Rehman Khan; "**Durability Performance of Self Compacting Concrete and Self Compacting Geopolymer Concrete Containing Recycled Concrete Aggregates: A Comparative Study"** Sustainability Journal, 2021, 13, 8621 (***IF: 3.251***)
35. Sadaqat Ullah Khan and Tehmina Ayub, "**PET Fiber–Reinforced Engineered Geopolymer and Cementitious Composites**", Published in Journal of Materials in Civil Engineering, https://doi.org/10.1061/(ASCE)MT.1943-5533.0004215 (***IF= 2.169***)
36. Wajeeha Mahmood, Asad-ur-Rehman Khan, Tehmina Ayub, "**Carbonation Resistance in Ordinary Portland Cement Concrete with and without Recycled Coarse Aggregate in Natural and Simulated Environment**", *Sustainability* **2022**, *14*(1), 437; **https://doi.org/10.3390/su14010437**
37. Muhammad Danyal Sheikh, Tariq Jameel, Tehmina Ayub, Asad-ur-Rehman Khan, Syed Muhammad Bilal and Chuanlin Hu, "**Comparative Study on LC3-50 with OPC Concrete using Raw Materials from Pakistan**" Published in Advances in Materials science and Engineering, Volume 2023
38. Wajeeha Mahmood, Tehmina Ayub, Asad-ur-Rehman Khan; "**Mechanical Properties and Corrosion Resistance of Recycled Aggregate Concrete Exposed to Accelerated and Natural Marine Environment**"; Journal of Building Engineering, 105867.
39. Syed Muhammad Fahad Hussain, Muhammad Danyal Sheikh, Tariq Jamil, Asad-ur-Rehman Khan, Tehmina Ayub and Chuanlin Hu, "**Initial search for low grade clay in Pakistan for producing LC^3 ecofriendly cement**", Low-carbon Materials and Green Construction (2023), https://doi.org/10.1007/s44242-023-00016-4
40. Ayesha Ayub, Tehmina Ayub, Tariq Jamil, and Asad-ur-Rehman Khan "**Mechanical and Durability Properties of High Strength Limestone Calcined Clay Cement (LC^3) Concrete Containing Waste Glass Powder**", Iranian Journal of Science, Engineering and technology, Transaction of Civil Engineering, **2023**
41. Sadaqat Ullah Khan, Tehmina Ayub and Bilal Ahmed, "**Self-Healing Response of Bacteria-Filled Gelatine Capsules in Mortar with Different Coatings**", Submitted to Journal of Testing and Evaluation (Under review)
42. Sadaqat Ullah Khan, Tehmina Ayub and Sadia Khan, "**Performance of Epoxy injection and Micro-organism based crack Healing Technique on Cracked Flexural Member**" Submitted to Buildings Journal (Under review)

Book chapters

1. Tehmina Ayub, Nasir Shafiq, M.F. Nuruddin and Sadaqat Ullah Khan, "**Mechanical Properties of High-Strength Concrete Reinforced with PVA and Basalt Fibres**." InCIEC 2013. Proceedings of the International Civil and

Infrastructure Engineering Conference 2013. Part VII, Springer Singapore, 2014. 567-575. [DOI 10.1007/978-981-4585-02-6_49 [ISBN-13: 978-981-4585-01-9; Print ISBN 978-981-4585-01-9; Online ISBN 978-981-4585-02-6

2. A.R. Khan and Tehmina Ayub; "**Effectiveness of U-shaped CFRP Wraps as End Anchorages in Predominant Flexure and Shear Region**"; Advances in FRP Composites in Civil Engineering, Springer Berlin Heidelberg, 2011, pp. 533-536 [DOI 10.1007/978-3-642-17487-2_115; Print ISBN 978-3-642-17486-5; Online ISBN 978-3-642-17487-2]

