

CURRICULUM VITAE

Dr. Alam Zeb
Associate Professor



Born 1st May 1979
Nationality Pakistani
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Education

- 2010** PhD (Biochemistry) – *With Distinction*
Institute of Biochemistry
Graz University of Technology, Graz, Austria
(www.biochemistry.tugraz.at)
- 2003** MPhil (Biochemistry)
Institute of Chemical Sciences, University of Peshawar, Pakistan
- 2001** MSc (Biochemistry)
Department of Chemistry, University of Peshawar, Pakistan

Professional Profile

- Associate Professor, University of Malakand, Chakdara (12th July 2016-Present)
- Assistant Professor, University of Malakand, Chakdara (30 June 2011 to 11 July 2016)
- Lecturer, University of Malakand, Chakdara (20 August 2003 – 29 June 2011).
- Teaching Assistant, Institute of Biochemistry, Graz University of Technology, Austria (03/2009-02/2010)

Awards, Fellowships & Distinctions

- Productive Scientist of Pakistan (2009-)
- Research Productivity Awards (2011, 2012, 2014, 2015, 2016)
- PhD Scholarship (2008-10) by Higher Education Commission, Government of Pakistan to study at Technical University of Graz, Graz, Austria.
- Graduate Scholarship (2003) by Higher Education Commission, Government of Pakistan
- HEC Approved PhD Supervisor (2011-)

Instrumental Skills

Advance level skills of Lipids and oxidized lipids, Carotenoids, Plant Phenolics, Triacylglycerols, Phospholipids and Phytochemicals analysis by HPLC/DAD/ELSD or HPLC-MS (Agilent Technologies, Germany), HPTLC (CAMAG, Switzerland), GC, or GC-MS & UV Spectroscopy (Shimadzu, Japan); Elemental analysis by Atomic Adsorption Spectrometer (Perkin Elmer, USA) & Flame Photometer (Japan) and other related Chemical/Instrumental techniques.

List of Publications

Journal Articles (2010-2017)

1. **Alam Zeb**, L. Rahman (2017). Characterization, phenolic composition and biological evaluation of *Eruca sativa* seed oil. *Pakistan Journal of Pharmaceutical Sciences* (In Press).
2. A. A. Khan, **Alam Zeb**, T.H. Sherazi (2017). Thermally oxidized olive oil produce biochemical, physiological effects and fatty liver in rats. *Chiang Mai Journal of Science* (In Press).
3. **Alam Zeb**, B. Mohammad, F. Ullah (2017). Characterization of Sesame (*Sesamum indicum* L) seed oil from Pakistan for phenolic composition, quality characteristics and potential beneficial properties. *Journal of Food Measurement & Characterization*. DOI: 10.1007/s11694-017-9514-5.
4. **Alam Zeb** (2017). A simple, sensitive HPLC-DAD method for the simultaneous determination of carotenoids, chlorophylls & α -tocopherol composition of leafy vegetables. *Journal of Food Measurement & Characterization*. DOI: 10.1007/s11694-017-9472-y.
5. **Alam Zeb**, F. Ullah (2017). Reversed phase HPLC-DAD profiling of carotenoids, chlorophylls and phenolic compounds in *Adiantum capillus-veneris* leaves. *Frontiers in Chemistry*. 5: 29.
6. **Alam Zeb**, P. Nisar (2017). Effects of high temperature frying of Spinach leaves in sunflower oil on Carotenoids, Chlorophylls and tocopherol composition. *Frontiers in Chemistry*. 5: 19.
7. **Alam Zeb**, N. Khadim, W. Ali (2017). Changes in the polyphenolic profile, carotenoids and antioxidant potential of Apricot (*Prunus armeniaca* L.) leaves during maturation. *Agriculture*. 7(2): 9.

