Resume

Shazia Khan, *Ph.D.*
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Key Skills:

- Expertise in natural products isolation (purification of targeted compounds), solvent/liquid-liquid extraction and associated tasks, with outstanding handling of trace amount of chemically unstable compounds.
- Strong ability in discovery and implementation of new methods and schemes for the fractionation and isolation of compounds.
- Possess strong structure elucidation skills using sophisticated modern spectroscopic methods including UV, IR, MS (EI, CI, HR, FD, FAB +ve & -ve, ESI etc.), 1H- and 13C-NMR (BB and DEPT), 2D-NMR experiments (J-Resolved, COSY-45o, NOESY, HMQC and HMBC etc.).
- Extensive hands-on experience in advanced chromatographic techniques including vacuum liquid chromatography, column chromatography, TLC, HPLC, LC-MS, GC-MS, flash chromatography, etc.
- Expert in operating, recording and interpretation of UV (Hitachi-U-3200, Secomam Anthelei Junior spectrophotometer), IR (Bruker Vector 22 spectrophotometer), Optical rotation (JASCO DIP-360 digital polarimeter) and 1H-NMR (Bruker spectrophotometers, AC-300 MHz, AVANCE 400, and AVANCE 500 MHz) Spectrophotometers data.
- Experience of organic synthesis, semi-synthesis of Natural Products and its derivatization,, successfully handled lithiation and other chemical reactions.
- Experience in antioxidant and tyrosinase inhibition chemical based bioassays.
- Experience of manuscript writing, proof reading, teaching and supervising junior researcher.
- Excellent verbal and written communication skills in English.
- Effective knowledge of computer software (Word, Excel, PowerPoint, Chemdraw, Dictionary of Natural Products etc.) familiarity with computerized environment.
- Ability to work independently and in a team environment with minimal supervision.

Teaching/Academic Experiences & Duties:

- 12thAugust 2009 - Present, Assistant Professor, Department of Chemical Engineering, COMSATS Institute of Information and Technology, CIIT Lahore, Pakistan.
- Teaching General Chemistry to Undergraduates, 2009.
- General Chemistry Laboratory In-charge, 2009.
- Member Departmental Academic Review Committee, 2010.
- Member Departmental Financial Assistance Committee, 2010.
- Member Sports Committee B, 2010.
- Evaluation Member for Internship Poster Presentations of Chemical Engineering Students, 2009.
- Supporting Faculty Physical Chemistry Lab, 2009.
- Supporting Faculty Chemistry-I Lab, 2010.

Research Experience/Interest:

- 12th Aug. 2009 – Present, **Bioassay Guided Natural Product Isolation, Structure Elucidation and Synthesis lead to the Drug Development**:

  Historically, natural products have formed the basis of medicines and, even now many of the compounds that are pharmaceutically and medicinally important are derived from natural sources. “Natural products have a key role as biologically active agents” is the main hypothesis of my current

research work. In this definition the medicinal agent may be a natural product isolated straight from the producing organism, a natural product that has undergone a minor chemical modification (semi-synthetic), or a compound that was totally synthesized based on a particular natural product possessing biological activity.

- Ph.D. Candidate, 1/2004-3/2009.
- Junior Research Fellow, 4/2000-12/2003, H.E.J Research Institute of Chemistry, University of Karachi, Pakistan. Worked on the isolation and structure elucidation of biologically active natural products from different plant sources which resulted in the isolation of several new and known constituents belong to the class triterpenoid, flavonoids, isoflavonoids, steroids, aromatic and arbutin derivatives, mono-di and tri glycerides, fatty acids and hydrocarbons. The structures of the new compounds have been elucidated through modern spectroscopic methods including UV, IR, MS, 1H- and 13C-NMR (BB and DEPT), 2D-NMR experiments (J-Resolved, COSY-45o, NOESY, HMQC and HMBC) and chemical transformations.

Academic Qualifications:

- Ph.D (Chemistry) H.E.J Research Institute of Chemistry, University of Karachi, Pakistan, 2009.
  Thesis Title: Studies on the Chemical Constituents of the Fruits of *Madhuca Indica (Mahua).*
- M.Sc. (Organic Chemistry) First Division, University of Karachi, Pakistan, 1998.
- B.Sc. (Chemistry, Zoology, Botany) First Division, University of Karachi, Pakistan, 1995.

Other Courses/Test:

- Cleared GRE Chemistry test, held on 12th April 2008.