Conference Papers

1. T. Ayub and S.F.A. Rafeeqi; "**Performance of Reinforced Concrete Beams Containing Steel Fibres**"; 5th International Specialty Conference on "FIBRE REINFORCED MATERIALS", 28-29th August, 2008, Singapore, pp. 51-58 [ISBN: 978-981-0804-13-8]
2. A.R. Khan and T. Ayub, "**Performance of RC Beams Strengthened in Shear By Externally Bonded U-Shaped Wraps**"; SBEIDCO – 1st International Conference on Sustainable Built Environment Infrastructures in Developing Countries ENSET Oran (Algeria) - October 12-14, 2009
3. A.R. Khan and T. Ayub; "**Role of U-Shaped Anchorages on the Performance of RC Beams Strengthened By CFRP Plates**"; The Second Official International Conference of International Institute for FRP in Construction for Asia- Pacific Region; South Korea, 9-11 December, 2009
4. Aslam Faqeer Mohammad, Tehmina Ayub and N S Zafar; "**Performance Based Evaluation Of Non-Ductile Reinforced Concrete Frames With And Without Infill**"; ACEE - 2010 Conference; Bangkok, Thailand, December 2010
5. T. Ayub, N. Shafiq, M.F. Nurrudin and S.U. Khan; "**Numerical Modelling of High-Strength Ductile Concrete (HSDC) Beams";** International Conference on Civil, Offshore & Environmental Engineering (ICCOEE) 2012, 12-14 June, 2012, Kuala lumpur, Malaysia (ISBN No. 978-983-2271-77-2)
6. M. Imran, N. Shafiq, M. Ibrasim and T. Ayub; "**A Review of RC Beams Strengthened for Flexure, Shear and Torsion Loading**"; International Conference on Civil, Offshore & Environmental Engineering (ICCOEE) 2012, 12-14 June, 2012, Kuala lumpur, Malaysia (ISBN No. 978-983-2271-77-2)
7. Tehmina Ayub, Nasir Shafiq, M.F. Nuruddin; "**Mechanical Properties of High-Strength High Performance Concrete Reinforced with Basalt Fibres**"; Published in the Procedia Engineering, Volume 77, pp. 131-139, 2014 (Fourth International Symposium on Infrastructure Engineering in Developing Countries (IEDC-2013); Pakistan, 26-28 December, 2013)
8. Sadaqat Ullah Khan, Tehmina Ayub and Adnan Qadir; "**Effect of overloaded vehicles on the performance of highway bridge girder: A case study";** Published in the Procedia Engineering, Volume 77, pp. 95-105, 2014 (Fourth International Symposium on Infrastructure Engineering in Developing Countries (IEDC-2013); Pakistan, 26-28 December, 2013)
9. Sadaqat Ullah Khan, Nasir Shafiq and Tehmina Ayub; "**Microstructure Characteristics of Concrete incorporating Metakaolin and PVA fibres and influence on the compressive strength**"; 23rd Scientific Conference of the Microscopy Society Malaysia; 10-12th December, 2014; Universiti Teknologi PETRONAS, Bandar Seri Iskandar, 31750 Tronh, Perak, Malaysia [AIP Conference Proceedings 1669, 020017 (2015); doi: 10.1063/1.4919155]
10. Nasir Shafiq, Tehmina Ayub and Sadaqat Ullah Khan, "**3D Nonlinear Finite Element Analysis of HPFRC Beams Containing PVA Fibers",** International Conference on Civil, Offshore & Environmental Engineering (ICCOEE2016) under the banner of World Engineering, Science & Technology Congress (ESTCON2016), 15th - 17th August 2016 at Kuala Lumpur Convention Centre (KLCC), Malaysia, 417 -421
11. Tehmina Ayub and Sadaqat Ullah Khan, "**Finite Element Modelling of FRC Beams Containing PVA and Basalt Fibres: A Comparative Study**", 1st International Conference on Mathematical Models & Computational Techniques in Science & Engineering, February 22-24, 2017, London, UK
12. Asad-ur-Rehman Khan, Shamsoon Fareed and Tehmina Ayub; "Mechanical Properties of Concrete made up from Recycled Coarse Aggregates"; 14th ASEC conference in Jordan**,** 12-15 April 2018, Jordan
13. Tehmina Ayub, Sadaqat Ullah Khan and Wajeeha Mahmood; "**Behavioral study of RC beams designed for shear using CFP and ACI code models**"; 4th International Conference on Civil, Offshore & Environmental Engineering (ICCOEE2018) under the banner of World Engineering, Science & Technology Congress (ESTCON2018) which will be held from 13th – 14th August 2018 at Kuala Lumpur Convention Centre (KLCC), Malaysia.
14. Tehmina Ayub, and Ayesha Ayub, "**Effect of Re-Entrant Corner Joint on the Seismic Behaviour of Reinforced Concrete Building**", In the 1st South Asia Conference on Earthquake Engineering (SACEE'19), 21-22 February 2019, Karachi, Pakistan
15. Tehmina Ayub, Sadaqat Ullah Khan and Wajeeha Mahmood, **"Compressive and Flexural Behaviour of Self-Compacting Rubberised Concrete Containing PET Fibres",** The Fifth Australasia and South-East Asia Structural Engineering and Construction Conference (ASEA SEC 5), Emerging Technologies and Sustainability Principles in Structural Engineering and Construction Christchurch, New Zealand, November 30 - December 2, 2020

