


## Dr Ahmed Kamal

**Positions Held** : *Pro-Vice Chancellor*  
and Professor, School of Pharmaceutical  
Education and Research (*SPER*)  
Jamia Hamdard  
New Delhi 110062



Formerly  
*Outstanding Scientist*  
Head, Medicinal Chemistry and Pharmacology  
CSIR - Indian Institute of Chemical Technology (*IICT*)  
Hyderabad

*Project Director*  
National Institute of Pharmaceutical Education and Research  
(*NIPER*), Hyderabad

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**Born** : April 5, 1956

### Education

Post-Doc. Research (Medicinal Chemistry), University of Portsmouth, UK, 1988-89  
Ph.D. (Chemistry), Aligarh Muslim University, Aligarh, 1982 (worked at IICT)  
M.Phil. (Chemistry), Aligarh Muslim University, Aligarh, 1979 (worked at IICT)  
M.Sc. (Organic Chemistry), Aligarh Muslim University, Aligarh, 1977  
B.Sc. (Chemistry, Biology), Osmania University, Hyderabad, 1975

### Professional Positions

October, 2017 till date Pro-Vice Chancellor, Jamia Hamdard, New Delhi, India

2010 - 2016 Outstanding Professor (AcSIR)/Outstanding Scientist (Director level)  
CSIR - Indian Institute of Chemical Technology, Hyderabad, India

2009 - 2016 Project Director, National Institute of Pharmaceutical Education and  
Research [NIPER], Hyderabad (Additional charge)

2012 – 2013 & 2015 Acting Director  
CSIR - Indian Institute of Chemical Technology, Hyderabad, India

2007 - 2010 Professor (AcSIR)/Chief Scientist (Scientist-G), Indian Institute of  
Chemical Technology, Hyderabad, India

1983 - 2007 Scientist at different levels, Indian Institute of Chemical Technology,  
Hyderabad, India

1977-82 CSIR - Junior / Senior Research Fellow

**Publications** (*Total citations more than 10,000; h-index 47*):

- Peer reviewed articles in journals: Over 540
- Review articles : 30
- Chapters in books : 10
- Others : 2 (Guest editors of special issues of journals)
- Popular articles : 5

**Patents**

- Total number of patents : 432
- Patents granted : 306
- Patents filed : 126

Five (5) of the US patents have been licensed to a pharmaceutical company for their clinical development at an upfront payment of Rs. 5 million and milestone payments of about Rs. 24 million apart from royalties. Some of the compounds from these patents have been completed preclinical studies, and are likely to taken up for clinical studies.

**Invited Lectures** Over 150 lectures

**Honours and Awards**

*YMSA Young Scientist Award from MAAS & TWAS – 1988*

*CSIR Young Scientist Award in Chemical Sciences – 1991*

*Fellow of National Academy of Sciences, India – 1999*

*Best Patent Award from the Indian Drug Manufacturers Association (IDMA) – 2005*

*Medal from the Chemical Research Society of India (CRSI) for contributions to research in Chemistry – 2005*

*Ranbaxy Research Award in the field of Pharmaceutical Sciences - 2005*

*UKIERI Standard Award for Biomedical Solutions between India and UK – 2006*

*Andhra Pradesh Scientist Award in Chemical Sciences by A P State Council of Science & Technology – 2007*

*OPPI Scientist Award from the Organization of Pharmaceutical Producers of India – 2009*

*Fellow of Andhra Pradesh Academy of Sciences (FAPSc) – 2010*

*Fellow of Royal Society of Chemistry (FRSC) – 2011*

*Most Outstanding Researcher in the field of Chemistry by Careers 360 - 2018*

**Fellowships**

*JSPS Research Fellowship for Foreign Researchers (Japan) – 2002*

*DAAD Fellowship under the Indo-German Academic Exchange Programme – 2005*

**Visiting Professorship**

*College of Chemistry-Faculty of Science, King Saud University - 2011-17*

### **Visiting Scientist**

School of Pharmaceutical Sciences, University of Alberta, Edmonton, Canada, 1983 - 1994

### **Research Students**

Over One Hundred (100) students have completed their Ph.D programmes under the guidance.