8. **Alam Zeb**, S. Rahman (2017). Protective effects of dietary glycine & glutamic acid toward the toxic effects of oxidized mustard oil in rabbits. *Food and Function*. 8 (1): 429-436.
9. **Alam Zeb**, I. Uddin (2017). The co-administration of un-oxidized and oxidized Desi ghee ameliorates the toxic effects of thermally oxidized ghee in rabbits. *Journal of Nutrition and Metabolism*. 2017, Article ID: 4078360.
10. **Alam Zeb** (2016). Phenolic profile and antioxidant activity of Melon (*Cocomis melo* L.) seeds from Pakistan. *Foods*. 5(4): 67.
11. **Alam Zeb**, I. Haq (2016). The protective role of tomato powder in the toxicity, fatty infiltration and necrosis induced by oxidized tallow in rabbits. *Journal of Food Biochemistry*. 40(4): 428-435.
12. **Alam Zeb**, F. Ullah (2016). A simple spectrophotometric method for the determination of thiobarbituric acid reactive substances (TBARS) in fried fast foods. *Journal of Analytical Methods in Chemistry* 2016: Article ID 9412767, 1-5.
13. **Alam Zeb** (2015). Phenolic profile and antioxidant potential of wild Watercress (*Nasturtium officinale* L.). *SpringerPlus*. 4: 714.
14. **Alam Zeb** (2015). A reversed phase HPLC-DAD method for the determination of phenolic compounds in plant leaves. *Analytical Methods*. 7:7753-7757.
15. **Alam Zeb**, S. Ullah (2015). Sea buckthorn seed oil protects from the oxidative stress induced by thermally oxidized lipids. *Food Chemistry*. 186: 6-12.
16. **Alam Zeb** (2015). Chemistry and liquid chromatographic methods for analyses of triacylglycerol primary oxidation products. *Free Radical Research*. 49 (5): 549-564.
17. **Alam Zeb**, S. Hussain (2014). Sea buckthorn seed powder provides protection in the oxidative stress produced by thermally oxidized sunflower oil in rabbits. *Journal of Food Biochemistry*. 38 (5): 498-508.
18. **Alam Zeb** & M. Murkovic (2013). Pro-oxidant effects of β -carotene during thermal oxidation of edible oils. *Journal of the American Oil Chemists Society*. 90 (6): 881-889.
19. **Alam Zeb** & M. Murkovic (2013). Determination of thermal oxidation and oxidation products of β -carotene in corn oil triacylglycerols. *Food Research International*. 50 (2): 534-544.

20. I. Slumpaite, M. Murkovic, **Alam Zeb**, P. R. Venskutonis (2013). Antioxidant properties and phenolic composition of swallow-wort (*Vincetoxicum lutea* L.) leaves. *Industrial Crops and Products*. 45(2): 74-82.
21. **Alam Zeb**, & A. Mehmood (2012). Effects of oxidized vanaspati ghee on the serum lipids profile and radical scavenging activity of the in vitro lipids of liver, brain and muscles. *Turkish Journal of Biochemistry*. 37 (4): 417-423.
22. **Alam Zeb**, & W. Rehman (2012). Effects of oxidized tallow on the rabbit serum lipids and antioxidant activity of the lipids. *Toxicological Research*. 28 (3): 151-157.
23. **Alam Zeb** (2012). Triacylglycerols composition, oxidation and oxidation compounds in camellia oil using liquid chromatography-mass spectrometry. *Chemistry and Physics of Lipids*. 165 (5): 608-614.
24. **Alam Zeb** (2012). Oxidation and formation of oxidation products of beta-carotene at boiling temperature. *Chemistry and Physics of Lipids*. 165 (3): 277-281.
25. **Alam Zeb** (2011). Effects of β -carotene on the thermal oxidation of fatty acids. *African Journal of Biotechnology*. 10 (68): 15346-15352.
26. **Alam Zeb** & M. Murkovic (2011). Carotenoids and triacylglycerols interactions during thermal oxidation of refined olive oil. *Food Chemistry*. 127 (4): 1584-1593.
27. **Alam Zeb** & M. Murkovic (2010). Characterization of the effects of beta-carotene on the thermal oxidation of triacylglycerols using HPLC-ESI-MS. *European Journal of Lipid Science & Technology*. 112 (11): 1218-1228.
28. **Alam Zeb** & M. Murkovic (2010). Analysis of triacylglycerols in refined edible oils by isocratic HPLC-ESI-MS. *European Journal of Lipid Science & Technology*. 112 (8): 844-851.
29. **Alam Zeb** & M. Murkovic (2010). Thin-layer chromatographic analysis of carotenoids in plant and animal samples. *Journal of Planar Chromatography*. 23 (2): 94-103.
30. **Alam Zeb** & M. Murkovic (2010). High-performance thin-layer chromatographic method for monitoring the thermal degradation of beta-carotene in sunflower oil. *Journal of Planar Chromatography*. 23 (1): 35-39.

