

PROF. DR. BINA S. SIDDIQUI
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ACADEMIC QUALIFICATIONS

DEGREE	YEAR AWARDED	INSTITUTION	SUPERVISOR
D.Sc.	2001	Karachi University	-
Ph.D.	1980	Karachi University	Prof. Dr. Salimuzzaman Siddiqui, FRS
M.Phil	1978	Karachi University	Prof. Dr. Salimuzzaman Siddiqui, FRS

SPECIFIC FIELDS OF SCIENTIFIC INTEREST

- a. Research on natural products directed towards their medicinal and agricultural applications.
- b. Synthesis of analogues of bioactive compounds and correlation of structure and biological activity to obtain new potential therapeutic agents.
- c. Research and development of bio-pesticides and bio-fertilizers for use in agriculture and horticulture.

PROFESSIONAL EXPERIENCE

- a. Research Fellow, HEJ Research Institute of Chemistry, University of Karachi, 1970-1982 (Basic research).
- b. Senior Research Fellow, HEJ Research Institute of Chemistry, University of Karachi, 1982-1983 (Basic research).
- c. Assistant Professor, HEJ Research Institute of Chemistry, University of Karachi, 1983-1990 (Research, teaching, supervision of M.Phils. and Ph.D. students).
- d. Associate Professor, HEJ Research Institute of Chemistry, University of Karachi, 1990-1996 (Research, teaching, supervision of M.Phil. and Ph.D. students).
- e. Professor, HEJ Research Institute of Chemistry, University of Karachi, 1996 to date (Research, teaching, supervision of M.Phil. and Ph.D. students, administration responsibilities).

- f. Co-Director, H.E.J. Research Institute of Chemistry, University of Karachi, Oct. 1999-2002 (Research, teaching, supervision M.Phil. and of Ph.D. students, administrative responsibilities).
- g. Acting Director, HEJ Research Institute of Chemistry, University of Karachi, March 2000-2002 (Research, teaching, supervision of M.Phil. and Ph.D. students, administrative responsibilities).

MAJOR CAREER ACHIEVEMENTS

a. Scholarships: From F.Sc. Part I to M.Sc. Final and AS M.Phil Ph.D. student throughout got merit scholarship of Karachi Board and University.

b. Publications: 412 including 328 research papers in peer reviewed international Journals, and 17 chapters in books, 47 abstracts published in proceedings and 20 patents. (CITATIONS: 3561; h-index: 30; impact factor: 565.754)

c. Patents: 20 patents

Three patents granted by the Government of USA.

Fifteen patents granted by the Government of Pakistan

Two patents granted by the Government of Kazakhstan

d. Research Supervision: 38 Ph.D. theses.
08 M.Phil theses.
28 M.Sc. theses.

e. Research Grants

S. No.	Title of Project	Name of Funding Agency	Year	Amount (Rs. Million)
1	Bioassay-directed Studies on the Chemical Constituents of <i>Nerium oleander</i> , <i>Lawsonia alba</i> and <i>Cyamopsis</i>	U.G.C.	1998-1999	0.500
2	Potential Anti-tuberculosis Constituents of <i>Ficus glomerata</i> Roxb. (syn. <i>F.racemosa</i> Linn)	U.G.C.	1999-2000	0.236
3	Studies on the Chemical Constituents of <i>Piper nigrum</i> Linn	U.G.C.	2000-2001	0.160
4	Development of Plant Based Pesticides	M.o.S.T.	2001-2004	29.359
7	Phytochemical and Pharmacological Studies on some Kazakh Plants	COMSTECH	2003-2004	0.600
8	New Anticancer Agents from Indigenous Resources	HEC	2004-	0.969

			2007	
11	Search for New Anti-Tuberculosis Agents	PAS	2005-2008	0.947
13	Research Support Programme for Active Scientists and Technologists of Pakistan	PSF	2007	Rs.660,000/=
14	Phytochemical and Pharmacological Studies on some Kazakh plants	COMSTECH	2007-2008	0.570
15	Synthesis of Potential Anti-Tuberculosis Analogues	PAS	2008-2011	2.622
16	Research Allocation for Distinguished National Professor	HEC	2006-2008	0.600
17	Isolation for Potential Active Compounds from Plants reputed for Anti-cancer Activity	HEC	2013-2016	13.225
18	Antimicrobial Constituents from the Endophytic Fungi of Indigenous Medicinal Plants	PAS	2013-2016	1.812

