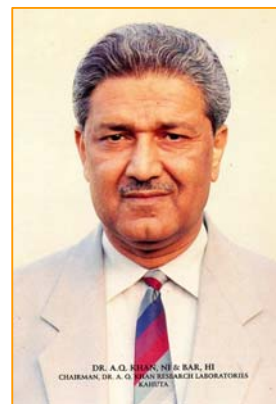


**BIODATA\***  
**OF**  
**DR. A. Q. KHAN**  
**NISHAN-I-IMTIAZ\*\* & BAR,**  
**HILAL-I-IMTIAZ\*\*\***  
Website: <http://www.draqkhan@com.pk>



1. Name: Abdul Quadeer Khan
2. Father's Name: Abdul Ghafoor Khan
3. Date & Place of Birth: 01-04-1936 (Bhopal, India)
4. Nationality: Pakistani
5. Addresses:  
Official: Dr. A. Q. Khan Research Laboratories,  
P.O. Box No. 502, Rawalpindi, Pakistan  
Private: 207, Hill Side Road, E-7, Islamabad
6. Academic Qualifications: B.Sc. (1960, Karachi University)  
Metallurgical Engineering Courses (1962-63, Technical University, Berlin, West Germany)  
M.Sc. (Tech.) (1967, Delft Technological University, Delft, Holland)  
Doctor of Engineering (1972, University of Leuven, Belgium)
7. Honorary Doctorate Degrees
  1. Doctor of Science (D.Sc.) by the University of Karachi on July 25, 1993
  2. Doctor of Science (D. Sc.) by Baqai Medical University, Karachi on December 11, 1998
  3. Doctor of Science (D.Sc.) by Hamdard University, Karachi on March 6, 1999
  4. Doctor of Science (D.Sc.) by Gomal University, D. I. Khan, N.W.F.P, on April 16, 1999
  5. Doctor of Science (D.Sc.) by University of Engineering & Technology, Lahore, on December 9, 2000
  6. Doctor of Science (D.Sc.) by Sir Syed University of Engineering & Technology, Karachi, on March 25, 2001
8. Brief Life Sketch: Attached as Appendix-I
9. Positions Held: Tech. Asstt., Star Engg. Works, Karachi (1956-58)  
Practical Trainee, with Siemens Pak. Engg. (1958-59)  
Inspector of Weights & Measures, Government of Pakistan, Karachi (1959-61)

---

\* Biodata as of March, 2003

\*\* Pakistan's highest Civil Award

\*\*\* Pakistan's second highest Civil Award

Research Assistant to Professor Burgers at Delft Technology University, Holland (1967-68)  
Research Fellow, Leuven University, Belgium (1968-72)  
Senior Metallurgist/Deputy Manager, FDO Engg. Consultants, Amsterdam, Holland (1972-75)

Project Director, Dr. A. Q. Khan Research Laboratories, Kahuta, Rawalpindi (July 31, 1976-October 13, 1998)

Project Director, GIK Institute of Engg. Sciences, Topi, NWFP (1990-to date)

Chairman, Dr. A. Q. Khan Research Laboratories, Kahuta, (October 14, 1998 - March 31, 2001)

Special Adviser to the Chief Executive of Pakistan on Strategic Programme and KRL Affairs (April 1, 2001 – November 29, 2002)

Special Adviser to the Prime Minister of Pakistan on Strategic Programme (November 30, 2002 – January 2004)

10. Medals/Awards/Distinctions received

63 Gold Medals/Awards from various national organisations  
Nishan-i-Imtiaz (on August 14, 1998)  
Nishan-i-Imtiaz (on August 14, 1996)  
Hilal-i-Imtiaz (on August 14, 1989)  
[for further details, consult Appendix-II]

11. Patents:

2 (Appendix-III)

12. Fellowships/Memberships of National and International Scientific Organisations:

List attached as Appendix-IV

13. Expert Assignments in Foreign Countries:

Holland, Belgium

14. Invited Speaker/Key Speaker/ Session Chairman/Leader of Discussions at International Science Conferences/ Director Schools/Colleges/Workshops

About a dozen

15. Editor/Co-Editor:

Topics in Physical Metallurgy (1972)  
Elsevier Publishing Co. Amsterdam.

Proceedings of First International Symposium on Advanced Materials, 18-20 Sept., 1989, Islamabad, Pakistan.

Proceedings of Second International Symposium on Advanced Materials, 15-19 Sept., 1991, Islamabad, Pakistan.

Proceedings of Third International Symposium on Advanced Materials, 20-24 Sept., 1993, Islamabad,

Proceedings of Fourth International Symposium on Advanced Materials, 17-21 Sept., 1995, Islamabad, Pakistan.

Proceedings of First International Conference on Phase Transformations, 1-3 Sept., 1996, Islamabad, Pakistan.

Proceedings of National Conference on Vibrations in Rotating Machinery (NCVRM-96), 7-9 Sept., 1996, Islamabad, Pakistan.

Proceedings of Fifth International Symposium on Advanced Materials, 21-25 Sept., 1997, Islamabad, Pakistan.

Proceedings of Sixth International Symposium on Advanced Materials, 19-23 Sept., 1999, Islamabad, Pakistan.

Proceedings of Seventh International Symposium on Advanced Materials, 17-21 Sept., 2001, Islamabad, Pakistan.

- |     |   |   |
|-----|---|---|
| 16. | Responsibilities with various National and International organisations:       | See Appendix – V  |
| 17. | Support for various Educational and Research Institutes:                      | See Appendix – VI   |
| 18. | Support for the construction/improvement of Mosques/Tombs/Community welfare:  | See Appendix – VII  |
| 19. | Educational/Research institutes dedicated in Dr. A. Q. Khan's name            | See Appendix – VIII   |
| 20. | Buildings/Placed in Dr. A. Q. Khan's name                                     | See Appendix – IX   |
| 21. | Scholarships/Gold Medals in educational institutions in Dr. A. Q. Khan's name | See Appendix – X  |
| 22. | Scientific/Technical Educational contributions:                               | More than 190 Research Papers, list attached as Appendix-XI   |
| 23. | Lectures delivered at International/National Science Conferences:             | More than 100   |
| 24. | Research Activities:  | Keen research interest in Physical Metallurgy, especially structure-properties relationship in high strength alloys, Enrichment technologies, especially enrichment of uranium by ultracentrifuge method. |

**BRIEF LIFE SKETCH  
OF  
DR. A. Q. KHAN, NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ**

As arrow of time moves, the Will of God prevails and is focused on the emergence of humans endowed with exceptional intellectual capabilities and creative abilities. Such are the men who, by their good deeds, fulfill the edict of God, as revealed in the Holy Qurran:

*"I have created man in the best of forms."*  
(Al Qurran; Surah 95; Ayah 04)

By their deeds and actions such persons, though not prophets, demonstrate that they are an extension of the will of the transcendental. These are the people, who are destined to make history in the elevation of nations. Such is the personality of Dr. Abdul Quadeer Khan, who was born in Bhopal on April 1, 1936, which corresponds to the Hijri era 1355, Thursday 15<sup>th</sup> Rajab. As the time has unfolded itself, the Godly qualities enshrined in the words "Quadeer" and "Ghafoor", symbolized in the names of Dr. Abdul Quadeer Khan and his father, Mr. Abdul Ghafoor Khan, have raised the Pakistani nation to new heights in high technology.

After receiving his early education in Bhopal, Dr. Abdul Quadeer Khan obtained the degree of Bachelor of Science in 1960 from the University of Karachi. This was the beginning of the unfolding of his intellectual power. Subsequently, he studied in Berlin, West Germany and achieved high competence through attending several courses in metallurgical engineering. He obtained the degree of Master of Science (Technology) in 1967 from Delft Technological University, Holland, and Doctor of Engineering Degree in 1972 form the University of Leuven, Belgium. The restless soul of Dr. Abdul Quadeer Khan took him to several laboratories in Europe including Uranium Enrichment Plant in Holland. It was the essence of his being sharpened by high scholastic achievements in metallurgical and nuclear science that his will and essence at all times remained directed towards the welfare of Pakistan. In 1976, he joined the Engineering Research Laboratories (ERL) in Pakistan and set up an uranium enrichment industrial plant. As a tribute to his services for the security of Pakistan on May 1, 1981, the then President of Pakistan, General Mohammed Zia-ul-Haq renamed the Engineering Research Laboratories, Kahuta, as, Dr. Abdul Quadeer Khan Research Laboratories (KRL). These laboratories were equipped from nothing to something focusing on enrichment of Uranium for peaceful application of nuclear technology. Over the years, the laboratories became a focal point for a large number of scientists, engineers and technologists which Dr. Abdul Quadeer Khan gathered around himself and guided them to the tasks which have led to unparallel advances in science and technology. This was done under very challenging and difficult circumstances. It was only his courage, devotion, determination and persistence, which earned success for him, his colleagues and indeed for the nation.

