

Some Muslims Scientist to India

Dr. A.P.J. Abul Kalam - India's Missile Man

Dr. Arvul Pakir Jainulabedin Abul Kalam, popularly known as Dr. A.P.J. Abul Kalam, caught national and international attention as "India's Missile Man" with the successful launching of 'Agni' from Chandipur(Orissa) on May 22, 1989.

Born in 1931 at Rameshwaram in Tamil Nadu, Dr. Abul Kalam is a DMIT (Diploma from the Madras Institute of Technology) in Aero Engineering. He was awarded a Doctor of Science (D.Sc.) degree (Honoris Causa). He was Director-in-charge of ASLV mission at Indian Space Research Organization (ISRO) before becoming the Director of the Defense Research and Development Laboratory (DRDL) which is located in Hyderabad, in Andhra Pradesh. He is a Fellow of the Indian Academy of Sciences.

Dr. Abul Kalam is the brain behind "Agni"; the indigenously developed 17 meter long and 75 ton multiple stage missile with a payload of 1000 kg (kilogram). Its range is anywhere between 1600 km (kilometers) to 2500 km. He was assisted by a 400-strong team of scientists.

Due to his team's efforts, India overcame the stipulations made by the seven Western Countries' Missile Technology Control Regime (MTCR) to deny missile technology to the third world countries.

According to the eminent space scientist, "our indigenous missile technology is comparable to the best in the East or the West with its re-entry technology guidance and control technology with on-board computers."

Dr. APJ Abul Kalam, who hails from Tamil Nadu, worked on projects such as 'Prithvi', etc. at the DRDL in Hyderabad, Andhra Pradesh. For his contributions to India's Missile Program and the successful detonation of Nuclear Weapons in May 1998, he was appointed as Advisor to the Defense Minister and subsequently awarded "Bharat Ratna" the highest civilian award by the Government of India.

Dr. Israr Ahmed - Physicist

Dr. Israr Ahmed, Director, Center for Promotion of Science, Aligarh Muslim University (AMU), Aligarh, is a distinguished scientist. He is considered an authority on Theoretical Nuclear Physics and Quantum Scattering Theory. Besides, he edits the AMU's Urdu monthly 'Tahzibul Akhlaq' and Hindi monthly 'Nishant' since 1986.

Born on December 19, 1940, Dr. Israr Ahmed, is the son of Mr. Mukhtar Ahmed. After his graduation from Gorakhpur University in 1959, he pursued his post-graduation studies and earned a Ph.D. in Physics from AMU. He joined the AMU as a Lecturer in 1961. Since 1984 he is serving the Physics department as its Chairman.

His 48 research papers have so far been published in the international journals. A number of research scholars have been awarded M.Phil and Ph.D. under his supervision.

Dr. Israr Ahmed is an associate member of the International Center for Theoretical Physics located in Trieste (Italy) headed by the late Nobel Laureate, Dr. Abdus Salam. He is a member of the New York Academy of Sciences and as well as the Indian Physics Association.

He organized a conference on '**Religious Seminar and Science Education**' on March 26-28, 1987 and DAE (Department of Atomic Energy) Symposium on Nuclear Physics December 26-31, 1989 at the AMU, Aligarh. He also conducted several introductory science courses for the teachers of Muslim religious seminaries. Besides, he is also a science fiction writer in Hindi, Urdu, and English.

M. Ahmed - Founder of 'Cardinal Geometry'

Mr. M. Ahmed, IAS (Indian Administrative Service) officer, is the author of a Calendar for all years from 45 B.C. to 1999 A.D. and an abridged version of it for 250 years.

He can tell in few seconds the day one was born, if he puts before him his date of birth. He has evolved new concepts in Mathematics, popularly known as '**Cardinal Geometry**.'

It is a new type of Geometry, which deals with the Mathematical Curves, surfaces and coordinates. He has also written a treatise on the subject.

He was born to Mr. Abdul Muthalib Rawther on November 2, 1941 at Adder (Kerala). Mr. Ahmed was the first rank holder in the University of Kerala in both B.Sc. (1961) and M.Sc. (1963) examinations in Mathematics.