16. Wajeeha Mahmood, Asad-ur-Rehman Khan and Tehmina Ayub, "**Carbonation Resistance of Recycled Aggregate Concrete Exposed to Simulated and Natural Aggressive Environment**", Accepted in 16th International conference on Durability of Building Materials and Components (DBMC), October 10-13, 2023 in Beijing, China

Professional Affiliation/Membership

- American Society of Civil Engineering (M. ASCE)
- American Concrete Institute (ACI)
- Earthquake Engineering Research Institute (EERI)
- Pakistan Engineering Council
- JICA Alumni Association Pakistan

Professional Workshop

- "Modern Methods in Seismic Hazard Assessment"; jointly Sponsored by Office of Foreign Disaster Assistance (OFDA/ USAID) and U.S. Geological Survey (USGS) with Coordination by National Society for Earthquake Technology (NSET)- Nepal (NSET); 7- 12 June, 2009; Kathmandu, Nepal

- "Research Planning Workshop on improving seismic behavior of non-ductile reinforced concrete buildings with masonry infill walls"; In collaboration with Geohazard International (GHI) and National Society for Earthquake Technology (NSET); 12th-14th july, 2010, Kathmandu, Nepal

International Trainings

- **Building Codes and Control Systems** (Building Safety and Social/ Environmental Consideration) by Japan International Cooperation Agency (JICA) at Tokyo, Japan -15th May to 28th June 2007

- Rapid Assessment of Existing Buildings- videoconference training conducted at NED University of Engg. & Tech., Karachi, Pakistan; in March, 2008 by Dr. Rogers, Project Manager of Geohazards International

- Rapid Assessment of Existing Buildings, held at NED University of Engg. & Tech., Karachi, Pakistan; July, 2007 by Mr. Mar of Tipping Mar and Associates, Dr. Rogers, Project Manager and Mr. Tobins, Chief Operating Officer of Geohazards International. For further details
  link: http://www7.nationalacademies.org/dsc/GHI_NED_Report_2007.pdf

- Latest Developments in Earthquake Engineering by Centre of Continuing Education CCEE of NED University of Engg. & Tech, Karachi, Pakistan- 19th to 21st March, 2007

- Random thoughts in Engineering, Earthquake: where is the fault? and University Industry Interaction– Series of lecture by Dr. Tanvir Wasti (Middle East University, Turkey); organized by Department of Civil Engineering (1st, 2nd and 21st March, 2007)

- Seismic Hazards Assessments – A workshop by Prof. Dr. Roger Bilham (University of Colorado, USA) , Dr. Susan Elizabeth Hough (Seismologist, United States Geological Survey) and Prof. S.H. Lodi (NED University of Engineering and Technology, Karachi); organized by Department of Civil Engineering (23rd -24th January, 2007)

- Sokkia Technical Training on GPS Radian, Total station-2030R3, Digital Level SDL30,12D Roading Software, Civil Engg. Dept. of NED University of Engg. & Tech., 11-16th December, 2006

- Seismic Analysis and Design by CCEE of NED University of Engg. & Tech, Karachi, Pakistan- 02nd to 06th August, 2006

Professional Seminars

- Performance-Based Earthquake Engineering and Applications to the Evaluation and Retrofit of Existing Buildings- organized by Pakistan chapter of ACI on 21st July 2007 conducted at NED University of Engg. & Tech., Karachi, Pakistan

- Design of buildings and bridges for earthquake affected areas in Pakistan- An international workshop and seminar organized by ASCE and Institution of Engineers Pakistan in 2006

- Seismic Hazards with special References to Karachi, Pakistan- One day seminar by Prof. Dr. Roger Bilham (University of Colorado, USA) and Dr. Susan Elizabeth Hough (Seismologist, United States Geological Survey); Jan 27, 2007

- Politics of new Humanitarian Aid & Earthquake Disaster in Pakistan – A Seminar by Dr. Naeem Khalid; conducted at NED University of Engg. & Tech., Karachi, Pakistan; (20th Dec. 2006)

- Restoration and reconstruction of affected areas by Pakistan Earthquake on October 8th, 2005 held by NED University of Engg. & Tech., Karachi, Pakistan in collaboration with Japan Society of Civil Engineers (JSCE), Architectural Institute of Japan with assistance Of Japan Institute Cooperation Agency (JICA); (8th May, 2006)

- Design of buildings and bridges for earthquake affected areas in Pakistan"- An international workshop and seminar organized by ASCE and Institution of Engineers Pakistan in March, 11th, 2006

- Seminar on Post Disaster Mitigation for Local Engineering Community conducted at NED University of Engg. & Tech., Karachi, Pakistan. Main speakers were Dr. Tanvir Wasti and Dr. Soofia Ozkan of Middle East Technical University and Prof. S.H. Lodi of NED University (30th Nov. 2005)