The scientific contributions of Dr. Khan have been recognized in several ways. As an active scientist and technologist, he has published 190 scientific research papers in international journals of high repute. He has been editor of a large number of books on metallurgy, advanced materials and phase transformation. His academic and scholastic activities have attracted the attention of number of western countries where he has delivered more than 100 lectures. His work on Industrial Uranium Enrichment Plant for peaceful application of nuclear technology has resulted in a breakthrough in the field of metallurgy & materials science.

It is entirely due to his efforts that the process of enrichment of Uranium was successfully completed in Pakistan. This breakthrough ultimately resulted in the historic explosion of six nuclear bombs on May 28 and May 30, 1998. Not only this but a significant development was also made with the successful test firing of Intermediate Range Ballistic Missiles, Ghauri I, on April 6, 1998 and Ghauri II on April 14, 1999.

There are numerous contributions of Dr. Khan, which have strengthened the defence capability of Pakistan. Those, among others, include: manufacturing of sophisticated equipment like Surface-to-Air shoulder-fired anti-aircraft ANZA (MK-I & MK-II) and Baktar Shikan anti tank guided missiles for the Armed Forces.

Dr. Khan has received honorary degrees of Doctor of Science from the University of Karachi in 1993, Doctor of Science from Baqai Medical University on December 11, 1998, Doctor of Science from Hamdard University, Karachi, in March 6, 1999, Doctor of Science from Gomal University, Dera Ismail Khan, N.W.F.P. on April 16, 1999, Doctor of Science from the University of Engineering & Technology, Lahore on December 9, 2000 and Doctor of Science from the Sir Syed University of Engineering & Technology, Karachi on March 25, 2001. Apart from his eminent contribution in the field of Science and Technology, Dr. Khan is an avid supporter of Science and Technology education in Pakistan. As the Project Director of GIK Institute of Science and Technology, he has invested his energies in developing the Institute into an exemplary high technology institution. For his important and eminent contributions in the field of science and technology, the President, Islamic Republic of Pakistan conferred upon Dr. Khan the award of Nishan-i-Imtiaz on 14 August, 1996 and 14 August, 1998. He is also a recipient of Hilal-i-Imtiaz. Dr. Khan is the only Pakistani to have received the highest civil award of "Nishan-i-Imtiaz" twice.

The list of his contribution and achievement is far too long to be mentioned in this short citation. He is a person imbued with the spirit of serving the cause of Pakistan and Muslim Ummah through his able researches, high acumen, intellectual robustness and unwavering devotion. So numerous are his activities that every segment of society has praised him in different forms. He has been awarded 63 gold medals by various national institutions and organizations. He was also presented with 3 gold crowns. Dr. Khan is a Fellow of Kazakh National Academy of Sciences, the first Asian scientist with this honour, Elected Fellow of the Islamic Academy of Sciences and Honorary Member of the Korean Academy of Science & Technology. He has also been elected as the Chairman of the Islamic Development Bank's Advisory Panel on Science and Technology in the Panel's first ever meeting, held at the IDB's headquarters in Jeddah, Saudi Arabia, on October 17, 2000. Being a Fellow of Pakistan Academy of Sciences, he was elected unopposed the President of the Academy's in 1997—the position that he still occupies. Besides, he is a member of a large number of national and international professional organizations, which include Pakistan Institute of Metallurgical Engineers; Pakistan Institute of Engineers; and Institute of Central and West Asian Studies. He is a Member of the Institute of Materials, London; American Society of Metal (ASM); The Metallurgical Society of the American Institute of Metallurgical Mining and Petroleum Engineers (TMS); Canadian Institute of Metals (CIM) and Japan Institute of Metals (JIM).

As an ardent supporter of higher education, he sits on the Boards of Governors and Syndicates of numerous universities and institutes. He is a Member of the Executive Committee GIK Institute of Engineering and Technology, Topi; Member, Board of Governors, Hamdard University; Member, Board of Governors, Sir Syed University of Engineering and Technology; Member Syndicate, Quaid-i-Azam University, Islamabad; and Member, Board of Governors, International Islamic University, Islamabad, among others.

He has contributed immensely to the establishment of educational and research institutes in Pakistan. These include several colleges, schools, Institutes and academies. So wide are the applications of his activities that his contributions extend to the construction of 12 mosques, 1 tomb, a number of dispensaries and community health centers.

It is rare that a person in single lifetime accomplishes so much. This is done only by men who are endowed with special abilities by God and who prepare themselves through hard work and devotion to fulfill the mission of serving mankind.

ہزاروں سال زخمس اپنی بے نوری پہ روتی ہے  
بڑی مشکل سے ہوتا ہے جس میں دیدہ و پیرا

## MEDALS & AWARDS

### **A: Pakistan Civil Awards**

1. Conferred Hilal-i-Imtiaz by the Government of Pakistan on 14-8-1989 and decorated by the President of Pakistan on 23-3-1990
2. Conferred Nishan-i-Imtiaz by the Government of Pakistan on 14-8-1996 and decorated by the President of Pakistan on 25-3-1997
3. Conferred Nishan-i-Imtiaz by the Government of Pakistan on 14-8-1998 for the second time, thus making Dr. Khan the only Pakistani to have been decorated with the highest civil award twice. The Award was decorated by the President of Pakistan on 23-3-1999

### **B: Gold Medals/Crown**

1. Awarded Gold Medal by the citizens of Kahuta in March 1984.
2. Awarded Justice Hamood-Ur-Rehman Gold Medal for the year 1984.
3. Awarded medal of honour (Gold) by the Federation of Pakistan Chambers of Commerce & Industry, Karachi in Nov. 1985.
4. Awarded Gold Medal by the Lions Club, Mandi Bahauddin, Gujrat in December 1985.
5. Awarded Diamond Jubilee Gold Medal by Pakistan Engineering Congress, Lahore in November, 1987.
6. Awarded Gold Medal by Pakistan Institute of Metallurgical Engineers, Lahore, for the year 1988.
7. Awarded Gold Medal by Pakistan Institute of Metallurgical Engineers, Lahore, for the year 1989.
8. Awarded The Open, Engineering & Technology Gold Medal of the Pakistan Academy of Sciences for 1989, by the Pakistan Academy of Sciences.
9. Awarded Gold Medal by Markazi Anjeman-e-Shehrian Rawalpindi (Citizens of Rawalpindi) on June 1, 1990.
10. Awarded Gold Medal (Man of the Nation Award 1990) by Pakistan Institute of National Affairs, Lahore on September 9, 1990.
11. Awarded Abbasi Shaheed Gold Medal at Abbasi Shaheed Memorial Hospital, Nazimabad, Karachi on January 02, 1991.
12. Awarded Gold Medal by the Abbottabad District Bar Association on June 21, 1997.
13. Gold Medal Award from the IIm-o-Sanat Trust on October 18, 1997.

14. Awarded "Al-Basel Gold Medal" from Ministry of Higher Education, Syrian Arab Republic, November 3, 1997.
15. Awarded Pakistan Engineering Congress Gold Medal by the President of Pakistan Mr. Rafiq Tarrar in Lahore, on May 12, 1998.
16. Awarded Gold Medal from Old Students Association of Karachi University (OSAKU), by Lt. Gen (Retd) Moin uddin Haider, Governor of Sindh, in Karachi on July 29, 1998.
17. Awarded Gold Medal by Messrs Alcop Ltd, at a function organised by OSAKU, in Karachi on July 29, 1998.
18. Awarded Gold Medal by Karachi Gymkhana at a function organised by OSAKU, in Karachi on July 29, 1998.
19. Awarded Gold Medal by Mr. Manzoor Roofi at a function of Majlis-e-Mussanefeen in Karachi on August 18,1998.
20. Awarded Gold Medal by Mr. S. M. Muneer at a function of Majlis-e-Mussanefeen in Karachi on August 18,1998.
21. Awarded Gold Medal by Sheikh Mohammad Sadiq at a function of Majlis-e-Mussanefeen in Karachi on August 18,1998.
22. Awarded Gold Medal by Mr. Pervaiz Akhtar at a function of Majlis-e-Mussanefeen in Karachi on August 18,1998.
23. Awarded Gold Medal by the President of Pakistan, Mr. Mohammad Rafiq Tarar at a function of Pakistan Academy of Sciences in Islamabad on December 8,1998.
24. Presented Gold Crown by the President of Pakistan Mr. Mohammad Rafiq Tarar in a reception hosted by Pakistan Polytechnic Institute on December 30, 1998, Lahore.
25. Gold Medal by the Governor of Sind, Lt Gen. (Retd) Moin-uddin Haider, at a reception/dinner hosted by the Dewan Mushtaq Group on December 31, 1998, Karachi.
26. Gold Medal by Pakistan Intellectuals Forum, at a reception on February 16, 1998, in Islamabad.
27. Gold Medal by Pakistan Heating, Ventilation, Air-Conditioning & Refrigeration (HVACR) Society on March 3, 1999, in Islamabad.
28. Pakistan Silk & Rayon Mills Association Gold Medal, presented by the President of Pakistan Mr. Mohammad Rafiq Tarar at a reception on March 7, 1998, in Karachi.
29. All Pakistan Textile Mills Association (APTMA) Gold Medal presented by President of Pakistan Mr. Mohammad Rafiq Tarar on March 13, 1999.
30. Gold Medal awarded for the "Vacuumist of the Century" by the Pakistan Vacuum Society, on May 5, 2000.