### **Leadership of Jamia Hamdard**

In recent years the growth of Jamia Hamdard has been phenomenal, it is the top fifth private University to be recommended as the Institution of Eminence (IoE) by MHRD. The School of Pharmacy is ranked as the first ranking institution in the country by National Institutional Ranking Framework (NIRF) in 2020, as a University it is ranked 21<sup>st</sup> in the country. Times Higher Education (THE) World subject rankings 2021 in Life Sciences and Clinical and Health is in 401-500 and 501-600 bands for Jamia Hamdard. In recent years a number of new courses and programmes have been initiated at the University in various disciplines.

Keeping in view of the 'Make in India' and 'Startup India' initiatives by the Govt. of India Jamia Hamdard has started Skill Development and Entrepreneurship programmes in a big way and interestingly the University is collaborating with Wadhvani Foundation for the Masters in Entrepreneurship. To start the Online Courses at Jamia Hamdard an initiation was made last year, this become a very important aspect in the present scenario of the spread of pandemic globally. Efforts are in progress to develop the necessary infrastructure for starting the Online Courses at Jamia Hamdard in different programmes.

### **Establishment of NIPER, Hyderabad / NCRDBD**

As a Project Director of National Institute of Pharmaceutical Education and Research (NIPER), Hyderabad for about seven years (2009-16), has taken up several measures for the overall growth and improvement of this institute of national importance. Many new concepts have been introduced with respect to a large number of aspects, such as administrative, academics/examinations and research activities. New disciplines that could be important for this region including Ph.D Programmes as well as management courses in pharmaceutical sciences have been introduced. Significant inputs have been provided for the conceptualization and setting up of the National Centre for Research and Development in Bulk Drugs (NCRDBD).

### **Establishment of Biotech Incubation Centre (BTIC) / Chemical Biology Facility**

Played an important role in the conceptualization and establishment of Biotechnology Incubation Centre (BTIC) at the Biotech Park in the Genome Valley. This facility has attracted several entrepreneurs to setup their own biotech companies in and around Hyderabad. A Pre-BTIC facility has also been established at IICT. A Chemical Biology facility was also set up at IICT as a Suprainstitutional Project to facilitate the development of affordable new drugs particularly in the area of cancer.

### **Research Interests**

Multi-disciplinary research programmes including organic synthesis, medicinal, combinatorial and green chemistry including chemical biology and biocatalysis. Design and synthesis of gene-targeting compounds as new and novel anticancer agents, and their targeted delivery as prodrugs.

## Significant Research Contributions

### *Development of Anticancer Therapeutics*

The discovery of potent, selective and less toxic anticancer agents has been considered as one of the major challenges in medicinal chemistry. Significant efforts have been made to design and synthesize a large number of heterocyclic hybrids and their conjugates wherein at least two biologically well established components were brought in to a single moiety that could interact or sometimes enhance the biological effect for the same target. In this pursuit, structural modifications on the pyrrolo[2,1-*c*]benzodiazepine (PBD) ring system has been explored extensively. These results provided further inputs understand the combination of certain non-covalent interacting groups with a PBD moiety that led to the design and synthesis of a variety of hybrids and conjugates.

Moreover, a large number of DNA topoisomerase II and tubulin polymerization inhibitors as well as inducers of apoptosis based on podophyllotoxin, combretastatin A-4, phenstatin,  $\beta$ -carboline, curcumin and E7010 scaffolds have been designed, synthesized and evaluated for their anticancer potential. Some lead compounds are undergoing detailed investigations.