Other Publications (2003-2009)

31. **Alam Zeb** & I Malook (2009). *African Journal of Biotechnology*. 8(8): 1625-1629.

32. Alam Zeb & M Ali (2008). *Journal of the Chemical Society of Pakistan* 30 (5): 750-755.
33. Alam Zeb S. Khan, I. Khan & M. Imran (2008). *Journal of the Chemical Society of Pakistan* 30 (5): 790-794.
34. Alam Zeb A. Rasool & S. Nasreen (2008). *Journal of the Chinese Medical Association* 71(2): 62-65.
35. I. Khan, M. Shuaib, Z. Ali & Alam Zeb (2007). *Journal of the Chemical Society of Pakistan* 29 (4): 301-306.
36. I. Khan, I. Ali & Alam Zeb (2007). *Journal of the Chemical Society of Pakistan* 29 (3): 236-238
37. I. Khan & Alam Zeb (2007). *Journal of Zhejiang University SCIENCE B.* 8(8): 555-559.
38. Alam Zeb, Z. Ali, T. Ahmad, & A. Abdumanon (2006). *Pakistan Journal of Biological Sciences* 9 (9): 1823-1828.
39. Alam Zeb, A. Rasool & S. Nasreen (2006). *Asian Pacific Journal of Cancer Prevention* 7 (3): 483-484.
40. Alam Zeb (2006). *Asian Pacific Journal of Cancer Prevention* 7 (1): 32-35.
41. Alam Zeb & G. Lutfullah. (2005). *Journal of the Chemical Society of Pakistan* 27 (2): 205-212
42. F. Khan, T. Ahmad, S. Atta, & Alam Zeb (2004). *Journal of the Chinese Chemical Society* 51 (5): 991-995.
43. Alam Zeb & T. Ahmad (2004). *Pakistan Journal of Biological Sciences* 7 (6): 943-946.
44. Alam Zeb & S. Mehmood (2004). *Pakistan Journal of Nutrition* 3 (3): 199-204.
45. Alam Zeb (2004). *Journal of Biological Sciences* 4(5): 687-693.
46. Alam Zeb (2004). *Pakistan Journal of Nutrition* 3 (2): 99-106.
47. G. Lutfullah, Alam Zeb, T. Ahmad, S. Atta & F. Khan (2003). *Journal of the Chemical Society of Pakistan* 25 (4): 269-275.

Book

48. Alam Zeb (2014). *Sea buckthorn: A Functional Food*, LAP Lambert Academic Publishing, Germany, ISBN: 978-3-8454-0946-7.