31. Gold Medal by the Vice Chancellor, Fatima Jinnah Women University, Rawalpindi in connection with the celebration of Yaum-e-Takbeer, on May 22, 1999.
32. Gold Medal by Mr. Shahid Rasheed Butt, Chairman, Islamabad Chamber of Commerce & Industry (ICCI), Founder Group, on May 23, 1999.
33. Gold medal by Mr. Dost Muhammad Khan in connection with the celebration of Yaum-e-Takbeer in Islamabad, on May 31, 1999.
34. Gold medal by Model Town Citizen Forum, Islamabad in connection with the celebration of Yaum-e-Takbeer in Islamabad, on June 2, 1999.
35. Gold Crown by the President of Markazi New Sarafa Bazar Union, Rawalpindi, on July 11, 1999.
36. Gold Medal by Markazi Sarafa Union, Rawalpindi, on July 11, 1999.
37. Gold Medal awarded at the 3<sup>rd</sup> International Seminar on Engineering and Metallurgy (SEMM 200), held at Karachi on November 13, 2000.
38. Gold Medal awarded by Mr. S. M. Farooq, Chief Executive M/s Arshad Amjad & Abid (Pvt) Ltd., Karachi, on May 26, 2001
39. Gold Medal awarded by Mrs. Surriya Farooq, Director, M/s Arshad Amjad & Abid (Pvt) Ltd., Karachi, on May 26, 2001
40. Gold Medal awarded by Mr. S. M. Muneer, Chairman, Din Group of Industries, Karachi, on May 26, 2001
41. Gold Medal awarded by Mr. Dewan Yousuf Farooque, Group Managing Director, Dewan Farooque Motors Ltd, Karachi, on May 26, 2001
42. Gold Medal awarded by Chiniot Anjuman Islamia, Cavish Court, Karachi, on May 26, 2001
43. Gold Medal awarded by Mr. Yasin Malik, Chairman, Hilton Pharma (Pvt) Ltd., Karachi, on May 26, 2001
44. Gold Medal awarded by Mr. Khalil Ahmed Nanitalwala, Chairman, M/sTouch Me House, Karachi, on May 26, 2001
45. Gold Medal awarded by Mr. S. H. A. Naqvi, Chairman, Mash (Pvt.) Ltd., Karachi, on May 26, 2001
46. Gold Crown awarded by Sartaj Welfare Trust, Gujranwala on June 2, 2001.
47. Gold Medal awarded by the Rawalpindi Press Club on July 8, 2001.
48. Gold Medal awarded by Pakistan Institute of Materials Engineers, Lahore, on July 21, 2001.
49. Gold Medal awarded by Haji Abdullah Haroon Muslim Gymkhana, Karachi, on October 13, 2001.
50. Gold Medal awarded by Islamia College, Peshawar, on May 30, 2002.

51. Gold Medal awarded by the Pakistan Society Social Club, Muscat, Oman, on August 23, 2002.
52. Gold Medal awarded by the D. J. College Alumini Foundation, Karachi, on September 13, 2002.
53. Gold Medal by Majlis Farogh-e-Urdu Adab, Doha-Qatar, 24<sup>th</sup> October, 2002.
54. Gold Medal by Pakistan Engineers Forums-Qatar, Doha-Qatar, 25<sup>th</sup> October, 2002.
55. Gold Medal by Engr. Muhammad Anwar Qamar, Al-Madinah Al Munawwarah, Kingdom of Saudi Arabia, 27<sup>th</sup> October, 2002.
56. Gold Medal awarded by Institute of Cost and Management Accountants of Pakistan (ICMAP), Karachi, 2<sup>nd</sup> November, 2002.
57. Gold Medal by the Pakistan Academy of Sciences, Islamabad, on the Celebration Day of its Golden Jubilee, 14 December 2002.
58. Gold Medal by the Pakistan Academy of Medical Sciences, Lahore, 08 January 2003.
59. Gold Medal by Orient Advertising (Pvt.) Limited, Karachi, 28 March 2003.
60. Gold Medal by Defence Residents Society, Karachi, 28 March 2003.
61. Cosmo Gold Medallion by Rotary Club of Islamabad Cosmopolitan, Islamabad, 14 June 2003.
62. Gold Medal by Kiryana Merchant Association of Jodia Bazar, Karachi, 18 August, 2003
63. Gold Medal by the University of Central Punjab, Lahore, 23 September, 2003

## LIST OF PATENTS

1. A Method of Synthesize Surface Pores in Metals and Metal Matrix Composites using Energy Beams, U.K. Patents No. GB 2275437, Nov. 1995.
2. Energy Beams Synthesize Metal-Carbide Composite Surfaces on Mild Steel Substrates, U.K. Patents No. GB 2285633, 1997.

## **FELLOWSHIPS & MEMBERSHIPS**

### **FELLOWSHIP**

1. Pakistan Academy of Sciences.
2. Kazakh National Academy of Sciences
3. Pakistan Institute of Metallurgical Engineers.
4. Pakistan Institute of Engineers.
5. Institute of Central and West Asian Studies.

### **MEMBERSHIP**

1. Chartered Engineer; Member, The Institute of Materials, London.
2. American Society of Metals (ASM).
3. The Metallurgical Society of the American Institute of Met., Min. and Petr. Engineers (TMS).
4. Canadian Institute of Metals (CIM).
5. Japan Institute of Metals (JIM).

**DR. A. Q. KHAN (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)  
ON BOARDS OF DIRECTORS/TRUSTEES AND SYNDICATE  
OF ACADEMIC AND SCIENTIFIC INSTITUTIONS/ORGANIZATIONS**

1.	Former Chairman	Dr. A. Q. Khan Research Laboratories Kahuta
2.	Chairman	IDB* - IIU** Islamic Educational Wakaf, Pakistan
3.	Chairman	Governing Body, Institute of Behavioural Sciences, Karachi
4.	Chairman	Board of Trustees, Pakistan Institute of Science, Technology and Economics, Karachi
5.	Chairman	Executive Committee, Dawood College of Engineering and Technology, Karachi
6.	Chairman (Lifetime)	Dr. A. Q. Khan Institute of High technology Trust, Karachi
7.	President (Lifetime)	Society for the Promotion of Technical Education, Rawalpindi.
8.	President (Lifetime)	Board of Directors, Dr. A. Q. Khan Institute of Technology, Mianwali
9.	President (Lifetime)	Board of Directors, Dr. A. Q. Khan Girls College for Computer Science, Rawalpindi
10.	President	Governing Council, Dr. A. Q. Khan Institute of Biotechnology & Genetic Engineering, Karachi University, Karachi
11.	President	Society for the Advancement of Community Health, Education and Training, (SACHET) Pakistan, Islamabad
12.	Project Director	GIK Institute of Engineering Sciences and Technology, Topi, NWFP
13.	Patron-in-Chief	Dr. A. Q. Khan Institute of Technology & Management, Islamabad
14.	Patron-in-Chief	Sir Syed Deaf Association, Islamabad.
15.	Patron	Institute of Management and Computer Sciences, P.E.C.H. Society, Karachi.
16.	Patron	Al-Shifa Eye Hospital, Rawalpindi
17.	Patron	'Sukhi Ghar' Family Health Hospital, Islamabad
18.	Fellow	Pakistan Academy of Sciences
19.	Fellow	Kazakh Academy of Sciences
20.	Fellow	Islamic Academy of Sciences
21.	Founding Member	Foundation for the Advancement of Engineering Sciences and Advanced Technologies, Islamabad
22.	Founding Member	Society for the Advancement of Engineering Sciences and Technology in Pakistan (SOPREST), Islamabad
23.	Member	IDB's Advisory Panel on Science & Technology
24.	Member	Executive Committee, GIK Institute of Engineering Sciences and Technology, Topi, NWFP
25.	Member	Board of Governors, Hamdard University, Karachi

