

DR. ANJUM AYUB

Contact Information

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Awards/Honors/Project

- Awarded SRGP/HEC: No. 21-1021/SRGP/R&D/HEC/2016 (0.3935 Million) as PI.
- Passed International (ETS) GRE Subjective in 2009.
- Awarded HEC Indigenous 5000 Scholarship Batch IV (2007).
- Qualified GAT General (NTS) in 2007.
- Gold Medal for Securing 1st Class 1st Position in M.Sc. 2005.

Membership

- Chemical Society of Pakistan

Academic Qualification

Ph. D (Chemistry)	2014	HEJ Research Institute of Chemistry, University of Karachi
M.Sc (Chemistry)	2005	Federal Urdu University of Arts, Science and Technology, Karachi

Teaching Experience

- **Assistant Professor:** Department of Chemistry, NED University of Engineering and Technology. (March 2019 to date).
- **Co-operative Teacher:** Department of Chemistry, NED University of Engineering and Technology. (June 2017 – March 2019).
- **Assistant Professor (IPFP):** Department of Chemistry, NED University of Engineering and Technology. (April 2016 - April 2017).
- **Co-operative Teacher:** Department of Chemistry, NED University of Engineering and Technology. (July 2014 - April 2016)

1. Academic Activities:

- BE courses: Applied Chemistry and Applied Chemistry for Engineers.
- BS courses: Organic Chemistry I, Organic Chemistry II, Physical Chemistry II, Separation Techniques and Spectroscopy, Industrial Chemistry Lab II, Industrial Chemistry Lab III, Industrial Chemistry Lab IV, Industrial Chemistry Lab V and Industrial Chemistry Lab VI.
- MS courses: Advanced Spectroscopic Techniques, General Chemistry, Advanced Chromatographic Techniques and Separation Techniques.
- Ph.D. course: Retrosynthetic Analysis.
- Designed and composed Lab manuals for BS(IC): Industrial Chemistry Lab III, Industrial Chemistry Lab V and Industrial Chemistry Lab VI.

2. Administrative Responsibilities:

- Working as a Class advisor for SS(IC) and TS(IC) since spring semester 2015- February 2019.

- Arranged industrial visit for BS Industrial Chemistry students to Gentipak Industries (General Tyre) in 2016 and 2018.

3. Research Activities:

- Gas Chromatographic Applications for Analysis of Antidiabetic Drugs in Pharmaceutical Formulation & Spectral Studies of Derivatives of a Triterpenoid (2016): Zainab Qadir. MS Batch 2014-15
- Pharmaceutically Interesting Derivatives of Triterpenoids (2018): Nabila Hassan. MS Batch 2016-17.
- Interaction of metal with heteroatom and their biological effects (Ongoing): Muhammad Hasan Jaliawala. MS Batch 2017-18.
- Synthesis of Azo Dyes (2017): BS Batch 2013-2014
- Plant Mediated Synthesis and Evaluation of Antimicrobial Activities of Silver Nanoparticles (2017): BS Batch 2013-2014
- Synthesis and Characterization of Zinc Oxide Nano Particles with Green Synthesis and Wet Chemical Method (2017): BS Batch 2013-2014
- Synthesis, Characterization and Activities of the Derivatives of Triterpenoids (2018): BS Batch 2014-2015
- Chemical composition, Antibacterial and Antifungal Activities of *Azadiracta indica* and *Mentha spicata* L. leaves Essential oils (2018): BS Batch 2014-2015

4. Training Attended:

- "Objective 2016" and submitted report of Instructional Plans.
- "Duties and Responsibilities of Class Advisors" January, 2017.
- "Orientation Program of Online Library Services & Digital Resources" February 2017.
- "Importance of Feedback Analysis" March 2017.
- "Faculty Development Program" February 2018.

