



### Curriculum Vitae: Professor Dr. H.S. VIRK

1. Name : Hardev Singh Virk
2. Father's Name : Avtar Singh Virk
3. Date of Birth : February 23, 1942.
4. Place of Birth : Kamoke, Distt. Gujranwala (now in Pakistan)
5. Present Address : #14017, 30 Ave, SURREY, BC, V4P2N3, Canada  
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6. Academic Qualifications:
  - (a) B.Sc. (1961) Mahindra College, Patiala (P.U. Chandigarh),  
M.Sc. (1963) Aligarh Muslim University, Aligarh,  
Ph.D. (1972) Marie Curie University, Paris, France.
  - (b) Honours in Punjabi, Diploma in French, Certificate in Russian.
7. Fields of Specialisation: Nuclear & Radiation Physics, Seismology and Nano - Technology.
8. Language Proficiency: English, Punjabi, Hindi, French and Russian.
9. Teaching & Research Experience: 50 years (1963-2002), 2004-05, 2008-11, 2013-20.
10. Positions held :
  - (a) Professor of Eminence, SGGS World University, Fatehgarh Sahib, India
  - (b) Professor of Eminence, Punjabi University, Patiala (2017-19)
  - (b) Director Research, DAV Institute of Engg. & Technology, Jalandhar (2008-11)
  - (c) Dean Academic Affairs & Students Welfare (DAASW) (1991-93),  
Dean Faculty of Science (1982-84) & Head Physics Department  
(1979-86, 1989-92), Guru Nanak Dev University, Amritsar.
  - (d) Professor (Dec. 1980- June 2002), Reader (July 1979-Dec. 1980),  
Guru Nanak Dev University, Amritsar.
  - (e) Lecturer and Reader, Punjabi University, Patiala (Oct. 1965-July 1979).

- (f) French Govt. Scholar, Paris University, Paris (Oct. 1970 - Nov. 1972).
- (g) Lecturer, Guru Nanak Engg. College, Ludhiana (Sept.1963 - Oct.1965).
- (h) Lecturer, Layalpur Khalsa College, Jalandhar (July-Sept. 1963).
- (g) Fellow, Indian Institute of Science & Religion, Pune (July 04 – Dec. 05)

### **11. Academic Work:**

- (a) Published 425 Research Papers in Scientific Journals of National and International repute (1972-2019).
- (b) Published 45 books and 150 articles on scientific/technical & literary subjects.
- (c) Published more than eight dozen popular science articles and travelogues in Punjabi.
- (d) Directed UNESCO Regional Seminar on Ibn-Sina (March,1981); 3rd National Seminar on SSNTD (March, 1983), First National Seminar on History and Philosophy of Science (March, 1987), 3rd Int. Conference on Rare Gas Geochemistry (Dec.1995), 23rd IARP Conference on Recent Advances in Radiation Measurements and Protection (Feb., 1997), Swift Heavy Ions in Insulating Materials (Feb., 1998), Science Communicators Workshop (Feb., 1999) and International Conference on Natural Hazards (Mar., 2001).

### **12. Research Projects Supervised:**

- (a) Dating of Rocks (1974-77) under Council of Scientific and Industrial Research (CSIR), New Delhi.
- (b) Deuteron Interactions in Nuclear Emulsions at 10 GeV/c (1976-79) under University Grants Commission (UGC) New Delhi.
- (c) Uranium Estimation in Plants and Water (1979-82) under CSIR, New Delhi.
- (d) Radon-Thoron Estimation in Soil (1983-88) under CSIR, New Delhi.
- (e) Elemental Analysis of Fossil Bones using XRF (1986-88) under Third World Academy of Sciences, Trieste (Italy).
- (f) Earthquake Prediction using Radon Signals (1988-91) under Department of Science and Technology (DST), New Delhi.
- (g) Development of Gas Scintillation Proportional Counter (1988-91) under UGC, New Delhi.
- (h) Heavy Ion Radiation Damage in SSNTDs: Basic Properties and Technological Applications (1989-92) under UGC, New Delhi.
- (i) Earthquake Prediction using Radon Signals (1992-95) under Himalayan Seismicity Project of DST, New Delhi.