---

\* Islamic Development Bank

\*\* International Islamic University

26. Member Board of Governors, Sir Syed University of Engineering and Technology, Karachi
27. Member Syndicate, Quaid-i-Azam University, Islamabad
28. Member Board of Governors, Institute of Materials Sciences and Research, Pakistan Steel, Karachi
29. Member Board of Governors, Engineering & Management Foundation, Lahore.
30. Member Board of Governors, International Islamic University, Islamabad.
31. Member Board of Governors, Institute of Management and Leadership, Lahore
32. Member Managing Body, Pakistan Red Crescent Society.
32. Member Board of Governors, COMSATS Institute of Information Technology (CIIT), Islamabad.
33. Member Institute of Textile Technology & Management (ITTM), Karachi.
34. Member Syndicate, University of Balochistan, Quetta.
35. Member Senate, University of Balochistan, Quetta.
36. Member Board of Governors, Dawood College of Engineering and Technology, Karachi.
37. Honorary Member Korean Academy of Science & Technology

**DR. A. Q. KHAN'S (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)  
SUBSTANTIAL SUPPORT FOR THE ESTABLISHMENT  
OF EDUCATIONAL AND RESEARCH INSTITUTES**

1. GIK Institute, Topi, NWFP.
2. Pakistan Academy of Sciences, Islamabad.
3. Dr. A. Q. Khan Institute of Bio Technology & Genetic Engineering, Karachi University, Karachi.
4. Institute of Behavioural Science, Karachi.
5. Pakistan Institute of Science, Technology and Economics, Karachi.
6. Kahuta Institute of Technology, Kahuta.
7. Dr. A. Q. Khan Institute of Technology, Mianwali.
8. KRL Model College, Kahuta.
9. Kahuta Boys Degree College, Kahuta.
10. Govt. Girls Degree College, Kahuta.
11. Govt. Boys Primary School, Nathot (Kahuta).
12. Govt. Boys Middle School, Nathot (Kahuta).
13. Govt. Girls Primary School, Chhani Awan (Kahuta).
14. Govt. Boys High School, Kahuta.
15. Cadet College, Kallar Kahar, Punjab.
16. Pearl Valley Public School, Rawalakot, AJ&K.
17. Islamabad Foreign Women Association (IFWA) Middle School, Nurpur Shahaan, Islamabad.
18. Computer Training Centre, Islamabad Foreign Women Association (IFWA) Community Centre, Islamabad
19. Quaid-e-Azam University, Islamabad.
20. Gomal University, D. I. Khan.
21. Dr. A. Q. Khan Girls College for Computer Science, Rawalpindi.
22. Dr. A. Q. Khan Ophthalmic Research Center, Al-Shifa Trust Eye Hospital, Rawalpindi.
23. Zulaikha-Quadeer Science Block, Fatima Jinnah Women University, Rawalpindi.
24. Al-Markaz Al-Islami, H-8/4, Islamabad.

**DR. A. Q. KHAN'S (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)  
SUBSTANTIAL FINANCIAL SUPPORT FOR THE  
CONSTRUCTION/IMPROVEMENT OF:**

**MOSQUES**

1. Mosques near the Tomb of Sultan Shahabuddin Mohammad Ghauri, Sohawa.
2. Mosque at Piniali.
3. Mosque at Lehtrar.
4. Mosque near Government Degree college, Kahuta (Nai Abadi).
5. Mosque at Humak.
6. Mosque Sector E-7, Islamabad.
7. Mosque Sector F-8/2, Islamabad.
8. Mosque Sector F-6/3, Islamabad.
9. Mosque Super Market, F-6, Islamabad.
10. Mosque at Bani Gala, Islamabad.
11. Madina Masjid (KRL Pindi Office).
12. Mosque at National Institute of Science and Technical Education (NISTE), H-8, Islamabad.

**TOMBS**

1. Tomb Sultan Shahabuddin Mohammad Ghauri, Sohawa.

**GAS/WATER SUPPLY SCHEMES**

1. Water Supply at Sumbalgah.
2. Sui Gas Supply at Sumbalgah.
3. Sui Gas Kahuta

**DISPENSARIES / COMMUNITY HEALTH PROJECTS ETC.**

1. Establishment of Project Office of the SACHET (Society for the Advancement of Community Health, Education and Training) Pakistan, Islamabad.
2. SACHET Clinic, a Basic Health Unit (BHU), Shahdara, Islamabad.
3. SACHET Clinic, Paniali, Islamabad
4. SACHET Clinic, Japan Road, Sihala, Islamabad
5. SACHET Clinic, Pathar Garh, Hasanabdal

**NGOS, COMMUNITY WELFARE PROJECTS ETC.**

1. Headquarters of the Business & Professional Women's Organisation, Rawalpindi-Islamabad
2. Headquarters of the Sir Syed Memorial Society, Islamabad
3. Sukhi Ghar Family Health Hospital — a project of the Family Planning Association of Pakistan
4. Sahil, Islamabad
5. Hawa Associates, Islamabad
6. Pakistan Red Crescent Society, Islamabad

**LIST OF EDUCATIONAL/RESEARCH INSTITUTES DEDICATED TO  
DR. A. Q. KHAN (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)**

<u>Name of the Institute</u>	<u>Date of Establishment</u>
1. Dr. A. Q. Khan Research Laboratories, Kahuta (KRL)	Established in 1976 as Engineering Research Laboratories and renamed as Dr. A. Q. Khan Research Laboratories by the then President of Pakistan, Gen. Muhammad Zia-ul-Haq in 1981.
2. Dr. A. Q. Khan Institute of Technology (KIT), Mianwali	Foundation stone laid on December 14, 1998.
3. Dr. A. Q. Khan Ophthalmic Research Center, Al-Shifa Trust Eye Hospital, Rawalpindi	Inaugurated by the President of Pakistan, Mr. Muhammad Rafiq Tarar, on March 4, 1999.
4. Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering, Karachi University, Karachi	Foundation stone laid by the President of Pakistan, Mr. Muhammad Rafiq Tarar, on March 6, 1999.
5. Zuleikha – Quadeer Science Block, Fatima Jinnah Women University, Rawalpindi	Named after Dr. A. Q. Khan and his mother
6. Dr. A. Q. Khan Girls College for Computer Science, Rawalpindi	Foundation Stone laid by the Federal Minister for Labour & Overseas Pakistanis, Sheikh Rasheed Ahmad and Dr. A. Q. Khan on July 11, 1999
7. Dr. A. Q. Khan College for Science & Technology, Rawalpindi	Foundation Stone laid by Dr. A. Q. Khan at Sifari Villas, Rawalpindi, on July 28, 1999
8. Dr. A. Q. Khan Academy of Science, Gulberg, Faisalabad	
9. Dr. A. Q. Khan Hall & Gymnasium, Pearl Valley Public School, Rawalakot, Azad Jammu & Kashmir	Inaugurated by Dr. A. Q. Khan on June 26, 2000
10. Dr. A. Q. Khan Block, Al-Markaz Al-Islami, H-8/4, Islamabad	Foundation Stone laid by Dr. A. Q. Khan on October 15, 2000
11. Dr. A. Q. Khan Center for Software Engineering, Islamabad	A project of COMSATS Institute of Technology, Islamabad (under construction)
12. Dr. A. Q. Khan Institute of Computer Sciences & Information Technology, Kahuta	Inaugurated in January 2001

13. Dr. Abdul Qaudeer Khan Institute for Developing Engineering Technologies, Lahore  
A project of Institute of Leadership and Management, Lahore (under construction)
14. Dr. A. Q. Khan Institute of Technology & Management, Islamabad  
Inaugurated on August 14, 2001
15. Dr. A. Q. Khan Block, D.J. Sindh Government Science College, Karachi  
Inaugurated by Dr. A. Q. Khan on April 23, 2002