Book Chapters

49. Alam Zeb (2017). Chemistry of lipid oxidation in edible oils. In: *Lipid Peroxidation, Inhibition, Effects and Mechanism*. A. Catala (Ed), Nova Science Publishers Inc, USA, pp: 309-320, ISBN: 978-1-53610-506-3.
50. Alam Zeb (2016). Coriander (*Coriandrum sativum*) oil, In: *Essential Oils in Food Preservation, Flavour and Safety*. VR. Preedy (Ed), Academic Press, UK, pp: 359-364, ISBN: 978-0-1241-6641-7.
51. Alam Zeb (2014). Antioxidant and anti-carcinogenic activities of Sea buckthorn (*Hippophae L.*), In: *Sea Buckthorn- A Multipurpose Wonder Plant: Emerging Trends in Research and Technologies*. V. Singh (Ed), Volume IV, Daya Publishing House, N. Delhi, pp: 361-369, ISBN: 978-9-3513-0106-6.
52. Alam Zeb (2012). Thin-layer chromatographic analysis of Vitamin A related carotenoids, In: *Vitamin A and Carotenoids: Chemistry, Analysis, Functions and Effects*. VR. Preedy (Eds), Royal Society of Chemistry, London, England, pp: 303-315, ISBN: 978-1-8497-3368-7.
53. Alam Zeb (2012). Thermal degradation of β -carotene in food oils, In: *Vitamin A and Carotenoids: Chemistry, Analysis, Functions and Effects*. VR. Preedy (Ed), Royal Society of Chemistry, London, England, pp: 129-141, ISBN: 978-1-8497-3368-7.
54. Alam Zeb (2011). Sea buckthorn (*Hippophae rhamnoides L. ssp. turkistanica*) seed, chemical and physico-chemical properties. In: *Nuts and Seed in Health and Diseases Prevention*. VR. Preedy et al. (Eds), Elsevier Inc. USA, pp: 1003-1010, ISBN: 978-0-1237-5688-6.
55. Alam Zeb and M. Murkovic (2011). Olive (*Olea europaea L.*) seeds, from chemistry to health benefits. In: *Nuts and Seed in Health and Diseases Prevention*. VR. Preedy et al. (Eds), Elsevier Inc. USA, pp: 847-853, ISBN: 978-0-1237-5688-6.
56. Alam Zeb & M. Murkovic (2010). β -Carotene induced oxidation of high oleic triacylglycerols model system. In: *Wertbestimmende Inhaltsstoffe in Lebensmitteln (Value Determining Constituents in Foods)*. M. Murkovic (Ed), Austrian Chemical Society, Vienna, Austria, pp: 210-214, ISBN: 978-3-9005-5467-5.
57. Alam Zeb & M. Murkovic (2010). Thermal stability of triacylglycerols in edible oils and triolein model system. In: *Wertbestimmende Inhaltsstoffe in Lebensmitteln (Value Determining Constituents in Foods)*. M. Murkovic (Ed), Austrian Chemical Society, Vienna, Austria, pp: 18-22, ISBN: 978-3-9005-5467-5.

58. Alam Zeb & I. Khan (2009). Pharmacological applications of Sea buckthorn (Hippophae), In: *Advances in Phytotherapy Research*. M. Eddouks (Ed) Research Signpost, N. Delhi, pp: 1-16, ISBN: 978-8-1308-0223-7.
59. Alam Zeb & I. Khan (2008). Composition and medicinal properties of Sea buckthorn juice, In: *Sea Buckthorn- A Multipurpose Wonder Plant. Vol. III - Advances in Research & Development*. Singh, V (Ed.), Daya Publishing House, N. Delhi, pp: 205-214, ISBN: 81-7035-520-5.

Proceedings Papers

60. Alam Zeb & M. Murkovic (2011). Mass spectrometric characterization of triglyceride oxidation. *Proceedings of the 2nd MS Food Day 2011*. October 19-21, University of Trieste, Italy, pp: 62-63.

Organizational Experience

- ❑ MPhil/PhD coordinator, Department of Biotechnology, University of Malakand, 2011-2013.
- ❑ Member Board of Study, Department of Biotechnology, University of Malakand, 2013-.
- ❑ Member Board of Study, Deptt. Biochemistry, Hazara University, Mansehra, 2016-.
- ❑ Member Board of Faculty, Faculty of Biological Sciences, University of Malakand, 2013-.
- ❑ Member of Departmental Tenure Review Committee (DTRC), Department of Biotechnology, University of Malakand, 2016-