After a year as a lecturer in Mathematics in different colleges, he joined the Indian Administrative Service (IAS) in 1965. He was the Collector of Madras, Member-Secretary, Madras Metropolitan Development Authority, Secretary to the Government, Chairman and Managing Director of the Tamil Nadu Warehousing Corporation and is now Vice Chairman, Madras Metropolitan Development Authority. Recently he has been elevated to the grade of Special Commissioner.

In spite of his busy schedule as an administrator, Mr. Ahmed spends some time in academic work and has made a significant contribution to the Mathematics by evolving new principles.

The Cardinal Geometry is an innovative concept in Geometry, developed by Mr. Ahmed, enabling the creation and study of many symmetric mathematical curves and surfaces. The classical geometry knows only a few symmetric curves and surfaces like the circle, ellipse, parabola, hyperbola, cardioid, limacon, lemniscate, curves of Cassini etc., and some of their surfaces of revolution. Besides these curves, many lemniscates, blimps, crescents etc. have been generated by him.

According to Mr. Ahmed, the Cardinal Geometry theory could possibly be extended to the study of magnetism, motion of particles and bodies. It would have both theoretical and practical use in Engineering and Architecture.

Dr. S.Z. Qasim - Antarctica Hero

Dr. Syed Zahoor Qasim, Member Planning Commission, Government of India, was till recently the Vice Chancellor of Jamia Millia Islamia(University) in Delhi. He has had his early education in Allahabad and then at the Aligarh Muslim University, Aligarh from where he took his M.Sc. degree in Zoology. He stood first in the order of Merit for which he was awarded University Gold Medal. For a few years, he was a lecturer in the Department of Zoology at Aligarh before proceeding to the United Kingdom for higher studies in 1953.

He returned to India in December of 1956 and joined the Department of Zoology of AMU as a Lecturer. He became Reader in 1957 and started a new laboratory of Fish and Fisheries in the Department. In 1962, he joined the Central Institute of Fisheries Education, Bombay (Mumbai) as a Professor of Fisheries Biology and in 1964, moved to Cochin as Assistant Director in the Directorate of International Indian Ocean Expedition (IIOE) under the Council of Scientific and Industrial Research (CSIR). Here he extensively worked on biological oceanography especially on the primary productivity of Kerala Backwaters and on the atolls of Lakshwadeep.

From 1970 to 1973, Dr. Qasim was the Director of the Central Marine Fisheries Research Institute at Cochin. He also held the additional charge of the Central Institute of Fisheries Technology, Cochin for about one year. Here he promoted new lines of work in Fisheries Biology and initiated the development of mussel culture and pearl culture techniques for the first time in India. This work earned him the prestigious award of "Padma Shri."

In January 1974, he took over as the Director of the National Institute of Oceanography (NIO), Goa. In February 1976 he was responsible for the commissioning of the first Oceanographic Research Vessel Ganeshani for NIO. He initiated many new programs on the productivity of the Arabian Sea and Bay of Bengal.

In May 1981, Dr. Qasim was appointed Secretary to the Government of India in the Department of Environment(DOE) and within a year (April 1982) he took over as Secretary of the newly established Department of Ocean Development. He has been responsible for the acquisition of a second Oceanographic Research Vessel "Sagar Sampada" for the Indian Oceanographic research.

Dr. Qasim led India's First Expedition to the Antarctica and successfully organized and guided the other seven expeditions to the frozen continent from 1981 to 1988.

His work on Fisheries Biology, primary productivity, mari-culture particularly mussel and pearl culture, estuarine ecology, environmental pollution and Antarctic research will always be quoted profusely. He has published more than 200 original research papers in national and international journals. For his original work and distinguished services, he won many honors and awards.

He led many delegations of India in several international conferences and meetings.

Dr. Qasim is a Fellow of the Indian National Science Academy, New Delhi, Indian academy of Sciences, Bangalore, National Academy of Sciences, Allahabad, among many others. Under his guidance nearly 40 students obtained their Ph.D. degrees from various universities in India.