**LIST OF BUILDINGS/PLACES DEDICATED TO  
DR. A. Q. KHAN (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)**

<u>Name of the Institute</u>	<u>Date of Establishment</u>
1. Dr. A. Q. Khan Auditorium	Pakistan Academy of Sciences, Islamabad
2. Dr. A. Q. Khan Hall/Gymnasium	Pearl Valley Public School, Rawlakot, Azad Jammu & Kashmir.
3. Al-Qaudeer Civic Center	Commercial Area of Sector F-10 (F-10 Markaz), Islamabad named after the successful nuclear explosions on 1998.
4. Dr. A. Q. Khan Auditorium	The Sir Syed Memorial Society, Islamabad, Inaugurated on January 13, 2001

**SCHOLARSHIPS/GOLD MEDALS IN EDUCATIONAL INSTITUTIONS  
IN THE NAME OF DR. A. Q. KHAN (NISHAN-I-IMTIAZ & BAR, HILAL-I-IMTIAZ)**

<u>Scholarships/Gold Medals</u>	<u>Name of the Institute</u>
1. Dr. Abdul Quadeer Khan Scholarship in Physics	Quaid-I-Azam University, Islamabad
2. Dr. Abdul Quadeer Khan Gold Medal for best student	University of Engineering & Technology, Taxila
3. Dr. Abdul Quadeer Khan Gold Medal for the best all-round performance in all the faculties	Ghulam Ishaq Khan Institute of Engineering Sciences & Technology, Topi, N.W.F.P.
4. Dr. Abdul Quadeer Khan Gold Medal	Sir Syed University, Karachi
5. Dr. Abdul Quadeer Khan Scholarship	Sir Syed University, Karachi
6. Orient Dr. Abdul Quadeer Khan Gold Medal in Physics	All Universities of Pakistan (sponsored by Orient Advertising (Pvt) Ltd.)
7. Dr. A. Q. Khan Gold Medal for the best students in Physics, Chemistry and Mathematics	Quaid-I-Azam University (sponsored by Islamabad Chamber of Commerce & Industries)
8. Dr. Abdul Quadeer Khan Gold Medal	GIK Institute of Engineering Sciences & Technology, Topi, N.W.F.P. (sponsored by Chiniot Anjuman Islamia)
9. Dr. Abdul Quadeer Khan Scholarship	Sir Syed University of Engineering & Technology, Karachi
10. Dr. Abdul Quadeer Khan Gold Medal	Sir Syed University of Engineering & Technology, Karachi
11. Dr. A. Q. Khan Talent Award	Parents Teachers Association, Islamabad Model College for Boys, F-8/4, Islamabad.
12. Dr. A. Q. Khan Gold Medal	Information Technology Institute, College of Advanced Technologies, Defence, Lahore.
13. Dr. A. Q. Khan Scholarship	Pakistan Foreign Office Women's Association, Ministry of Foreign Affairs, Islamabad.

**SCIENTIFIC/TECHNICAL/EDUCATIONAL CONTRIBUTIONS:**

1. Experiments with a small cupola furnace, Report Tech. Univ. Delft, Department of Metallurgy, 1965.
2. The influence of eutectic cell size on austenite to pearlite transformation in cast iron, Report Delft, 1965.
3. The development of aluminium-lithium alloys, Report, Delft, 1965.
4. Measurement of Curie Point of Nickel, Report, Delft, 1965.
5. Direction-dependence of young's modulus in cold rolled and recrystallized Cu and Cu-Be alloys, Report, Delft, 1966.
6. Initial susceptibility of Ni under applied stress, Report, Delft, 1966.
7. Anisotropy in cold rolled copper, Report, Delft, 1966.
8. The influence of trace elements on precipitation in Al-4%Cu alloys, Thesis M.Sc. Tech. Delft, June 1967.
9. Remarks on the application of thermomechanical treatments to Al-bronzes, Report No. 6, Dept. of Metallurgy, Univ. of Leuven, 1968.
10. Crystal and microstructure of Cu-Al-Zn and Cu-Al-Zn and Cu-Al-Fe  $\beta$ -martensites, Presented at the Annual Meeting of Societe Belge de Microscopie Electronique at Gent, 29th Nov. 1969, with Prof. L. Delaey.
11. Strengthening of Cu-Al  $\beta$ -martensite by grain refinement, Trans. Ind. Inst. of Metals, December 1970, with L. Delaey.
12. The effect of grain size on the strength of Cu-Al  $\beta$ -martensite, Zeitschrift f. Metallkunde, December 1969, with L. Delaey.
13. The martensite plate size dependence of yield strength of Cu-Al-Zn martensite, Scripta Metallurgica, December 1970, with L. Delaey.
14. The mechanical properties of copper-aluminium bronzes, Proc. 2nd. Intern. Conf. on the Strength of Metals and Alloys, California, 1970, ASM Cleveland, Ohio, with L. Delaey, H.Tas, I. Lefever, L. Vos, A. Deruyttere, and P. De Meester.
15. On the binding energy between a germanium atom and a vacancy in an Al-4%Cu alloy, Scripta Met., April 1971.
16. The effect of morphology on the strength of copper-based martensites, Ph.D. Thesis, Faculty of Applied Sciences, University of Leuven, Leuven, Belgium, March 1972.
17. Comments on vacancy-germanium binding energy in aluminium matrix, Scripta Met. April 1972.
18. Additional-Element effect on the ageing phenomena in Al-4%Cu alloys, Trans. J.I.M., May 1972.
19. On the appearance of long period superlattice structures in copper-aluminium alloys, Eastern Metals Review, May 1972.
20. "Topics in Physical Metallurgy" - The Burgers Festschrift - Edited by A.Q. Khan and M.J. Brabers, Elsevier F]Publishing Co., Amsterdam, August 1972. (contains ca. 35 articles & 460 pages).

21. The role of the grain boundaries in the stress-induced transformation of copper-base alloys, Proc. ASM-CDA Conference on Copper, Cleveland, Ohio, Oct.1972, with L. Delaey and H.Tas.
22. Stress-induced phase transformations and enhanced plasticity in Cu-Al and Cu-Al-Zn martensites, J. Materials Science, December, 1972, with G.V.d. Perre and L. Delaey.
23. 'Professor Dr. W.G. Burgers - A bibliography', in 'Topics in Physical Metallurgy' (Eds. A.Q. Khan and M.J. Brabers). , Elsevier, Amsterdam, 1972.
24. 'The plastic deformation of metallic crystals - Fifty years of evolution' in 'Topics in Physical Metallurgy' Elsevier Publishing Co., Amsterdam, 1972, with J.V.d. Planke.
25. Dynamic recovery and recrystallization in iron-containing aluminium bronzes, Transformations Japan Institute of Metals, Volume 15, No. 2 (March 1974).
26. Creating a complete metallurgical engineer, Metals and Materials, April 1974.
27. An-X-ray diffraction study of stacking sequences, stacking faults and distortions in copper-based martensites - Application to Cu-Al and Cu-Al-Zn martensites, J. Applied Cryst., published with G.V.d. Perre, L. Delaey. H. Tas, W. Vandermeulen & A. Deruyttere, (1974).
28. The Hall-Petch relationship in copper-based martensites, Materials Science & Engineering, vol.15, (1974), with M.J. Brabers and L. Delaey, pp.263-274.
29. The application and interpretation of the 'time law' to the growth of grain size and martensite plate thickness, Journal of Materials Science, vol.9, (Aug.1974), pp. 1290-1296.
30. Mechanical Properties of Maraging Steels, Metal and Materials, April, 1985.
31. The spread of Nuclear Weapons among nations: Militarization or Development, pp. 417-430. (Ref. Nuclear War Nuclear Proliferation and their consequences "Proceedings of the Vth International Colloquium organised by the Group De Bellerive Geneva 27-29, June 1985, Edited by: Sadruddin Aga Khan, Published by Clarendon Press-Oxford 1986).
32. Microstructural changes during Retrogression and reaging in AA-7075 - A TEM study, Proceedings, Aluminium Technology '86, Section B, Institute of Metals (1986).
33. Chromium Determination in Steel using atomic Absorption spectrophotometer- problems and their remedies, Pak Steel Journal, Vol 26, Jan-Mar. 1986.
34. Flow Induced Vibrations in Gas Tube Assembly of Centrifuges, Journal of Nuclear Science and technology, 23(9), (Sept. 1986), pp. 819-827.
35. Dilation investigation of  $\alpha \rightarrow \gamma$  transformation in 18% Ni maraging steels, Proceedings of The International Conf. on Martensitic Transformations (1986), The Japan Institute of Metals, pp.560-565.
36. Electrical and magnetic properties of double-aged 18% nickel maraging steels, Proceedings of The International Conf. on Martensitic Transformations (1986), The Japan Institute of Metals, pp. 572-577.
37. Physical and mechanical properties of ultra-high strength 18% nickel maraging steel, vol.28, (Jul-Sept./Oct-Dec. 1986). Pakistan Steel Journal, pp.87-90.
38. Some remarks on the hardness and yield strength of aluminum alloy 7075 as a function of retrogression time, vol. 18-A,, Feb. 1987, Metallurgical Transactions, pp.350-354.
39. Hot stage electron microscopy of rapidly solidified Cu-Al-Ni  $\beta$ -phase alloys, Proc. 2nd Beijing Conf. and Exhib. on Instrum. Analysis, 1987.
40. Lattice imaging of  $\epsilon$  - phase in annealed AA-7075, Proc. 2nd Beijing Conf. and Exhib. on Instrum. Analysis, 1987.