- (j) Single Pore Sensor for Water Pollution Control (1993-95) under Ministry of Environment & Forests, Government of India, New Delhi.
- (k) Radon/Helium Studies for Earthquake Prediction and Fault Delineation in N-W Himalaya (1995-98) under Himalayan Seismicity Project of DST, New Delhi.
- (l) Seismo-tectonics and Earthquake Studies in the State of Punjab (1997-2000) sanctioned by the Department of Revenue, Government of Punjab, Chandigarh.
- (m) Study of Radon/Thoron levels in Punjab and Chandigarh under BRNS, Department of Atomic Energy, Govt. of India (1996-2000).
- (n) Heavy Ion Radiation Effects in Insulators under DST, New Delhi (1997-2001).
- (o) Radon/Helium Monitoring in Thermal Springs under DST, New Delhi (2001)
- (p) Earthquake Prediction Studies in N-W Himalaya using Geochemical Precursors (2000-2003) under Himalayan Seismicity Project of DST, New Delhi.

### **13. Membership of Professional Bodies:**

- (a) Life Member, Indian Association for History and Philosophy of Science.
- (b) President, Indian Association of Physics Teachers (IAPT).
- (d) Life Member, Indian Association for Radiation Protection (IARP).
- (e) Life Member, Indian Association of Physics Teachers (IAPT).
- (f) Life Member, Indian Nuclear Track Society (INTS).
- (g) Life Member, Indian Science Congress Association (ISCA).
- (h) Life Member, Indian Chapter of ICTP, Trieste, Italy.
- (i) Life Member, International Nuclear Track Society (INTS).
- (j) Life Member, Indian Society for Radiation Physics (ISRP).

### **14. Membership of Academic Bodies:**

- (a) Member, UGC Panel on History of Science (1975-76).
- (b) Fellow, Guru Nanak Dev University Senate (1980-84) & (1991-93).

- (c) Member, Guru Nanak Dev University Syndicate (1981-82),(1983-84) & (1991-93).
- (d) Member, Academic Council, Guru Nanak Dev University (1979-2002).
- (e) Dean, Science Faculty, Guru Nanak Dev University (1982-84).
- (f) Chairman, Board of Studies, Guru Nanak Dev University (1976-86) & (1989-92).
- (g) Member, Science Faculty, Punjabi University, Patiala (1983-90).
- (h) Member, Board of Studies, Punjabi University, Patiala (1981-88, 1993-95 & 1997-99).
- (i) Member, Punjab State Council for Science and Technology, Chandigarh (1986-90).
- (j) Member, Punjab State University Text Book Board, Chandigarh (1992-96).
- (k) Member, UGC Council of Nuclear Science Centre, New Delhi (1998-99).
- (l) Member, History of Science Panel (Modern Period), Indian National Science Academy, New Delhi (1993-95), (1999-2001) & (2001-2003).

#### **15. Administrative Experience:**

- (a) Chairman, Physics Department, GNDU (July 1979-Oct.1986) & (Oct. 1989-Oct.1992).
- (b) Dean Academic Affairs, Guru Nanak Dev University, Amritsar (1991-93).
- (c) Principal Investigator, Research Projects of UGC, CSIR, DST & TWAS (1974 –2002).
- (d) President, Indian Association of Physics Teachers (2003-2006).
- (e) Vice-President, Indian Nuclear Track Society (1987-97) and President (1998-2003).
- (f) Member Site Selection Committee for Nuclear Power Plant in Punjab State (2000-2001).
- (g) Director, Centre for Promotion of Science, G.N.D. University, Amritsar (1986-95).
- (h) Director, Earthquake Research Centre, G.N.D.University, Amritsar (1996-2000).
- (i) Director Research, DAV Institute of Engg. & Technology (2008-2011).