Professional Societies Membership

- ❑ European Federation for the Science & Technology of Lipids (Euro Fed Lipid, 2009-2011)
- ❑ European Federation of Food Science and Technology (EFFoST, 2009-2011)
- ❑ American Oil Chemists Society (AOCS, 2008-2011)
- ❑ Korean Society for Food Science & Technology (KoSFoST, 2008-)
- ❑ Society for Free Radical Research International (SFRI, 2008-)
- ❑ International Carotenoids Society (ICS, 2005-2015)
- ❑ South African Association of Mass Spectrometry (SAAMS, 2011-)
- ❑ Asian Pacific Organization for Cancer Prevention (APOCP, 2006-)
- ❑ Chemical Society of Pakistan (Life Member, 2015-)
- ❑ Pakistan Society for Biochemistry & Molecular Biology (Life Member, 2016-)

Journal's Editorial Referee

- ❑ Free Radical Research (*SFRR, UK*)
- ❑ Rapid Communications in Mass Spectrometry (*Wiley, USA*)
- ❑ Journal of the American Oil Chemist's Society (*AOCS, USA*)
- ❑ Journal of Agriculture and Food Chemistry (*ACS, USA*)
- ❑ Analytical Methods (*RSC, UK*)
- ❑ RSC Advances (*RSC, UK*)
- ❑ Food Chemistry (*Elsevier, UK*)
- ❑ Journal of Planar Chromatography (*Akadémiai Kiadó, Hungary*)
- ❑ Journal of Separation Science (*Wiley, Germany*)
- ❑ Journal of Science of Food and Agriculture (*Wiley, Germany*)
- ❑ Journal of Food Science (*IFT, UK*)
- ❑ Food Research International (*Elsevier, Canada*)
- ❑ International Journal of Biometeorology (*Springer, USA*)
- ❑ Journal of Food Measurement and Characterization (*Springer, USA*)
- ❑ International Journal of Food Properties (*Springer, UK*)
- ❑ Journal of the Chemical Society of Pakistan (*CSP, Pak*)

Journal's Editorial Role

- ❑ Review Editor Frontiers in Chemistry (section Food Chemistry)
- ❑ Review Editor Frontiers in Nutrition (section Food Chemistry)

Research Theses Supervised (Degree Awarded)

❑ **PhD Dissertation**

- 1) In-vivo effects and metabolic interactions of oxidized lipids with antioxidants (2011-16)

❑ **MPhil Theses**

- 1) In-vivo effects of ellagic acid against the toxicity of thermally oxidized lipids (2015-2017).
- 2) Effects of microwave heating on carotenoids, phenolic compounds and antioxidant potential of *Cichorium intybus* L. (2015-2017).
- 3) Effects of spinach leaves extract on the stability of sunflower oil (2015-2017).
- 4) Interaction of lipid peroxidation and antioxidants during frying of Chapli kebab (2013-2016).
- 5) Characterization of lipid oxidation and antioxidants during deep frying of fritter (2013-2016).
- 6) Correlation of diabetes and lipid peroxidation of local population of Batkhela district Malakand (2014-2016).
- 7) Determination of obesity and risk factors in women population of different ages of Musa-Khel District Swat (2014-2016).
- 8) Phytochemical investigation and antioxidant potential of apricot (*Prunus armeniaca* L.) leaves (2014-2016).

- 9) Effects of glycine & glutamic acid in oxidative stress induced by oxidized lipids (2012-2014).
- 10) Characterization and biological effects of oxidized and un-oxidized pumpkin seed oil in rabbits (2012-2014).
- 11) Correlation of sea buckthorn seed oil and oxidized vegetable ghee; effects on the lipid metabolism in rabbits (2011-2013).
- 12) Influence of sea buckthorn seed powder on the lipid metabolism, histopathological and hematological effects of oxidized sunflower oil in rabbits (2011-2013).
- 13) Effects of metabolic extract of *Monthea buxifolia* on normal rabbits (2011-2013).
- 14) Characterization and biological effects of in-vivo lipids of *Uromastix hardwickii* (2011-2013).