41. Hydrogen embrittlement in 350-grade maraging steel due to nickle-plating, vol.30, Apr-Jun. 1987, Pakistan Steel Journal, pp. 45-47.
42. Short Communication Microscopic determination of Austenite in 18% Ni maraging steel, Metallography, vol 20, Elsevier Science Publishing Co. Inc., 1987, pp. 377-383.
43. Influence of carbide precipitates on the mechanical properties of a maraging steel, vol.32, Oct-Dec. 1987, Pakistan Steel Journal, pp. 40-41.
44. Some practical aspects of balancing an ultra-centrifuge rotor, Journal of Nuclear Science and Technology, 24(II), (Nov. 1987), pp. 951-959.
45. Flow turning, grinding and hydro forming of maraging steel tubes, Sheet Metal Industries, London, Jan. 1988, pp. 32-38.
46. Tension-tension fatigue crack propagation in high strength, low alloy steel sheets vol. 4, Materials Science and Technology, Jan. 1988, pp. 16-21.
47. Phase transformations in rapidly solidified Cu-Al-Ni  $\beta$ -phase alloys, Scripta Metallurgica, Vol.22, 1988 and Metals Abstracts (II-1115) Oct. 1988, pp. 803-808.
48. In-situ TEM study of precipitation and Growth of MgZn<sub>2</sub> phase in AlZnMgCu alloy, The Institute of Metals, London, 1988.
49. A simple technique for revealing prior austenite grain boundaries in CrMoV turbine rotor steels, Metallography, Elsevier Science Publishing Co., Inc., 1988.
50. Uranium Enrichment Technologies Felicitation Volume in honour of Dr.Raziuddin Siddiqui, Hamdard Foundation, Pakistan, Karachi, 1988.
51. Effect of strain rate on the Tensile deformation and fracture behaviour of 18 Ni-300 maraging steel sheet, Materials Science and Technology, The Institute of Metals, London - June 1988, Vol.4 and Metals Abstracts (31-3864) Vol.21.
52. The origin and influence of residual magnetism on the electron beam welding of 18% Ni-maraging steels, materials and Design, Scientific and Technical Press Ltd., Vol.IX, No. 5, Sept-Oct. 1988.
53. Some metallurgical charges produced during flow turning, grinding and subsequent hydroforming of 18 Ni-300 maraging steel tubes, Sheet Metal Industries, London, under publication.
54. Phase Analysis in a Cu-Al-Ni alloy rapidly solidified by various techniques, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
55. Orientation of rapidly solidified microstructure, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
56. Synthesis of rapidly solidified aluminide coatings, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
57. Synthesis of rapidly solidified Al-bronze coatings on pure aluminum, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
58. Electron beam modification of a maraging steel, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
59. Change in fracture behaviour on aging of rapidly solidified Cu-Al-Ni shape memory alloys, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.
60. The magnetic properties of maraging steels in relation to phase transformations, Proceedings - International Meeting on Advanced Materials, Tokyo, Japan, 1988.

61. Question of Secondary Peak in Hardness Versus Retrogression Time of AA-7075 Aluminium Alloys - Physical Sciences Section, Pakistan J. Sci. Ind. Res., Vol. 31, No. 5, May 1988.
62. Question of Secondary Peak in Hardness Versus Retrogression Time Curve of AA-7075 Aluminium Alloys, Physical Sciences Section, Pakistan J. Sci. Ind. Res., Vol.31, No. 5, May 1988.
63. Production of 18% Ni-300 Maraging Steel Bellows By Hydroforming, Current Advances in Mechanical Design and Production. 4th Cairo Univ. MDP Conference Cairo Dec. 27-29, 1988.
64. An In Situ Study of Phase Transformations in Maraging Steel, Maraging Steels Recent Development and Applications, The Minerals, Metals and Materials Society, 1988.
65. Effect of Post-tempering Quenching of the Mechanical Properties of a Martensitic Stainless Steel, First National Course on Materials Science - Dept. of Physics Bahauddin Zakariya University, Multan, 18-23 March, 1989.
66. Creep Properties of 7075 Aluminium Alloy under Intermittent Stressing, Pakistan Journal of Scientific and Industrial Research, Karachi, Vol. 32, No. 3, March 1989, pp. 141-162.
67. Formability of Hot and Cold Rolled Copper Bearing High-Strength, Low-Alloy Steel Sheets, Proceedings of the sixth SAS-World Conference (Oct, 1989), Structural Analysis and Optimization FEMACAD-89, Organized by I.I.T.T. of Paris, France, 1989.
68. Influence of Cold Working on the Hardening Behaviour of 18% Ni-300 Maraging Steel - Published in Metal Behaviour and Surface Engineering (Technology Transfer Series), IITT-International, France, 1989.
69. A new Method of Producing Higher Toughness in AISI 431 Stainless Steel Rods, Wire Asia 89 - 4th Wire Asia International Conference and Exhibition, Shanghai, People's Republic of China, 23-27 April 1989.
70. Creep Properties of 7075 Aluminium Alloy under Intermittent Stressing, Pakistan Journal of Scientific and Industrial Research, Vol.32, No. 3, March 1989, pp. 141-144.
71. The Heat of Formation of Alloys (Phenomenological and theoretical Models); Quarterly Pakistan Steel Journal Jan-Mar 1989.
72. The Origin and Influence of Residual Magnetism on the Electron Beam Welding of 18% Nickel Maraging Steel, Metal Abstract, Vol.22 (55-1287), May 1989.
73. In-Situ TEM study of Precipitation and Growth of MgZn<sub>2</sub> phase in AlZnMgCu alloy, Proc. Phase Transformation, Cambridge, UK, 1987, pp. 186-188.
74. Formability of Hot and Cold Rolled Copper Bearing High-strength, Low Alloy Steels, International Conference "FEMCAD-89" Structural Analysis Systems, Paris, France, Oct. 25-27, 1989.
75. The Heat of Formation of Alloys (Empirical Models): Quarterly Pakistan Steel Journal, Vol.36, Apr-Jun/Jul-Sept., 1989.
76. Effect of Casting Parameters and Heat Treatment on the Properties of an Investment Cast Al-7Si-4Cu Alloy Component, Proceedings of the First European Conference on Advanced Materials and Process (EUROMAT '89), Aachen, West Germany, 22-24 Nov. 1989.
77. A new method of Producing higher toughness AISI 431 Stainless Steel Rods, Wire Industry, UK, Vol.57, No. 676, April 1990.
78. Electrolytic Ni-Coating and its effects on the impact properties of 18% Ni-350 Maraging Steel, Mat.Tech.'90, The First European East-West Symposium on Materials and Processes, Finland, June 10-18, 1990.