#### **16. Visits Abroad:**

- (a) France (1970-72) :Doctoral research work at Marie Curie University, Paris under Indo-French Scientific & Cultural Exchange Programme.

- (b) England (1972) : Research Seminar at Rutherford Laboratory, Cambridge University.
- (c<sub>1</sub>) Italy (1977) : Participated in Autumn Workshop on Physics of Earth at ICTP, Trieste.
- (c<sub>2</sub>) France (1977) : Visiting Scientist in Marie Curie University of Paris.
- (d<sub>1</sub>) Italy (1981) : Participated in Nuclear Physics Workshop at ICTP, Trieste.
- (d<sub>2</sub>) Hungary (1981) : Visit to Research Laboratories in Debrecen and Budapest.
- (e) Pakistan (1983) : Participated in International Symposium on Renewable Energy Sources held at Lahore.
- (f<sub>1</sub>) Mexico (1983) : Chaired a Session at 12th International Conference on SSNTD held at Acapulco.
- (f<sub>2</sub>) USA (1983) : Visit to National Bureau of Standards(NBS), Washington D.C.
- (g<sub>1</sub>) Italy (1985) : Participated in Solar Energy Workshop at ICTP, Trieste and International Conference on SSNTD held at Rome.
- (g<sub>2</sub>) Germany (1985) : Attended USER Committee Meeting at Darmstadt and visited Max Planck Institute of Nuclear Physics, University of Heidelberg.
- (g<sub>3</sub>) Austria (1985) : Invited lectures at Technical University of Innsbruck.
- (g<sub>4</sub>) France (1985) : Invited lectures at Marie Curie University, Paris.
- (h<sub>1</sub>) Italy (1986) : Participated in "College on Neurophysics" at ICTP, Trieste.
- (h<sub>2</sub>) Austria (1986) : Guest Research Professor at Technical University of Innsbruck.
- (i<sub>1</sub>) Italy (1987) : Participated in High Energy Physics Conference and International Workshop on Superconductors at ICTP, Trieste.
- (i<sub>2</sub>) France (1987) : Participated in 4th International Conference on Radiation Effects in Insulators at Lyon.
- (j) Italy (1988) : Participated in College on Medical Physics at ICTP, Trieste.
- (k) Pakistan (1988) : Chaired a Session of 14th International Conference on SSNTDs held at Lahore.
- (l) Canada (1989) : Invited paper at 5th International Conference on Radiation Effects in Insulators at McMaster University, Hamilton.  
: Attended 9th International Conference on Ion Beam Analysis at

Queen's University, Kingston.

- (m) Germany (1990) : Chaired a session at 15th International Conference on Particle Tracks in Solids held at Marburg.
- (n<sub>1</sub>) Germany (1991) : Participated in 6th International Conference on Radiation Effects in Insulators at Weimer.
- (n<sub>2</sub>) Yugoslavia(1991) : Participated in 5th International Conference on Radiation Physics held at Dubrovnik.
- (o) Malaysia (1991) : Visiting Professor at University of Malaya, Kuala Lumpur, Malaysia under South -South Fellowship Programme of TWAS, Trieste, Italy.
- (p<sub>1</sub>) China (1992) : Visiting Scientist at China Institute of Atomic Energy, Beijing under South -South Fellowship Programme of TWAS, Trieste, Italy.  
: Chaired a session at 16th International Conference on SSNTDs held at Beijing.
- (p<sub>2</sub>) Thailand (1992) : Participated in 7th International Seminar on Earthquake Prognostics held at Asian Institute of Technology, Bangkok.
- (q<sub>1</sub>) France (1993) : Visiting Professor at Universities of Lyon, Grenoble and Montpellier under Indo-French Scientific Research Exchange Programme of CSIR, New Delhi.
- (q<sub>2</sub>) USA (1993) : Honorary Visiting Professor at University of North Texas at Denton, Texas. Visiting Scientist at Lawrence Berkeley Laboratory and University of California at Berkeley.
- (q<sub>3</sub>) Canada (1993) : Participated in 15th International Conference on Atomic Collisions in Solids at University of Western Ontario, London.
- (q<sub>4</sub>) Japan (1993) : Participated in 7th International Conference on Radiation Effects in Insulators at Nagoya University, Nagoya.  
: Visited Research Laboratories at Universities of Kyoto and Tokyo.
- (r) Iran (1994) : Visiting Professor at Atomic Energy Organisation of Iran and University of Tehran under South-South Fellowship Programme of Third World Academy of Sciences (TWAS), Trieste, Italy.
- (s) Australia (1995) : Participated in 9th International Conference on Ion Beam Modification of Materials (IBMM) held at Australian National University , Canberra and University of Melbourne.

