

BIO-DATA: 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 : 360 Sector 71, SAS Nagar (Mohali)
Distt. Mohali (Punjab)-160071
Ph. 172-2273606, e-mail: virkhs@yahoo.com

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: Radiation Physics, Seismology and Ion-Tracks Technology.

8. Teaching & Research Experience: 40 years (1963-2002), 2004-05.

9. Present Status: Director Research, DAV Institute of Engg. & Technology, Jalandhar (Regional Centre, PTU, Jalandhar)

10. Positions held : (a) 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.

(b) Professor (Dec. 1980- June 2002), Reader (July 1979-Dec. 1980),
Guru Nanak Dev University, Amritsar.

(c) Lecturer and Reader, Punjabi University, Patiala (Oct. 1965-July 1979).

(d) French Govt. Scholar, Paris University, Paris (Oct. 1970 - Nov. 1972).

(e) Lecturer, Guru Nanak Engg. College, Ludhiana (Sept. 1963 - Oct. 1965).

(f) Lecturer, Layalpur Khalsa College, Jalandhar (July-Sept. 1963).

(g) Fellow, Indian Institute of Science & Religion, Pune (July 04 – Dec. 05)

11. Academic Honours and Awards:

- (a) First Position in Govt. High School, Malerkotla in Matric (1957).
- (b) Distinction in Physics , B.Sc. Exam., Punjab University, Chandigarh.(1961).
- (c) "Most Honorable" in Doctoral Dissertation of Marie Curie University,Paris (1972).
- (d) First Prize for Translation of Popular Science Book "Story of Cosmic Rays" (*Brahmandi Kirna Di Kahani*) awarded by Punjabi University, Patiala (1969).
- (e) First Prize for Text Book " Heat and Thermodynamics " (*Tapgati Vigyan*) awarded by Punjabi University, Patiala (1977).
- (f) First Prize for Text Book " Atomic Physics " (*Atomi Bhautik Vigyan*) awarded by Punjabi University, Patiala (1978).
- (g) Senior Associateship of International Centre for Theoretical Physics (ICTP), Trieste, Italy (1988-93).
- (h) Chaired 13th International Conference on SSNTDs held at Rome (1985), 14th at Lahore(1988), 15th at Marburg(1990) and 16th at Beijing(1992).
- (i) Shiromani Award as Best Writer of Scientific Literature in Punjabi awarded by Punjab State Languages Department (1993).
- (j) S. Kartar Singh Dhaliwal Award for Scientific & Literary Writing in Punjabi by Panjabi Sahit Academy, Ludhiana (2000).

12. Academic Work:

- (a) Published 320 Research Papers in Scientific Journals of National and International repute (1972-2008).
- (b) Published 20 books and 125 articles on scientific/technical & literary subjects.
- (c) Published more than eight dozen popular science articles and travelogues in Punjabi.
- (d) Directed 3 Refresher Courses for College Teachers (1980-82) ; 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 International 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 Hazard (Mar.,2001).
- (e) Popularisation of Science in Punjab under the Centre for Promotion of Science.

13. 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.

14. Research Supervised :

- (a) Ph.D. Theses -18
- (b) M. Phil. Theses -16

15. Research Highlights :

- (a) Identification of very inclined and relativistic tracks in nuclear emulsion.
- (b) Fission track dating of tektites, pegmatites, ore formations and volcanic eruptions.
- (c) Calibration of glass dosimeters for neutron fluence determination.
- (d) Uranium estimation and its biogeochemical exploration in the Himalayas.
- (e) Earthquake prediction studies using Radon/Helium as a precursor.
- (f) "Single Activation Energy Model" for annealing of radiation damage in insulators.
- (g) Development of Ion Track Micro/Nanotechnology and its applications .
- (h) Assessment of radiation health hazards in Punjab and Himachal Pradesh.
- (i) Problems of Physics Education at School, College and University levels.

16. 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).

17. 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).

18. 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).
- (e) Vice-President, Indian Association of Physics Teachers (1984-90) and (1993-99).
- (f) Vice-President, Indian Nuclear Track Society (1987-97) and President (1998-2003).
- (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) Member, Site Selection Committee for Nuclear Power Plant in Punjab (2000-2001).