MEMBERSHIP OF INSTITUTIONS & PROFESSIONAL BODIES

- a. Elected **Fellow of the Third World Academy of Sciences**, Trieste, Italy (1989).
- b. Elected **Full Member of the Third World Organization for Women in Science**, Trieste, Italy (1989).
- c. Elected **Fellow of the Pakistan Academy of Science**, 1998.
- d. **Member of the Membership Election Committee of Third World Academy of Sciences (TWAS)** for Chemistry, 1999-2003.
- e. Serve on the **TWAS Independent Expert Committee (IEC)** for the review of TWAS Prize candidates for the three-year period 2013-2015.
- f. Presently serving on the **TWAS Independent Expert Committee (IEC)** for the review of TWAS Prize candidates for the three-year period 2016-2018.
- g. Elected **Fellow of the Chemical Society of Pakistan**, 2000.
- h. Member **American Chemical Society**, 2006.
- i. Life Member of the **Chemical Society of Pakistan** 1988.
- j. **Secretary Karachi Chapter, Pakistan Academy of Sciences**, 2013-2014.

- k. **Elected Member Council, Pakistan Academy of Sciences, 2015-2017.**

HONOURS & AWARDS

- a. Awarded **Life Time Academic Achievement Award** by Higher Education Commission of Pakistan on October 17, 2011.
- b. **Khwarzimi International FIRST AWARD** conferred by the President of Islamic Republic of Iran on 5th February 2001.
- c. **Distinguished National Professor** of HEC, Pakistan (2005).
- d. Awarded **Gold Medal** and degree of **D.Sc.** by Chancellor, Governor of Sindh, (University of Karachi), 2001.
- e. **Sitara-e-Imtiaz** civil award awarded by the Govt. of Pakistan on 23rd March 2005.
- f. **Tamgha-e-Imtiaz** civil award announced by the Govt. of Pakistan on 14th Aug. 1999 and conferred on 23rd March 2000.
- g. Received the First **Dr. Abdus Salam Prize in Chemistry for 1986**
- h. Received **First Prize of the National Book Foundation in 1997** on publications for the year 1994.
- i. Received "**Star Woman of the year 1997**" award and **Gold Medal** by the Star Girls and Woman International Awards Committee of the Star Girls and Woman Foundation.
- j. Received **Nishan-e-Danish Plaque** by the Karachi University, Teachers Society in 1998.
- k. Received **Nishan-e-Azmat-e-Ilm Plaque** by the Karachi University Teachers Society in 1989.
- l. Received **Nishan-e-Azmat-e-Danish Plaque** by the Karachi University Teachers Society in 1993
- m. **National Rank among Women Scientists (Chemistry) of Pakistan = 1.** According to book **Productive Scientists of Pakistan** published by the Council of Science and Technology, Ministry of Science, Islamabad
- n. **Editor of Al-Chemy**, a newsletter of the Chemistry Society of Pakistan, 1999-2001.
- o. **Member** of the Board of Advanced Studies and Research (**BASR**) Ziauddin Medical University, Karachi, Pakistan, 1999 to 2008.
- p. **Convenor** of the National Committee of Ministry of Science and Technology, Pakistan for evaluation and upgradation of Chemistry Institutions in Pakistan, 2000-2001.
- q. **Convenor** of the National Committee of Pharmaceuticals and Drugs 2004.
- r. **Member** of Board of Graduate Studies, of the Aga Khan University, Karachi, Pakistan 2004 to 2008.
- s. **Member** of the Board of Advanced Studies and Research (**BASR**) University of Karachi, Karachi, Pakistan 2004 to 2007.
- t. According to IAS News Publication February 23, 2014 Muslim-Science.Com has published the first ever list of 'Top-20 Most Influential Women in Science in the Islamic World'. Dr. Siddiqui stands among four pioneer women scientists in the Muslim world.

CONFERENCES ATTENDED:

Attended 84 international conferences as participant, Invited/plenary speaker

RESUME

(PROF. DR. BINA S. SIDDIQUI *S.I., T...I., Khwarizmi Lauriate*)

A. Biography

Professor Bina S. Siddiqui is Distinguished National Professor at H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences, University of Karachi. She has more than 33 years experience of research and teaching (graduate and postgraduate level) after doing Ph.D. from the University of Karachi under the supervision of (Late) Prof. Dr. Salimuzzman Siddiqui, *FRS*. She was awarded the degree of **D.Sc.** by the University of Karachi in 2001. Her contributions have culminated in over **412 publications** including 328 research papers in peer reviewed international Journals, 17 chapters in books, 47 abstracts published in proceedings and **20 patents** (03 US patents, 15 patents of Government of Pakistan and 02 patents granted by the Government of Kazakhstan) (please see List of Publications, Chapters in Books and Patents (22)). She has supervised **74** research students including **38 PhDs**, **08 M.Phil** and **28 M.Sc.** She has participated and presented papers as invited and plenary speaker in more than **70 international conferences** and has been disseminating knowledge through her lectures.