- (t) Japan (1996) : Delivered an Invited Talk on Earthquake Prediction Studies in NW Himalaya at International Symposium held at University of Tokyo, March 5-8, 1996.
- (u<sub>1</sub>) USA (1996) : Participated in 10th International Conference on Ion Beam Modification of Materials (IBMM-96) at Albuquerque, Sept. 1-6, 1996.
- (u<sub>2</sub>) Germany (1996) : Delivered an Invited Talk at International Symposium on Materials Science Applications of Ion Beam Techniques (IBT-96) held at Seeheim, Sept. 9-12, 1996.
- (v<sub>1</sub>) Hungary(1997) : Visiting Professor at University of Budapest and Nuclear Research Institute (ATOMKI) at Debrecen under Indo-Hungarian Scientific Exchange Programme of INSA, New Delhi, Sept.15-Oct.7,1997.
- (v<sub>2</sub>) Italy (1997) : Participated in the 4th International Conference on Rare Gas Geochemistry (ICRGG) held at Rome, Oct. 8-10, 1997.
- (w) Japan (1997) : Participated in 33rd International Conference of International Society Hydrothermal Technology (SITH) held at Kanagawa, Dec. 1-4, 1997.
- (x<sub>1</sub>) Uzbekistan (1999) : Delivered an invited talk on Radon/Helium Monitoring for Earthquake Prediction Studies in N-W Himalaya at Jubilee Scientific Conference held at Institute of Seismology, Tashkent, April 24-25, 1999.
- (x<sub>2</sub>) Hungary (1999) : Participated in IRPA Regional Congress on Radiation Protection held at Budapest, Aug .22-27, 1999.  
: Participated & Chaired a session at the 5th International Conference on Rare Gas Geochemistry (ICRGG) held at Debrecen, Aug.30-Sept.3, 1999.
- (x<sub>3</sub>) Poland (1999) : Visited Warsaw State University, Warsaw and Jagellonian University at Cracow, Sept. 4- 6, 1999.
- (x<sub>4</sub>) Russia (1999) : Visited Moscow State University, Moscow; Joint Institute of Nuclear Research (JINR) , Dubna and IZMIRAN Institute at Troitsk, Moscow Region, Sept. 7-10, 1999.
- (y<sub>1</sub>) Slovenia (2000) : Participated in 20th International Conference on Nuclear Tracks in Solids, Aug.28-Sept1, 2000.
- (y<sub>2</sub>) Germany (2000) : Participated in 5<sup>th</sup> International Conference on High Levels of