19. 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.
- (c₁) Italy (1977) : Participated in Autumn Workshop on Physics of Earth at ICTP, Trieste.
- (c₂) France (1977) : Visiting Scientist in Marie Curie University of Paris.
- (d₁) Italy (1981) : Participated in Nuclear Physics Workshop at ICTP, Trieste.
- (d₂) Hungary (1981) : Visit to Research Laboratories in Debrecen and Budapest.
- (e) Pakistan (1983) : Participated in International Symposium on Renewable Energy Sources held at Lahore.
- (f₁) Mexico (1983) : Chaired a Session at 12th International Conference on SSNTD held at Acapulco.
- (f₂) USA (1983) : Visit to National Bureau of Standards (NBS), Washington D.C.
- (g₁) Italy (1985) : Participated in Solar Energy Workshop at ICTP, Trieste and International Conference on SSNTD held at Rome.
- (g₂) Germany (1985) : Attended USER Committee Meeting at Darmstadt and visited Max Planck Institute of Nuclear Physics, University of Heidelberg.
- (g₃) Austria (1985) : Invited lectures at Technical University of Innsbruck.
- (g₄) France (1985) : Invited lectures at Marie Curie University, Paris.
- (h₁) Italy (1986) : Participated in "College on Neurophysics" at ICTP, Trieste.
- (h₂) Austria (1986) : Guest Research Professor at Technical University of Innsbruck.
- (i₁) Italy (1987) : Participated in High Energy Physics Conference and International Workshop on Superconductors at ICTP, Trieste.
- (i₂) 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.
- (n₁) Germany (1991) : Participated in 6th International Conference on Radiation Effects in Insulators at Weimer.
- (n₂) 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.
- (p₁) 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.
- (p₂) Thailand (1992) : Participated in 7th International Seminar on Earthquake Prognostics held at Asian Institute of Technology, Bangkok.
- (q₁) France (1993) : Visiting Professor at Universities of Lyon, Grenoble and Montpellier under Indo-French Scientific Research Exchange Programme of CSIR, New Delhi.
- (q₂) 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.
- (q₃) Canada (1993) : Participated in 15th International Conference on Atomic Collisions in Solids at University of Western Ontario, London.
- (q₄) 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.
- (u₁) USA (1996) : Participated in 10th International Conference on Ion Beam Modification of Materials (IBMM-96) at Albuquerque, Sept. 1-6, 1996.
- (u₂) 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.
- (v₁) 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.
- (v₂) 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.
- (x₁) 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.
- (x₂) 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.
- (x₃) Poland (1999) : Visited Warsaw State University, Warsaw and Jagellonian University at Cracow, Sept. 4- 6, 1999.

- (x₄) 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.
- (y₁) Slovenia (2000) : Participated in 20th International Conference on Nuclear Tracks in Solids, Aug.28-Sept1, 2000.
- (y₂) Germany (2000) : Participated in 5th International Conference on High Levels of Natural Radiation & Radon Areas, Munich, Sept. 4-7, 2000.
: Participated in 2nd International Symposium on Radiation Protection, Dresden, Sept.10-14, 2000.
- (y₃) Hungary (2000) : Visited Eotvos University of Budapest under Indo-Hungarian S&T Co-operation Programme of DST, Govt. of India, Sept.14-27, 2000.
- (y₄) Italy (2000) : Visited Institute of Geophysics, University of Roma, Sept. 28, 2000.
- (z₁) Portugal (2001) : Participated in 11th International Conference on Radiation Effects in Insulators, Lisbon, Sept.3-7, 2001.
- (z₂) Denmark (2001) : Visited Niels Bohrs Institute of Physics, Copenhagen, Sept.12, 2001.
- (z₃) Sweden (2001) : Visited Swedish Radiation Protection Institute, Stockholm, Sept. 13-14, 2001.
- (z₄) Hungary (2001) : Visited Eotvos University of Budapest under Indo-Hungarian S&T Co-operation Programme of DST, Govt. of India, Sept.17-28, 2001.
- (z₅) Romania (2001) : Delivered an invited lecture at “Horia Hulubei” National Institute for Physics, Romania, Oct.1, 2001.
- (z₆) Bulgaria (2001) : Delivered an invited lecture at Geophysical Institute, Bulgarian Academy of Sciences, Sofia, Oct.3, 2001.
- (z₇) Turkey (2001) : Delivered an invited lecture at University of Istanbul, Oct.7 and Instt. of Nuclear Science, Ege University, Bornova-Izmir, Oct.10, 2001.
- (z₈) UK (2003) : Delivered an Invited Lecture on Nanotechnology in School of Contemporary Sciences, University of Abertay, Dundee, Scotland on Oct.28, 2003.