He is Editor for several journals and member of the Editorial Boards of many national and international scientific journals. he is an Honorary Professor of several Universities including Madurai Kamaraj University, Madurai in Tamil Nadu, Annamalai University, Chidambaram in Tamil Nadu, Indian Institute of Technology, Madras (Chennai) in Tamil Nadu, Aligarh Muslim University, Aligarh and the Jamia Millia Islamia(University) in Delhi.

Dr. Qasim is blessed with three daughters and lives in New Delhi.

Dr. C. M. Habibullah - Eminent Gastroenterologist

Dr. C. M. Habibullah is known as one of the most eminent Gastroenterologists of the country. He is presently Dean of the Deccan Medical College and Director of Owesi Medical and Research Center located in Hyderabad. Formerly Professor and Head of the Department of Gastroenterology at the Osmania Medical College and Hospital, Hyderabad, Andhra Pradesh.

He is also Chairman, Academic Committee, All India Institute of Medical Sciences(AIIMS), New Delhi and president, National Association of Liver Study Group.

Son of Mr. Ahmed Hussain, he was born on 12th October, 1936 at Chittor(Andhra Pradesh). He took his early education from Chennai. Afterwards, he did his MBBS from Guntur Medical College in 1958 and was awarded Gold Medals in Pathology and Surgery. He was awarded M.D.(General Medicine) in 1963 and D.M.(Gastroenterology) in 1972.

Afterwards, he worked in a number of Hospitals and Medical Colleges in different parts of the country. He is associated with a number of institutions. He is a fellow of National Academy of Medical Sciences, American College of Gastroenterology, and International College of Angiology and also elected member of the Academy of Medical Sciences(Gastroenterology) of the former USSR and nominated member of National Board of Examination and AIIMS.

More than 80 major research papers by him have appeared in scientific journals. More than 106 papers have been presented by him at national and international conferences. His current interest is in liver cell transplantation therapy in cases of acute liver failure and vaccine action program in viral hepatitis cases.

Several scholars have obtained M.D., D.M., and Ph.D. degrees under his guidance and many research projects have been completed. Besides, new drug trials have also been done.

He has two children lives in Hyderabad.

Dr. S. N. A. Rizvi - Authority in Nephrology

Dr. S.N.A. Rizvi is considered one of the few authorities on Nephrology in India. He is a Professor of Medicine, Head of Nephrology and Endocrinology Division, Maulana Azad medical College and associated Hospitals in New Delhi

Son of Hakim S. Sultan Ahmed Rizvi, he was born in a family of renowned for Hikmat, on 1 August 1939 at Amroha(District Moradabad, U.P.). After doing his graduation and postgraduation in Biochemistry, from AMU, he took admission in Medical College. Thereafter completed M.B.B.S. and M.D. degrees in 1969 with gold medal in clinical thesis from Delhi University.

Dr. Rizvi, who has specialized in four fields-Endocrinology including diabetes, Nephrology, Rheumatology and Internal Medicine, is supervising the Dialysis services at Maulana Azad Medical College and LNJP and G.P. Pant Hospitals since 1972. Since then about 24,000 patients have been given free dialysis service. It is the only Hospital in the country which provides free dialysis. it costs about \$600.00 The new dialysis unit is fully equipped with ten machines in non-infection units and two in Australia antigen units. The latter is the only unit available in the country. Dr. Rizvi reduced patient Mortality from 69 percent to 36 percent; Acute renal failure from 69 % to 36 %; and Chronic renal failure from 100 % to 60 % . He reduced Poisoning from 60 % to 4 %.

Dr. S.N.A. Rizvi, who has recently taken over as the head of the newly established Tetanus Department, has been honored with several fellowships and awards- Fellowship of AIID(All India Institute of Infectious Diseases), Bombay(Mumbai) in 1980 for his distinguished work on diabetes; Fellow of the Indian Academy of Medical Sciences, Delhi in 1983; Fellow of the Indian Society of Nephrology in Chandigarh in 1984; Fellow of the Indian Congress in Nutrition(International Nutrition) in 1985. Fellow of the Indian Congress of Allergy and Immunology) in Delhi in 1986; Indian Congress of Physicians Fellowship in 1990 besides a number of national and international awards. He was recently been awarded by the Nobel Laureate Mother Theresa in recognition of his significant contribution to Nephrology. He was invited as a Guest Speaker to speak on several topics by national and international organizations.