- Natural Radiation & Radon Areas, Munich, Sept. 4-7, 2000.  
 : Participated in 2<sup>nd</sup> International Symposium on Radiation Protection, Dresden, Sept.10-14, 2000.
- (y<sub>3</sub>) Hungary (2000) : Visited Eotvos University of Budapest under Indo-Hungarian S&T Co-operation Programme of DST, Govt. of India, Sept.14-27, 2000.
- (y<sub>4</sub>) Italy (2000) : Visited Institute of Geophysics, University of Roma, Sept. 28, 2000.
- (z<sub>1</sub>) Portugal (2001) : Participated in 11<sup>th</sup> International Conference on Radiation Effects in Insulators,Lisbon, Sept.3-7, 2001.
- (z<sub>2</sub>) Denmark (2001) : Visited Niels Bohrs Institute of Physics, Copenhagen, Sept.12, 2001.
- (z<sub>3</sub>) Sweden (2001) : Visited Swedish Radiation Protection Institute, Stockholm, Sept. 13-14, 2001.
- (z<sub>4</sub>) Hungary (2001) : Visited Eotvos University of Budapest under Indo-Hungarian S&T Co-operation Programme of DST, Govt. of India, Sept.17-28, 2001.
- (z<sub>5</sub>) Romania (2001) : Delivered an invited lecture at “Horia Hulubei” National Institute for Physics, Romania, Oct.1, 2001.
- (z<sub>6</sub>) Bulgaria (2001) : Delivered an invited lecture at Geophysical Institute, Bulgarian Academy of Sciences, Sofia, Oct.3, 2001.
- (z<sub>7</sub>) Turkey (2001) : Visited Department of Nuclear Physics, University of Istanbul, Oct.6-8, 2001.  
 : Delivered an invited lecture at Institute of Nuclear Science, Ege University, Bornova-Izmir, Oct.10, 2001.
- (z<sub>8</sub>) UK (2003) : Delivered an Invited Lecture on Nanotechnology in School of Contemporary Sciences, University of Abertay, Dundee, Scotland on Oct.28, 2003.
- (z<sub>9</sub>) Israel (2004) : Delivered an Invited lecture during 3<sup>rd</sup> Int. Conf. MMT-2004 held at College of Judea and Samaria, Ariel, 6-10 Sept. 2004.
- (z<sub>10</sub>) Jordan (2004) : Delivered Invited Lecture on Environmental Radon during 4<sup>th</sup> Symp. on Nuclear Techniques in Environmental Studies,Irbid, 13-15 Sept.2004.
- (z<sub>11</sub>) Myanmar (2005) : Visiting Professor in Yangon University from 15<sup>th</sup> Feb- 14<sup>th</sup> March & from 17<sup>th</sup> Nov.-15<sup>th</sup> Dec., 2005 under Ministry of External Affairs, Govt. of India.



- (z12) Germany (2006) : Delivered an Invited Lecture on Ion Tracks Technology during 21st Int. Conference of European Physical Society held at Technical University, Dresden from March 26 – 31.
- (z13) France (2006) : Visited Marie Curie University of Paris from April 7 – 10 and delivered a lecture to Sikh Religious & Cultural Society on Turban Issue at Bobigny.
- (z14) Switzerland (2006) : Participated in the Exhibition “Albert Einstein: Life and Work” held at Historical Museum, Berne on April 2.
- (z 15) Ethiopia (2008) : Visited Addis Ababa University from June 18-25 to participate in International Conference on Promotion of Scientific Research.
- (z16) Egypt (2008) : Visited Cairo University, Cairo from June 25- 29 and delivered a Seminar.
- (z17) Italy (2009) : Participated in 15<sup>th</sup> International Conference on Radiation Effects in Insulators (REI-15), held at Padua, Italy, Aug. 30-Sept. 4, 2009.
- (z18) USA (2010) : Delivered a Seminar Lecture on Nanotechnology at Santa Clara University, San Jose, California on Sept. 22, 2010.
- (z19) Taiwan (2016) : Visited Earthquake Research Centre, National Taiwan University, Taipei from Jan. 11-15 to study seismic activity in North Taiwan.
- Misc. Visits : Yugoslavia (1971, 1981, 1988), Netherland (1971, 2001), Switzerland (1971), Poland (1972), Tunisia (1977), Canada (1983, 2002 & 2003), Czechoslovakia (1972, 2000), Spain (1993), Singapore (1991 & 1995), Luxembourg (1997), Greece (1988), Hongkong (1992), Austria (2000), USA and Canada (2003, 2006, 2010, 2011, 2013, 2014, 2015 & 2016).