Research Skills

- Detailed knowledge of almost all organic laboratory equipment, especially UV, IR, NMR (including H^1 and C^{13} -NMR and 2D-NMR), EI-MS and HREI-MS.
- Isolation and derivatisation of natural products. Structure elucidation with modern NMR techniques including acquisition of 2D experiments.
- Use of current analytical and predictive tools including HPLC, GC and GC-MS chromatography.

Courses Attended from International Scientists

- Course 6 credit hours taken by Prof: Dr. Daniel D. Traficante (Director of NMR Concepts), University of Rhode Island, in November 2007, in H. E. J Research Institute of Chemistry.
- "Lecture Series on Modern Mass Spectrometry", delivered by Prof. Dr. David Smith, Department of Chemistry, University of Nebraska, USA, during February 07-29, 2008, held at H. E. J Research Institute of Chemistry.
- Course 2 credit hours on "Total Synthesis of Natural Products", delivered by Prof. Dr. Dieter Scholz, during 14-26 November, 2011, organized at the L.E.J. National Science Information Center, University of Karachi.

Publications

- A new 28- noroleanane triterpenoid from the aerial parts of *Lantana camara* Linn., Sabira Begum, Syeda Qamar Zehra, **Anjum Ayub**, Bina Shaheen Siddiqui, *Nat. Prod. Res.*, **24**, 1227-1234, **2010**.
- Chemical Constituents from the aerial parts of *Lantana camara* Linn., Sabira Begum, **Anjum Ayub**, Syeda Qamar Zehra, Bina Shaheen Siddiqui., *Chem. Nat. Compd.* **49**, 566-567, **2013**.
- Leishmanicidal Triterpenes from *Lantana camara*, S. Begum, **Anjum Ayub**, S. Q. Zehra, B. S. Siddiqui, M. I. Choudhary, Samreen, *Chem. Biodivers.*, **11**, 709-718, **2014**.
- Mosquito Repellent Activity and Toxicity of Flower Buds (Cloves) of *Syzygium aromaticum* Linn., S. Begum, Sara, **Anjum Ayub**, R. M. Tariq, B. S. Siddiqui, *Am. J. Pharm. Health Res.*, **2** (11), 55-62, **2014**.
- Luteolin and kaempferol from *Cassia alata*, antimicrobial and antioxidant activity of its methanolic extracts, A. Wahab, Tahira, S. Begum, **Anjum Ayub**, I. Mahmood, T. Mahmood, A. Ahmed, N. Fayyaz, *FUUAST J. Biol.*, **4**, 1-5, **2014**.
- Nematicidal triterpenoids from *Lantana camara*, S. Begum, **Anjum Ayub**, B. S. Siddiqui, S. Fayyaz, F. Kazi, *Chem. Biodivers.*, **12**, 1435-1442, **2015**.
- Suppression of thermal and chemical nociception in rats by methanol extracts and its sub-fractions from *Lantana camara*, S. U. Simjee, H. Parveen, S. Q. Zehra, **Anjum Ayub**, B. S. Siddiqui and S. Begum, *J. Chem. Soc. Pak.*, **38**, 685-692, **2016**.
- Antibacterial activity of methanolic extracts from some selected medicinal plants, S. T. Ali, **Anjum Ayub**, S. N. Ali, S. Begum, B. S. Siddiqui, N. Mahmood and K. A. Khan, *FUUAST J. Biol.*, **7**, 123-125, **2017**.
- Antimicrobial activity of *Lantana camara* Linn., **Anjum Ayub**, S. Touseef, S. Q. Zehra, S. Begum, B. S. Siddiqui and A. Ahmed, *FUUAST J. Biol.*, **7**, 127-130, **2017**.
- Triterpenoids from aerial parts of *Lantana camara*, **Anjum Ayub**, S. Begum, S. N. Ali, S. T. Ali and B. S. Siddiqui, *J. Asian Nat. Prod. Res.*, **21**, 141-149, **2019**.
- Antioxidant activity of the medicinal plant *Lantana camara* L., **Anjum Ayub**, S. Touseef, S. N. Ali, S. Begum, B. S. Siddiqui and A. Ahmed, *FUUAST J. Biol.*, **7**, 227-230, **2017**.
- Optimization of invertase and alpha amylase production, K. Ahmed, **Anjum Ayub** and S. Naz, *Int. J. Biol. Biotechnol.* **15**, 351-355, **2018**.
- Synthesis and biological evaluation of harmol derivatives as potential nematicidal agents, **Anjum Ayub**, S. Begum, A. Khan, S. N. Ali, S. T. Ali and B. S. Siddiqui, *J. Chem. Soc. Pak.*, **40**, 933-940, **2018**.
- Isolation and spectral studies of a new lactone triterpenoid from *Lantana camara*, **Anjum Ayub**, S. Begum, Sara, S. T. Ali and B. S. Siddiqui, *Chem. Nat. Comp.*, **2018**. (Accepted 28th June, 2018)