He has also been a life member of numerous scientific societies. His 220 papers have so far been published besides contribution of chapters in various books of medical sciences. he has also been the Associate Editor of the Journal of Indian Medical Association(IMA) of Medical Specialties, and member of the Editorial Board of the Journal of Indian Medical Association and also member of the editorial board of the Journal of Indian Society of Nephrology.

He has got special interest in the poor. He spends Sundays at free medical camps in Delhi organized by the medical or voluntary organizations. He has three children and lives in New Delhi.

Ornithology - Study of birds

India has the credit of having eminent ornithologists who are Muslims. Mughal Emperor Jahangir was an expert ornithologist. Jahangir described with care and accuracy various characteristics of animals and birds, their geographical distribution and behavior. The internationally renowned Indian ornithologist, **Salim Ali**, says, "His memoirs are a veritable gazetteer of natural history of the India of his day."

For the first time in the history of ornithology, he noted how sarus cranes mate, brood over their eggs, in turn, and how chicks are hatched and taken care of. He also observed one human quality in this bird: the parents love not only their eggs and chicks but also each other.

In 1958 there was sensation in the world of ornithology when a Russian researcher, A. Ivanov, discovered a portrait of the dodo, a large, non-flying pigeon-like bird which had become extinct about three centuries ago, in a collection of paintings at the Institute of Orientalists of the Soviet Academy of Sciences. There was nothing to identify the painter, but the style was without doubt of Ustad Mansur, the court painter of Jahangir. Now there is other evidence to show that it was the portrait of a Mauritius dodo which a merchant had presented to the Emperor around 1624. So, in the world of ornithology, Jahangir and the dodo made a dramatic reappearance nearly three centuries after they had died.

Salim Ali - Internationally recognized Ornithologist

Salim Moizuddin Abdul Ali, better known as Salim Ali, the bird watcher extraordinary was born on November 12, 1896.

He is a recipient of the J. Paul Getty Wild Life Conservation Prize for his contributions to ornithology, the study of birds. He has won several national honors and awards as well. Surprisingly, Salim Ali has no university degree. He is a world renowned expert on weaver birds. Salim discovered Finn's Baya which was believed to have been extinct for 100 years until he discovered it in the Kumaon hills.

In 1941 he published '**The Book of Indian Birds**' that contained lively descriptions and colored pictures of every species. It made spotting a bird easy for the layman.

In 1948 he began an ambitious project in collaboration with S. Dillon Ripley, an ornithologist of international repute, to bring out in ten volumes *Handbook of the Birds of India and Pakistan*. This work contains all that is known of birds of the subcontinent, their appearance, where they are generally found, their breeding habits, migration and what remains to be studied about them.

Salim Ali has travelled all over India on his bird-watching surveys. It is claimed that there is hardly a place in the country where his heavy rubber shoes have not left their mark.

Professor Mushahid Husain - This is written by Muzammil Husain

Professor Mushahid Husain, Department of Physics, Jamia Millia Islamia, New Delhi, is an eminent scientist. Born in 1952 at Moradabad, UP, Professor Mushahid Husain did his postgraduate degree in Physics from Agra University, Agra (UP) in 1975 and joined Lucknow University for his research work. He worked on "*Effect of chemical combination of X-ray absorption edges*" and was awarded Ph.D. degree in 1982. Same year, he joined Bhopal University as Asstt. Professor, and established a research group there, which later produced couple of Ph.D. students on "*Application of Chemical Shift of X-ray Absorption Edge*" wherein a new method of characterization of material by chemical shift of X-ray absorption edge was developed.

In Aug. 1986, he joined Jamia Millia Islamia New Delhi as a faculty member and set up a Material Science Laboratory in the Department of Physics. Under his able supervision, in a very short duration the same laboratory was identified as one of the centers to undertake research training program in the field of Semiconductor Science and Technology by Regional Network of Science & Technology (International Centre for Theoretical Physics,

Trieste, Italy) and Centre for Science & Technology of Non Aligned and Other Developing Countries, New Delhi. Under this program, a number of scientists from NAM countries (Srilanka, Nepal, Bangladesh etc.) have successfully completed their research training at this laboratory.