- (z9) Israel (2004) : Chaired a session and delivered an Invited lecture during 3rd Int. Conf. MMT-2004 held at College of Judea and Samaria, Ariel, 6-10 Sept. 2004.
- (z10) Jordan (2004) : Delivered Invited Lecture on Environmental Radon during 4th Symp. on Nuclear Techniques in Environmental Studies, Irbid, 13-15 Sept. 2004.
- (z11) Myanmar (2005) : Visiting Professor at Yangon University, Myanmar under Indian Technical and Economic Cooperation of Govt. of India from Feb. 23 – March 23 and from Nov. 17 – Dec. 15 for supervision of Ph.D. scholars in Physics Department.
- (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.
- 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 (2003, 2006).

Appendix-I
Books Published by Professor Dr. H.S. Virk

1. Virk H S (1970)
Brahmandi Kiran di Kahani (Story of Cosmic Rays)
Punjabi University, Patiala.
2. Virk H S (1973)
Dhuni Vigyan (Text Book on Sound)
Punjabi University, Patiala.
3. Virk H S (1975)
Text Book of Physics for School Students (Translation into Punjabi)
Punjab School Education Board, Chandigarh.
4. Virk H S (1975)
Atom and its Nucleus (Translation into Punjabi)
Punjab State University Text Book Board, Chandigarh.
5. Virk H S (1977)
Tapgati Vigyan (Text Book on Heat and Thermodynamics)
Punjabi University, Patiala.
6. Virk H S (1978)
Atomi-Bhautic Vigyan (Text Book on Atomic Physics)
Punjabi University, Patiala.
7. Virk H S (1978)
Brahmand Di Rachna (Scientific Essays in Punjabi)
Singh Brothers, Mai Sewan, Amritsar.
8. Virk H S (1980)
Vayu Mandal (A Monograph on Atmosphere)
Punjab State Languages Department, Patiala.
9. Virk H S (1983)
Nuclear Tracks: Methods and Applications (Ed.)
Guru Nanak Dev University, Amritsar.
10. Virk H S (1988)
History and Philosophy of Science (Ed.)
Guru Nanak Dev University, Amritsar.
11. Virk H S (1988)
Adarsh ate Haqiqat (Punjabi Translation of *Ideals and Realities* by Professor AbdusSalam, Nobel Laureate), Guru Nanak Dev University, Amritsar.

12. Virk H S (1990)
Sade Vigyani (Our Scientists)
Guru Nanak Dev University, Amritsar.
13. Virk H S (1994)
Vigyan de Krishme (Wonders of Science)
Guru Nanak Dev University, Amritsar.
14. Virk H S (1997)
Rare Gas Geochemistry: Applications in Earth and Environmental Sciences (Ed.)
Guru Nanak Dev University, Amritsar.
15. Virk HS (2004)
Vigyan ate Vigyani (Punjabi translation of Science and Scientists)
National Book Trust of India, New Delhi.
16. Virk HS (2007)
Scientific Vision in Sri Guru Granth Sahib & Interfaith Dialogue.
Singh Brothers, Amritsar.
17. Virk HS (2008)
Sikh Dharam ate Vigyan (Sikh Religion & Science)
Tarlochan Publishers, Chandigarh
18. Virk HS (2008)
Professor Puran Singh: Scientist, Poet & Philosopher
Tarlochan Publishers, Chandigarh
19. Virk HS (2008)
Amrika- Canada di Yatra (My Travels in America & Canada)
Tarlochan Publishers, Chandigarh
20. Virk HS (2008)
Meri Vishav Yatra (My travels around the Globe)
Tarlochan Publishers, Chandigarh
21. Virk HS (2008)
Sikh Qaum da Dard ate Santap (Essays on Blue Star Operation)
Tarlochan Publishers, Chandigarh
22. Virk HS (2009)
Europe da Safarnama (Travelogue of Europe)
Tarlochan Publishers, Chandigarh