79. Quality Control of 18 Ni-350 Maraging Steel Parts by Eddy Current Testing, Engineering Horizons, Vol.I, No.2, Sept. 1990.
80. Intergranular Embrittlement in Alloys based on Intermetallic Compounds, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp.155-160.
81. Effect of Ausaging Temperature on the Mechanical Properties of 18% Ni-350 Maraging Steel, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp.191-196.
82. Effect of Cold Working on the Work-Hardening rate of 18% Ni Ultra-High Strength Steel, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp.197.
83. Machining-Induced Phase Transformation in Ultra-High Strength 18% Ni-Maraging Steel, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp.198-202.
84. Prediction of Solid-Liquid Interface During Electron Beam Surface Melting using a Finite Difference Technique, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp. 299-304.
85. Synthesis of Cu-Al Alloys on Pure Aluminium using High Energy Beams, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp. 305-310.
86. Synthesis and Surface Modification of Bronze Matrix-Graphite Strengthened Composites, Proceedings - 1st International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), 1990, pp. 311-318.
87. State of Science and technology in the Muslim World, Science Technology and Development, Pakistan Council for Science and Technology, Islamabad, Vol. 9, No. 5&6, Sept-Dec. 1990.
88. Electron Beams in Surface Modification of Metals - The State of the Art, Ministry of Mines and Metals National Iranian Steel Co., 9-15 March 1991.
89. A4-P14 Nickel Plating and its Influence on the Properties of an Ultra-High Strength Maraging Steel, The 2nd European Conference on Advanced Materials and Processes, University of Cambridge, The Institute of Metals, UK, 22-24 July 1991.
90. The Rolling Texture of 18Ni-350 Maraging Steel, Published in Journal of Materials Engineering, USA.
91. Effect of Flow-Turning Direction on the Properties of AA-7075 Thin Valled Tubes, Published in Sheet Metal Industries, Institute of Sheet Metal Engineering, UK.
92. Advantages of Heat Treatment of Steels Under Vacuum, Engineering Horizon, Oct. 1991.
93. Effect of Heat Treatment on the Fracture Toughness of AISI 431 Stainless Steel, Published at Mat. Tech. 91, The 2nd European East-West Symposium on Materials and Processes, Helsinki, Finland, May 26-30, 1991.
94. Martensite Reversion due to processing and Storage Conditions in 18% Nickel Maraging Steel, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 164-169.
95. Reprocessing and Additional Alloying of 350-Maraging Steels, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 170-180.
96. Magnetic Properties of 18Ni-350 Maraging Steels, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 200-207.

97. Effect of Plastic Deformation on the Mechanical Properties of a High Strength Steel, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 208-214.
98. The Calculation of Corrosion Parameters from Electrochemical Data, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 268-272.
99. Failures in a Prestressed High Strength Steel Welds in Humid Atmosphere, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 356-360.
100. Effect of Prior Thermomechanical Treatment on Nitriding of An 18 Wt.% Nickel Maraging Steel, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 361-370.
101. Some Properties of Metals Influenced by Elastic Anisotropy, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 386-392.
102. Influence of Heat Treatment on the Tensile and Fracture Toughness Properties of AISI 431 Stainless Steel Thin Rods, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 393.
103. Embrittlement of Leaf Spring Steels - A Case Study, Proceedings - 2nd International Symposium on Advanced Materials, 18-20 Sept. 1989, Islamabad (Pakistan), pp. 507-512.
104. Advantages of Heat Treatment of Steels Under Vacuum, Engineering Horizons (Pakistan), Oct. 1991, pp. 7-9.
105. Electron Beam Welded Joints in an Ultra High Strength Steel, "Laser & Electron Beams in welding Cutting and Surface Treatment - State of the Art", Harrah's Reno Nevada, USA, 1991.
106. A Study of Martensite to Austenite Transformation in Maraging Steels, International Conf. on Condensed Matter Physics & Applications (ICCPA), Organised by Physics Department, University of Bahrain, Bahrain, 13-16 Apr. 1992.
107. A Study of Pakistani Gypsum by X-Ray Powder Diffraction, Published in Canadian Mineralogist.
108. Influence of Second Phase Particles on the Development of Textures in Composite Materials, Proceedings of the Federation of Asian Scientific Academies and Societies (FASAS) Symposium on New Materials and Contemporary Applications, 28th Nov. to 1st Dec. 1992, Islamabad, Pakistan, pp. 40-45.
109. Influence of Austenite on the Coercive Force, Electrical Resistivity and Hardness of 18% Ni Maraging Steel, Materials & Design, Vol. 13, No.5, 1992, pp. 259-264.
110. Machine-Induced Phase Transformation in a Maraging Steel, Mats. Sci. & Engg., A159(1992), pp. 261-265.
111. Chemical Variations In The Rock Salt From Khewra Area, Pakistan, Published in Nature, UK.
112. Failure Study of Grass Mower Cylinder Blades, Published in Engineering Horizon (Pakistan).
113. Method to Determine Optimum Number of Knots for Cubic Splines, Published in Communications in Applied Numerical Methods.
114. Materials Required for Nuclear Power Reactors, Invited Talk at the International Conference on Condensed Matter Physics & Applications, 13-16 April 1992, University of Bahrain, Bahrain.

115. A Novel Method of Micro-Texture Analysis Using Electron Backscattered Patterns, Presented at the International Conference on Condensed Matter Physics & Applications, 13-16 April 1992, University of Bahrain, Bahrain.
116. Austenite Determination by Eddy Current Measurements in a Maraging Steel, NDT & E International, Vol. 25, No. 3, 1992.
117. Synthesis of Surface Pores in a Bronze - Graphite Composite Using Electron Beam Surface Melting, Metallurgical Transactions A, 230-Vol.24A, Jan. 1993.
118. The Rolling Texture of 18% Ni-350 Maraging Steel, J. of Mats. Engg. and Performance, Vol. 2(1), February 1993.
119. Orientation Determination of Single-Crystal by Computer Generated Algorithm, Physical Sciences Section, Pak. J. Sci. Ind. Res., Vol. 36, Nos.2-3, Feb-Mar. 1993, pp. 51-53.
120. Incomplete Reaction Phenomenon in High Strength Bainitic Steels, Published in Metallurgical Transactions, May 1993.
121. A model to Predict the Distribution of Synthesized Pores in Electron Beam Melted Surfaces of a Bronze Composite, Materials Research Society, International Symposium Ikebukoro, Japan, Aug-Sept. 1993.
122. Improved Mechanical Properties due to Double-Stage Annealing in Maraging Steels, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 315-318
123. Notch Sensitivity of Deformed Thin Sheets of an 18wt.% Ni-Maraging Steel, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 328-333.
124. Portevin - LE Chatelier Effect in an 18 wt.% Ni Maraging Steel, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 334-340.
125. Deformation Texture in Particle-Containing Single Crystals, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 375-379.
126. Effect of Rolling Modes on the Development of Texture in Maraging Steels Grade 350, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 386-390.
127. A Study of Surface Films Formed During Maraging, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 460-467.
128. Stress Corrosion Cracking of 350 Maraging Steel in 3.5 Wt.% NaCl Solution, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 605-612.
129. Comparative Study of Coatings on Maraging Steel Grade 350 in Various Environments, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 613-619.
130. Effect of Microstructure and Texture on Electrical and Magnetic Properties of Wrought Iron - A Case Study, Proceedings - 3rd International Symposium on Advanced Materials, 20-24 Sept. 1993, Islamabad (Pakistan), pp. 778-782.
131. Storage Induced Reverse Martensite Transformation in 18% Ni-350 Maraging Steel, J. of Mats. Sci. Letters, Vol-12, pp.1539-1540 (1993), ISSN 0261-8028, 1 Oct. 1993.
132. Electron Beam Transient Tempering of a Rapidly Solidified High Speed Steel with an Unusual Rapidity, Materials Science and Engineering, A165 (1993), pp. 75-80.