He is one of the pioneer workers in the area of research on Amorphous Semiconductors and has been instrumental in creating a group of young scientists to work in the field. In amorphous semiconductor, *his group is studying the structural, electrical, dielectric, thermal and optical properties of amorphous semiconductors, which have extensive use in the solid state devices.* Recently he has taken up research work in conducting polymers and nano materials specifically the carbon nanotubes. He is synthesizing the carbon nanotube by using Electron Cyclotron Resonance Plasma Chemical Vapour Deposition (ECR-CVD), which is a unique method.

Prof. Husain has completed four research projects on amorphous semiconductors funded by University Grants Commission and Department of Science and Technology, New Delhi. He has also conducted two major research projects entitled ECR plasma etching of III-IV group compound materials. In this project his group has developed ECR plasma etching systems. Different gases with different pressure conditions were used for studying the etching of Gallium Arsenide wafers.

He has also studied and developed diffusive cavities for solid-state lasers in one of the esteemed DRDO Project. Recently he has taken up a research project on “Studies of mechanism of new dye laser material and their organic hosts”, funded by DRDO. Here silica gel rod is being prepared by using different dyes, which can be eventually fabricated to laser rods. In addition, a major superconductivity project funded by UGC is continuing since 1989.

Due to his contribution in the semiconductors, the scientific community unanimously elected him the *Vice Chairman of Semiconductor Society of India for two consecutive terms (1999 to 2003)*. He is also holding various positions in different academic societies. In addition, he also held the office of the Vice-President of Indian Physical Society during the session 1990-92. At present he is the secretary of one of the prestigious society i.e. Society for Semiconductor Devices.

He is also the winner of *Young Scientist Award/Project* of Department of Science & Technology, Govt. of India. He is also the winner of *Young Scientist Best Paper Award-1991* from Muslim Association for Advancement of Science (MAAS), Aligarh. He has been awarded the *Associate Membership of Third World Academy of Sciences, Abdus Salam International Centre for Theoretical Physics, Trieste,, Italy* to undertake the research work on the structural aspect of amorphous semiconductor.

Furthermore, he has also delivered a number of invited talks in various International and national forums. In addition, a number of popular talks on All India Radio and National TV Channel (Doordarshan) have also been presented by him. Prof. Husain has also organized a number of National and International Conferences on various aspects of Physics of Materials. He has been Secretary/Joint Secretary of the steering committee of International Workshop on Physics of Semiconductor Devices (IWPSD) since 1997. He was “Organizing Secretary” of “6th International Workshop on Physics of Materials”, held at Jamia Millia Islamia in 1987. He has research collaborations both at National and International levels.

He had been regularly visiting the International Centre for Theoretical Physics, Trieste, Italy to participate in various academic activities at the centre. Prof. Husain has also worked in High Temperature Superconductivity Laboratory at ICTP, Italy. His visits to University of Cambridge, University of Princeton, New Jersey, UNAM, Mexico, SIRIM, Malaysia, National University, Singapore, resulted in scientific collaborations. In 2005, he visited National Tsing Hua University, Hsinchu, Taiwan for collaborative work on Nanotechnology/ Nanomaterials specially carbon nanotubes.

Prof. Husain has about 100 research papers in reputed International Journals to his credit. He has also edited a book on “Advances in Physics of Materials.” Recently, he has published a review article on “**Carbon Nanotubes and its Applications**”

Besides his scientific activities, he enjoys *the Membership of the Board of Studies of different universities in India*. He was the “Elected Member” of the “Academic Council”, Jamia Millia Islamia, from 2000 – 2003. He is the Member of “Board of Governors” of National Institute of Technology, Kurukshetra University.

Due to his vast teaching and research experience he has the honour of being Referee of various National /International journals. Among these, Physica B, X-ray Spectrometry and Central European Journal of Physics are worth mentioning.

He has three children and lives in New Delhi.