- Supervised 18 BS (*Hons*) Biotechnology Theses at UOM.
- Co-supervise 2 MS Theses in Food Chemistry in TUG Austria.

Research Projects

Ongoing Projects

- Characterization, Isolation and production of natural antioxidants from medicinal plants (*Rs. 7.6 million*, Funded by *Higher Education Commission, Pakistan, 2014-17*) as Co-PI.

Completed Projects

- Biochemical effects, metabolism and recovery of oxidized lipids from the daily diet (*Rs. 8.1 million*, Funded by *Higher Education Commission Pakistan 2014-16*) as solo PI.
- Effects of oxidized tallow on the lipids properties and metabolism in animals (*Rs. 0.074 million*, Funded by *University of Malakand, Pakistan, 2011*) as PI.
- Effects of Sea buckthorn oil against the toxicity of thermally oxidized vegetable ghee in rabbits (*Rs. 0.074 million*, Funded by *University of Malakand, Pakistan, 2011*) as PI.

Conferences Presentations & Talks

Oral Presentations

1. 7th Chemistry Conference “Chemistry in Engineering & Life Sciences”, 24-26 November 2015, PINSTECH Islamabad, Pakistan.

2. 11th Euro Fed Lipid Congress “Oils, Fats and Lipids: New Strategies for High Quality Future”, 27-30 September 2013, Antalya, Turkey.
3. 8th Euro Fed Lipid Congress “Oils, Fats and Lipids: Health & Nutrition, Chemistry and Energy” 21-24 November 2010, Munich, Germany.
4. 4th Doctoral Day. NAWI Graz Doctoral School of Molecular Biosciences and Biotechnology, 9th July 2010, Graz, Austria.
5. Österreichische Lebensmittel Chemikertage, 19-21 May 2010, Schloss Seggau, Austria.
6. Young Investigators' Seminar on Analytical Chemistry, 29 June-2 July 2009, Graz Austria.
7. TEMPUS Joint European Project ‘New Bologna Oriented Doctoral Study Programme in BA’, 26-30 January 2009, Graz Austria.
8. 1st European Food Congress, 4-9 November 2008, Ljubljana, Slovenia.

Poster Presentations

1. Recent Advances & Challenges in Molecular Biology, Biochemistry & Biotechnology, 25-27 August 2016, Abbottabad, Pakistan.
2. Österreichische Lebensmittel Chemikertage, 19-21 May 2010, Schloss Seggau, Austria.
3. 7th Euro Fed Lipid Congress “Lipids, Fats and Oils: From Knowledge to application, 18-21 October 2009, Graz Austria.
4. 1st Styrian Conference on Lipid Mass Spectrometry, 21-22 October 2009, Graz Austria.
5. 3rd International IUPAC Symposium on Trace Elements in Foods, 1-3 April 2009, Rome Italy.
6. 9th International Symposium on Instrumental analysis, 29 June-2 July 2008, Pecs Hungary.
7. Österreichische Lebensmittel Chemikertage, 28-30 May 2008, Eisenstadt, Austria.
8. 7th International Conference, Trends in Biochemistry and Molecular Biology, 2-5 April 2003, IBB University of Punjab, Lahore, Pakistan.

Abstracts

1. International Conference on New Knowledge on Chemical Reactions During Food Processing and Storage. 14-16 November 2012, Prague, Czech Republic.
2. Österreichische Lebensmittel Chemikertage 2012, 25-27 April 2012, Linz, Austria.
3. 7th Euro Fed Lipid Congress, Lipids, Fats and Oils, 18-21 October 2009, Graz Austria.

Establishment of Biochemistry Laboratory

With kind financial assistance of Higher Education Commission of Pakistan under National Research Program for Universities Project: No 2344 and University of Malakand, a biochemistry laboratory was established with functional equipment's such as Agilent 1260 HPLC-DAD system, Semi-automatic biochemistry analyzer, PharmaSpec UV visible spectrophotometer, Centrifuge, Heidolph distillation system and several required apparatus and chemicals.