Certificate Courses:

- "**Organic Synthesis Practical Course**", *Conducted by Prof. Ichiya Ninomiya* Osaka University, Osaka, Japan. (August–September) 2004**,** in HEJ. Worked on different synthetic schemes for Natural Products Synthesis under the supervision of Japanese visiting Prof. Y. Tsuda and Prof. I. Ninomiya.
- "An Introduction to **X-Ray Crystallography**", *Conducted by Dr. Masood Parvez*, Assistant Professor, University of Calgary, Calgary, Canada. (May–June) 2001 in HEJ. It covered the Methodology of Crystallization and Symmetry Elements and Structure Elucidation via Data.
- **Advance Courses for Ph.D**, H.E.J Research Institute of Chemistry, University of Karachi, Pakistan, 2000, First Division.
- "**Practical Laboratory Techniques**" from HEJ Research Institute of Chemistry, 2000. Topics included Scientific Literature Search from Databases, Recording of Experimental Details, Organization of Laboratory Materials, Operation and Use of Analytical Equipments, Separation and Purification Techniques.

Honors, Awards & Membership:

- **HEC Scholar** (2004-2008) under "the Indigenous Ph.D. Fellowship Program" of the Higher Education Commission of Pakistan.
- **Life Time Member**, Pakistan Chemical Society.
- HEC **Approved PhD Supervisor**

Projects:

- Extraction of various parts and In-vitro Total Antioxidant Capacity Profiles of Folk Medicinal Herbs/Plants Extract using Different Analytical Methods. (0.2 million, COMSATS Lahore)

Books and Book Chapters:

- General Chemistry CHM202 Laboratory Manual COMSATS Lahore 2009.

List of International Publications:

- Tyrosinase Inhibitors from the Fruits of Madhuca latifolia by **Shazia Khan**, Mahmud Tareq Hassan Khan and M. Nadeem Kardar, Journal of Enzyme Inhibition and Medicinal Chemistry, 2010 (Submitted Ms. Ref. No.: GENZ-2010-0165)
- Arbutin Derivatives from the Seeds of Madhuca latifolia by **Shazia Khan**, M. Nadeem Kardar and Bina S. Siddiqui, Natural Products Communications, 2010 (Submitted MS No. P742212).

- Chemical Constituents of Cordia latifolia and their Nematicidal Activity by Sabira Begum, Sobiya Perwaiz, Bina S. Siddiqui, **Shazia Khan**, Shahina Fayyaz, and Musarrat Ramzan, Helvetica Chimica Acta, 2010 (Submitted).
- A New Isoflavone from the fruits of Madhuca latifolia by Bina S. Siddiqui, **Shazia Khan**, and M. Nadeem Kardar. Nat. Prod. Res., Vol. 24(1), 2010, 76 - 80.
- Chemical Constituents of Centella Asiatica by , Bina S. Siddiqui,Huma Aslam, S. Tariq Ali, **Shazia Khan**, and Sabira Begum, J. Asian Nat. Prod. Res., Vol. 9(4), 2007, 407-414.
- A new triterpenoid, madhunolic acid, from the seeds of Madhuca latifolia by Bina S. Siddiqui, **Shazia Khan**, M. Nadeem Kardar and Sobiya Perwaiz. J. Asian Nat. Prod. Res., Vol. 9(3), 2007, 293-297.
- Two new triterpenoids from Lawsonia inermis, Bina S. Siddiqui, M. Nadeem Kardar and **Shazia Khan**, Zeitschrift fur Naturforschung B. Vol. 60b, 2005, 37–40.
- Chemical Constituents from the fruits of Madhuca latifolia. by Bina S. Siddiqui, **Shazia Khan**, M. Nadeem Kardar and Huma Aslam, Helvetica Chimica Acta Vol. 87(5), 2004, 1194-1201.
- Two New and a known compound from lawsonia inermis, Bina S. Siddiqui, M. Nadeem Kardar, S. Tariq Ali and **Shazia Khan**, Helvetica Chimica Acta, Vol. 86(6), 2003, 2164-2169.

Conferences and Workshops:

- 11th International Symposium on Natural Product Chemistry, October 29 – November 01, 2008, Karachi, Pakistan.
- Workshop on Modern NMR Spectroscopy and its Application in Research, Feb 17-18, 2004, Karachi, Pakistan.
- 9th International Symposium on Natural Product Chemistry, January 10-13, 2004, Karachi, Pakistan.
- 3rd International and 13th National Chemistry Conference, Dec 28-31, 2002, Karachi, Pakistan.
- 7th Euroasia Conference on chemical sciences, March 09-12, 2002, Karachi Pakistan.
- 2nd International and 12th National Chemistry conference, Feb. 08-12, 2002, Jamshoro (Sind), Pakistan.