### *Development of New Antitubercular Agents*

Many heterocyclic scaffolds like phthalamido/naphthalimido linked phenazines, 1,2,4-benzothiadiazines, benzothiazole conjugates, arylsulfonamido oxazolidinones and thialactone based conjugates have been designed and investigated to evaluate their antitubercular potential.

### *Biocatalysis / Biotransformations and Biofuels*

A large number of enantiomerically pure chiral intermediates have been obtained by lipase catalyzed transesterification processes. Coordinated the US-India Consortium for the Development of Sustainable Advanced Lignocellulosic Biofuel Systems under the Second Generation Biofuels for the Indo-US Clean Energy Research Initiative.

### *Academic and Industrial Collaborations*

The research and development activities during the career represent many conceptual and original ideas with experimental excellence that is in tune with the priorities and requirements. Played an important role in the formulation and development of a large number of projects/programmes with academia and industrial collaborations/sponsorships that led to fruitful industry-institute linkages. The research work relating to new chemical entities has been focused towards the affordable healthcare (cancer therapeutics). Substantial number of process technologies have been investigated in collaboration/sponsorship with industry, particularly, in the development of environmentally benign processes by utilizing microbes/enzymes as biocatalysts with an endeavour to bring organic synthetic processes closure to that practised by nature. This challenging area of research has considerable impact on the environment apart from the development of cost-effective processes.

Research programmes in association with industry were conceptualised. Some of the industries that were associated with are: Yamanuchi Pharmaceuticals Limited (Japan), Mitsubishi (Japan), Marubeni (Japan), Sheratori Pharma (Japan), Dupont (USA), Spirogen Pharmaceuticals (UK), Evolva (Switzerland), Ranbaxy Laboratories (New Delhi), Lupin Laboratories (Pune), Acoris, (Pune) and Pedilite (Mumbai).

Several academic collaborations were developed internationally and nationally and some of these institutes are - Imperial College London, Kings College, London, University of Wuppertal, Germany, University of Greifswald, Germany, University of Cape Town, University of the Witwatersrand, Johannesburg, South Africa, Lomonosov Moscow State University, Russia, ACTREC, Mumbai, CCMB, Hyderabad and IISc, Bangalore.

## **Membership of Professional and Academic Bodies**

- Member, Editorial Advisory Board “*ChemMedChem*” (Wiley)
- Member, Editorial Advisory Board “*RSC Med.Chem.*” (RSC)
- Member, Editorial Advisory Board “*J. Saudi Chem. Soc.*” (Elsevier)
- Member, Editorial Advisory Board “*Letters in Drug Design & Discovery.*” (Bentham)

## **Institutional Memberships**

- Chairman, Recruitment and Assessment Board (RAB), Defence Research and Development Organization (DRDO), New Delhi
- Executive Committee Member, Jawaharlal Nehru Technological University (JNTU), Hyderabad
- Member, Expert Appraisal Committee (Industry), Ministry of Environment, Forest and Climate Change, New Delhi
- Member, Unani Pharmacopoeia Committee (UPC), Ministry of Ayush, New Delhi
- Board Member, Recruitment and Assessment Board (RAB), Council of Scientific and Industrial Research (CSIR)
- Member, Research Council, Dr. Reddy’s Institute of Life Sciences, Hyderabad
- Member, Scientific Advisory Committee of Central Council for Research in Unani Medicine, New Delhi
- Board Member, Life Sciences Sector Skill Development Council (LSSSDC), New Delhi
- Member, Pharma Advisory Committee of Andhra Pradesh
- Member, Task Force on Energy Biosciences, Department of Biotechnology (DBT), Ministry of Science & Technology
- Joint Secretary, Chemical Research Society of India (CRSI)
- Member, Project Monitoring Committee of Department of Biotechnology (DBT), SIBRI Programme
- Member, Institutional Bio-safety Committee (ISBC), Department of Biotechnology (DBT)
- Member, Andhra Pradesh State Council of the Confederation of Indian Industry (CII) AP Life Sciences Panel