- a. **407** including 323 research papers in peer reviewed international Journals, and 17 chapters in books, 47 abstracts published in proceedings and 20 patents. (CITATIONS: 3560; h-index: 30; impact factor: 565.754)

She is one of the most recognized Scientists of Pakistan and internationally recognized for her researches in natural products directed towards medicinal and agricultural applications. According to the citation index published by the Institute of Scientific Information, USA, she is number one woman scientist in the country. The Journal Impact Factor of her publications is **551** and Science Citations are: **4009** (Google Scholar) and **2942** (web of Science), (*h*-index: 32).

B. Studies on medicinal plants

Her work on medicinal plants has resulted in the discovery of several hundred new/novel natural products many of which have exhibited exciting biological activities with potential applications in medicine. Some of these include an anti-epileptic compound (US patents: Patent No.: US 9,272,998 B1. Date of Patent: March 01, 2016; *BioMed Research International* 01/2014; 2014:876712. DOI:10.1155/2014/876712); antimycobacterial constituents with potential applications in tuberculosis treatment (US patents: Patent No.: US 8,389,503 B2; Date of Patent: Mar. 5, 2013 and Patent No. : US 8,420,660 B2 ; Date of Patent: April 16, 2013; *Natural Products Research*, (2008), 22, 467-470; *Natural Products Research* (2012), 26, 2084-2088; *J. Ethnopharm.* (2012), 144, 220-222; *Journal of Pharmacy Research* (2012), 5, 5561-5563; compounds with potential applications in cancer treatments (*Phytochemistry* (1995), 39, 171-174; *Letters in Drug Design & Discovery* (2010), 7, 726-736; *Phytochemistry Letters* (2013), 6, 91-95; *Phytochemistry* (2012), 77, 238-244; CNS stimulant and depressant compounds (*Phytomedicine* 04/2014; DOI:http://dx.doi.org/10.1016/j.phymed.2014.03.001; *Journal of Natural Products* (1997), 60, 540-544; *J. Ethnopharm.* (1995), 49, 33-39); urease and α -chymotrypsin inhibitory constituents (*Fitoterapia* (2013), 84, 202-207);

spasmolytic constituents (*Journal of Natural Products* (2002), 65, 1939-1941; *Journal of Natural Products* (2000), 63, 1265-1268); anti-diabetic compounds (*Journal of Ethnopharm.* (2014) 152, 561–567); antibacterial compounds (*Journal of Natural Products* (1992), 55, 303-310) and hypotensive compounds (*Heterocycles* (1995), 41, 267-276) to mention some of these.

C. Studies on botanical pesticides and fertilizers

Another noteworthy contribution of Dr. Siddiqui is in the field of agriculture where she studied many plants and obtained safe botanical pesticides and fertilizers. Her particular interest has been in neem (*Azadirachta indica*). She worked on almost every part of this wonder tree on which she published more than **65 research papers** and isolated **more than 100 new compounds** with significant biological activities as exemplified by some of her publications (*J. Chem. Soc. Perkin Trans 1* (1999), 16, 2367-2370; *Phytochemistry* (2000), 53, 371-376; *Tetrahedron* (2000), 56, 3547-3551; *Journal of Natural Products* (2002), 65, 1216-1218. Her studies on neem resulted in development of safe, biodegradable, easy to prepare and environment friendly bio-pesticides and bio-fertilizers. She developed a pilot plant to demonstrate production of biopesticides and fertilizers and demonstrated their use in fields and trained farmers.

Many other plants studied for their pest controlling effects include *Lantana camara* (*Journal of Natural Products* (2000), 63, 765-767; *Chemistry and Biodiversity* (2008), 5, 1856-1866); *Piper nigrum* (*Heterocycles* (2002), 57, 1653-1658; *Helvetica Chimica Acta* (2004), 87, 660-666; *Chem. Pharm. Bull* (2004), 52, 1349-1352) and *Cordia latifolia* (*Chemistry and Biodiversity* (2011), 8, 850-861).

D. Studies on synthetic transformations of important compounds with reference to their biological activity and biosynthetic relationship

In addition she did synthetic transformations of active compounds and correlated different skeletal patterns with biological activities ([Journal of Natural Products 2002](#), 65, 1939-1941; *Helvetica Chimica Acta*, 2003, 86, 3342-3353; *Z. Naturforsch, B*, 2004, 59c, 104-112; *Natural Product Communications*, 2009, 4, 473-476.