133. Austenite Reversion in Cold Formed 18 wt-%Ni 350 Grade Maraging Steel, *Journal of Materials Science and Technology*, Vol. 10, pp-97-101, February 1994.
134. Reclamation and Additional Alloying of 18Ni-350 Maraging Steel, *Journal of Materials Engineering and Performance*, Vol. 3(3), June 1994, pp. 386-392.
135. Magnetic Properties of Maraging Steel in Relation to Deformation and Structural Phase Transformations, *Acta Metallurgica et Materialia*, Vol 42, No.3, 1994, PP-631-638.
136. Influence of second-phase particles on plastic deformation and lattice reorientation of single crystals during uniaxial compression, *Journal of Materials Science*, 29, 2013-2016 (1994), 0022-2461, Chapman & Hall, 1994.
137. Short Fatigue Crack Growth Behavior in a Ferritic-Bainitic Steel, *Metallurgical and Materials Transaction A*, Vol. 25A, Nov. 1994, pp. 2421-2425.
138. Electron Beam Surface Modification of a Porous Bronze-Graphite Composite, *Metallurgical and Materials Transactions A*, Vol-26A, May 1995, pp. 1297-1304.
139. Influence of Heat Treatment on Hardening Response of Al-Mg-Si Commercial Alloy, *Proceedings - 4th International Symposium on Advanced Materials*, 17-21 Sept. 1995, Islamabad (Pakistan), pp. 374-379.
140. Processing of AlNiCo Magnets, *Proceedings - 4th International Symposium on Advanced Materials*, 17-21 Sept. 1995, Islamabad (Pakistan), pp. 393-398.
141. Powder Production Processes for AlNiCo Permanent Magnet Alloy, *Proceedings - 4th International Symposium on Advanced Materials*, 17-21 Sept. 1995, Islamabad (Pakistan), pp. 399-406.
142. Deformation and Recrystallization Texture in Low and High Stacking Fault Energy Materials, *Proceedings - 4th International Symposium on Advanced Materials*, 17-21 Sept. 1995, Islamabad (Pakistan), pp. 634-638.
143. Influence of Annealing on Texture and Magnetic Properties of 18% Nickel, 2400 MN m<sup>-2</sup> Grade Maraging Steel, *Materials Science and Technology*, December 1995 Vol.11, No. 12, pp. 1281-1286.
144. Lattice Changes in the Martensitic Phase due to Ageing in 18 wt% Nickel Maraging Steel Grade 350, *Journal of Materials Science* 31, 0022-2461 (1996), pp. 305-309.
145. Failure Study of Grass Power Cylinder Blades, *Pak. Steel Res. J.*, 1(1), Feb. 1996, pp. 6-10.
146. An Air Crash Case Study, *Engineering Failure Analysis*, 3(3), 1996, pp-203-210.
147. Prospects of Promoting Science and Technology in the Islamic Development Bank (IDB), *Members Countries*, IDB, Jeddah, May 19, 1996.
148. Auger Study of Surface Film Formed on 18%Ni-350 Maraging Steel During Heat Treatment, Submitted to *Proc. 4th Intl. Conference in Surface Engineering*.
149. Synthesis of High Speed Tool Steel Surfaces on Mild Steel, *J. of Mat. Sci.*, 32 (1997), pp. 465-468.
150. Causes of Fatigue Failure in an Aero-Engine Component, *Engineering Failure Analysis*, 4(1), 1997, pp. 39-47.
151. Phase Transformations and Magnetic Properties in Cobalt Free and Low Cobalt Maraging Steels, *Materials Science and Technology*, 13, Feb. 1997, pp. 110-116.
152. Influence of Banded Structure on the Mechanical Properties of a High-Strength Maraging Steel, *J. of Materials Engineering & Performance*, 6(2), Apr. 1997, pp. 165-171.

153. Cathodic ARC Deposition of Titanium Nitride Coatings on Commercial Steels, Proceedings of 4th International Symposium on Sputtering & Plasma Processes-1997, Kanazawa, Japan, pp. 431-436.
154. Texture Development in Dual Phase Cold Rolled 18% Ni Maraging Steel, Metallurgical and Materials Transactions, Dec. 1997, Vol. 28A, pp. 2459-2465.
155. Study of Inclusions in a Failed Aero-Engine Component, Metallurgical and Materials Transactions, Vol 28 A, June 1997, pp. 1281-88.
156. Ageing Martensite Above  $A_s$  Temperature, Materials Science and Technology, July 1997, Vol. 13, pp. 818-820.
157. A study of Cracks in Hot Rolled Spring Steel Material, Proceedings - 5th International Symposium on Advanced Materials, 21-25 Sept. 1997, Islamabad (Pakistan) (To be published),
158. The stress Corrosion Cracking Behaviour of Nitrided Maraging-350 Steel in 3.5 wt.% NaCl Environment, Proceedings - 5th International Symposium on Advanced Materials, 21-25 Sept. 1997, Islamabad (Pakistan) (To be published),
159. Electrochemical Study of Boiler Tube Failure from an AC Plant, Proceedings - 5th International Symposium on Advanced Materials, 21-25 Sept. 1997, Islamabad (Pakistan) (To be published),
160. Effect of Process Parameters on The Characteristics of  $Ti_2N$  Coatings, Proceedings - 5th International Symposium on Advanced Materials, 21-25 Sept. 1997, Islamabad (Pakistan) (To be published),
161. The Development of Ummah in Science and Technology, International Conference on the Muslim Ummah in the next millennium, 23-25 Sept. 1997, Islamabad, Pakistan.
162. Fatigue crack propagation in maraging steel, Materials Science & Technology, Dec. 1997, Vol. 13, pp. 1063-1065.
163. A study of Pakistani Gypsum by X-ray powder diffraction, Pak. J. Sci Ind. Res., May-August 1996, Vol.39, No. 5-8, pp. 110-113.
164. Thermodynamics of non-equilibrium phases in electron beam rapid solidification, Proceedings - 2<sup>nd</sup> National Symposium on Frontiers in Physics-II, 1990, pp.78-88.
165. Synthesis of high speed steel surfaces on mild steel, J. of Materials Science.
166. Fatigue crack growth in thermo-mechanically treated maraging steel, Proceedings - 4<sup>th</sup> International Symposium on advanced Materials, 17-21 Sept. 1995, pp. 646-652.
167. Higher-toughness stainless steel rods, Wire Industry, April 1990, pp.346-349.
168. Electron beam induced surface alloying of a maraging steel, Proceedings - MRS International Meeting on advanced materials, Tokyo, Japan, Vol. 10, May 31-June 1, 1998, pp-491-496.
169. Increased concentration of copper in a high strength steel, Dusseldorf, 1992.
170. Stability of reverted austenite in a maraging steel, To be published.
171. Texture of plastically deformed 18% Ni 350-maraging steel containing austenite, To be published.
172. Synthesis of tungsten rich  $M_6C$  Network on mild steel using energy beams, To be published.
173. Overload effect on fatigue crack propagation in alloy, Proceedings – Seventh International Fatigue Congress, Beijing, P.R. China, 8-12 June, 1999, Vol-2 Fatigue '99, pp-1021-1026.
174. Evaluation of Halide-Activated Pack Boriding of INCONEL 722, Metallurgical and materials transactions, Vol-30-A, month 1999, pp-670-675.

175. Effect of retained austenite on gas nitriding of high strength steel, *Materials Science and Technology*, Vol-14, December 1998, pp-1218-1220.
176. Texture Development in Dual-Phase Cold-Rolled 18 pct Ni Maraging Steel, *Metallurgical and Materials Transactions*, December 1997, Vol-28A, pp-2459-2465.
177. Fatigue Crack Propagation in Maraging Steel, *Materials Science and Technology*, Vol-13, December 1997, pp-1063-1065.
178. Cathodic arc deposition of titanium nitride coatings on commercial steels, *Vacuum*, 1998, Vol-51, pp-629-633.
179. Effect of Repeated Thermal Cycling on the Formation of Retained Austenite in 18% Ni 350 Grade Maraging Steel, *Materials Transactions, JIM*, Vol-39, No.9 (1998), pp-995-999.
180. Effect of Heat Treatment Conditions on the Surface of High Strength Steel, *Proceedings of the Asian Conference on Heat Treatment of Materials*, May 13-15, 1998, Beijing, China, pp-148-154.
181. Effect of Magnetic Annealing on the Properties of Fe-Cr-Co Alloy, *Proceedings of the Asian Conference on Heat Treatment of Materials*, May 13-15, 1998, Beijing, China, pp-364-369.
182. Heat Treatment of High Strength Steels In A Vacuum Furnace, *Proceedings of the Asian Conference on Heat Treatment of Materials*, May 13-15, 1998, Beijing, China, pp-440.
183. The formation of reverted austenite in 18% Ni 350 grade maraging steel, *Journal of Materials Science*, 33 (1998), pp-2927-2930.
184. New Direction in Transmission Electron Microscopy and Nano-Characterization of Materials, *proceedings of the Asian Science Seminar*, Japan, March 17-26, 1999, pp-283-288.
185. Influence of gas nitriding on fatigue resistance of maraging steel, *International Journal of Fatigue*, 21 (1999), pp-163-168.
186. Evaluation of Halide-Activated Pack Boriding of INCONEL 722, *Metallurgical & Materials Transactions A*, 607 - Volume 30-A, Month 1999.
187. Role of Ferrite/pearlite banded structure and segregation on mechanical properties of micro alloyed hot rolled steel, *Materials Science and Technology*, Vol 15, October 1999.
188. Causes of fatigue in the main bearing of an aero-engine, February 24, 1999.
189. Creep-fatigue failure of an aero engine turbine blades, *Engineering failure Analysis* 9 (2002), pp 335-347.
190. Science & Technology: The Key to Prosperity of Ummah, *Proceedings, Pakistan Academy of Sciences*, 39(1), pp 125-134 (2002)

Furthermore, he has published about 10 extensive articles in the national dailies on enrichment technologies, non-proliferation, nuclear matters, etc.