- Camaridin, A new triterpenoid from roots of *Lantana camara*, S. N. Ali, O. H. Mustafvi, S. Begum, **Anjum Ayub**, and B. S. Siddiqui, *Chem. Nat. Comp.*, **2018**. (Accepted 28th June, 2018)
- Liquid chromatographic method for simultaneous determination of alprazolam with NSAIDs in bulk drug, pharmaceutical formulation and human serum, S. N. Ali, S. Akram, A. Qayoom, N. Naz, **Anjum Ayub**, *Pak. J. Pharm. Sci.*, **2018**. (Accepted for publication, 2018).
- Volatile constituents and *in vitro* activity of *Syzygium aromaticum* flower buds (clove) against human cancer cell lines Sara, S. Begum, S. N. Ali, A. D. Farooq, F. Siddiqui, B. S. Siddiqui, **Anjum Ayub**, M. Fatima, *Chem. Nat. Comp.*, **2019**. (Submitted April, 2019)

Conferences & Workshops

- Participated in **“11th International Symposium on Natural Product Chemistry”** 29th October -1st November **2008**, organized by the H.E.J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.
- Participated in **One day Workshop on “Natural Product-Based Drugs and Other Botanicals-Present Status and Future Prospects”** 16th May **2009**. Organized by British Council in International Center for Chemical and Biological Sciences.
- Participated in **“12th International Symposium on Natural Product Chemistry”** 22nd - 25th November **2010**, organized by the H.E.J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.
- Participated in **On-line Workshop on “Modern Techniques in Combinatorial Chemistry”** held on 14th -16th June **2011**. Organized by the L.E. J. National Science Information Center, International Center for Chemical and Biological Sciences, University of Karachi. Pakistan.
- Participated in **On-line Workshop on “How to write Scientific Manuscripts for High Impact Factor Journals?”** held on 23rd July **2011**. Organized by the L.E.J. National Science Information Center under the Virtual Education Project Pakistan (VEPP) and Higher Education Commission, Pakistan.
- Participated in **On-line Workshop on “How to write a Winning Scientific Research Proposal?”** held on 24th September **2011**. Organized by the L.E. J. National Science Information Center under the Virtual Education Project Pakistan (VEPP) and Higher Education Commission, Pakistan.
- Participated in **On-line Workshop on “Developing Skills for the Interpretation of 1D and 2D NMR Spectral Data for the Structure Determination of Organic Molecules”** held on 25-26 April, **2012**. Organized by the L.E. J. National Science Information Center under the Virtual Education Project Pakistan (VEPP) and Higher Education Commission, Pakistan.

- Participated in one day workshop on **“Identify Your Research “BUG”: API Kit Systems”** 16th September **2013**, organized by Department of Microbiology, Federal Urdu University in collaboration HEC KU-ORIC, Karachi, Pakistan.
- Participated in **“14th Asian Symposium on Medicinal Plants, Spices and Other Natural Products (ASOMPS)”** 9th-12th December **2013**, organized by the H.E.J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.
- Participated in **Workshop on “Developing Industry Driven Technologies”** held on 5th - Jan **2015**. Organized by the PASTIC-PSF and NED University of Engineering and Technology. Karachi. Pakistan.
- Participated in **“1st International Conference on Advanced Materials & Process Engineering-2015”** held on 14th-15th December **2015**, organized by Department of Chemical Engineering and Department of Polymer & Petrochemical Engineering, NED University of Engineering and Technology. Karachi. Pakistan.
- Participated in **“Lecture on Drawing Lewis Structure”** held on 18th February **2016**, organized by QPSP in NED University of Engineering & Technology, Karachi. Pakistan.
- Participated in **“14th Eurasia Conference on Chemical Sciences”** 15th-18th December **2016**, organized by the H.E.J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.
- Participated in **“One Day Training Workshop on “Approaching Towards Comprehensive Elimination of Persistent Organic Pollutants (Pesticides) in Pakistan”** Organized by UNDP & gef in **2017**.
- Participated in **“One Day Workshop on Laboratory Safety and Security”** 30th October **2017**, organized by International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.

Presentation in Conferences/Symposia

- **Presentation on “Chemical Constituents of *Lantana camara* Linn.”** in **8th International and 20th National Chemistry** Conference. 15th-17th February **2010** Islamabad, Pakistan. Organized by Chemical Society of Pakistan in Quaid-e-Azam University Islamabad, Pakistan.
- **Presentation on “Leishmanicidal activity of aerial parts of *Lantana Camara* Linn.”** in **9th International and 21st National Chemistry** Conference. 14th-16th March **2011** Karachi, Pakistan. Jointly organized by The Department of Chemistry & International Center for Chemical and Biological Sciences University of Karachi, Pakistan.
- **Presentation on “Bioactive Triterpenoids from *Lantana Camara* Linn.”** in **“13th International Symposium on Natural Product Chemistry”** 22nd -25th September **2012**, organized by the H.E.J Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi, Pakistan.
- **Presentation on “Bioassay Guided Isolation of Chemical Constituents from the Fresh Leaves of *Psidium guajava*”** in **“Regional Conference of Young Scientists on Recent Trends**

in Physical & Biological Sciences” 7th- 8th March, 2014, organized by The world Academy of Science (TWAS)-for the advancement of Science in Developing Countries Regional Office for Central & South Asia at Jawahirlal Nehru Centre For Advanced Scientific Research, Bangalore, India.

- **Presentation on “Bioactive Triterpenoids from the Aerial Parts of *Lantana camara* Linn.”** in **“11th International Symposium on Analytical and Environmental Chemistry” 7th -8th March 2016**, organized by National Centre of Excellence in Analytical Chemistry, University of Sindh, Jamshoro, Pakistan.
- **Presentation on “Dengue Mosquito Repellent and Larvicidal Spice, Clove”** in **“8th Chemistry Conference 2016 on Chemistry in Engineering and Life Sciences” 28th-30th November 2016** Islamabad, Pakistan. Organized by Chemistry Division, Pakistan Institute of Nuclear Science and Technology (PINSTECH) In Collaboration with Directorate General of Nuclear Fuel Cycle (DGNFC), New Chemical Complex (NCC) and Pakistan Institute of Engineering and Applied Sciences (PIEAS).
- **Presentation on “Pharmaceutically active derivatives of oleanolic acid”** in **16th International and 28th National Chemistry** Conference. 20th-22nd November **2017** Karachi, Pakistan. Organized by Department of Chemistry, Federal Urdu University of Arts, Science and Technology, Gulshan-e-Iqbal Campus, Karachi, Pakistan.
- **Presentation on “Synthesis and Nematicidal Activity of Derivatives of Oleanolic acid”** in **4th International Conference on Bioscience and Biotechnology (Bio-Tech 2019)**. 21st-22nd February **2019** Kuala lampur, Malaysia.