Appendix-II

Research Publications of Dr. H.S. Virk

1. Virk H S (1972)
Proton-nucleon interactions at 14 GeV in nuclear emulsion.
Nucl. Phys. B, 48, 476-486.
2. Tsai-Chu and Virk H S (1972)
Energy loss and radiation length of electrons in nuclear emulsion.
Compt. Rendu, Acad. of Sciences, Paris, 275, 165-167.
3. Virk H S (1972)
Identification of very inclined tracks in nuclear emulsion.
Compt. Rendu, Acad. of Sciences, Paris, 275, 517-519.
4. Virk H S (1972)
Study of nuclear interaction at high energy.
Compt. Rendu, Acad. of Sciences, Paris, 275, 219-222.
5. Virk H S (1972)
Do the particles with mass between that of electrons and muon exist?
Compt. Rendu, Acad. of Sciences, Paris, 275, 709-711.
6. Virk H S and Bansal B K (1973)
Law of gap length distribution and grain density of tracks.
Compt. Rendu, Acad. of Sciences, Paris, 277, 65-66.
7. Virk H S (1974)
Investigations of Tsytoich radiative corrections to ionisation loss of high energy electrons in nuclear emulsions.
Nucl. Phys. B, 72, 393-396.
8. Virk H S (1974)
Ionization of ultra relativistic electrons over Fermi plateau.
Compt. Rendu, Acad. of Sciences, Paris, 278, 291-292.
9. Virk H S and Verma Veena (1984)
Deuteron-nucleus interactions at 10 GeV/c in BR-2 nuclear emulsion.
Czech. J. Phys. B, 34, 1032-1037.
10. Virk H S and Koul S L (1974)
Optical detection of fossil fission tracks in minerals.
Compt. Rendu, Acad. of Sciences, Paris, 279, 477-478.

11. Virk H S and Koul S L (1974)
Fission track ages of some biotites of Bihar mica belt.
Ind. J. Pure and Appl. Phys., 12, 850-852.
12. Virk H S and Koul S L (1975)
Fission track ages of some muscovites of Bihar mica belt.
Curr. Sci., 44, 211-212.
13. Virk H S and Koul S L (1975)
Estimation of uranium in micaceous minerals of Bihar mica belt.
Ind. J. Pure Appl. Phys., 13, 569.
14. Virk H S and Koul S L (1975)
Annealing characteristics of induced fission tracks in micaceous minerals.
Curr. Sci., 44, 341-342.
15. Virk H S and Singh S (1976)
Annealing correction to fission track ages of biotites.
Ind. J. Pure Appl. Phys., 14, 421-422.
16. Virk H S and Koul S L (1976)
Fission track dating and Uranium estimation of some micaceous minerals of Paddar valley,
Kishtwar (J and K state, India).
J. Geological Soc. of India, 17, 547-548.
17. Virk H S and Singh S (1976)
Dating of iron ore formations (Calicut area) by fission track method.
Ind. J. Pure and Appl. Phys., 14, 868-869.
18. Koul S L and Virk H S (1976)
Fission track ages of some Himalayan muscovites.
Geophys. Res. Bull., 14,139-143.
19. Singh S and Virk H S (1977)
Annealing correction to the fission track ages of phlogopites.
Curr. Sci., 46, 376-378.
20. Virk H S (1977)
Origin and age of Tektites.
Curr. Sci., 46, 583-585.
21. Virk H S and Singh S (1977)
Fission track dating and uranium mineralization in pegmatites of Bhilwara area ,
Rajasthan state (India).
Mineralogical J. of Japan, 8, 263-271.

22. Virk H S and Koul S L (1977)
Fission track ages of Himalayan muscovites, Kathmandu valley (Nepal).
Pure Appl. Geophys., 115, 737-738.
23. Virk H S and Koul S L (1977)
Uranium estimation in zircon by using lexan plastic as track detector.
Compt. Rendu, Acad. of Sciences, Paris, 284, 295-297.
24. Virk H S and Koul S L (1977)
Fission track ages and Uranium estimation of Himalayan muscovites, Kathmandu valley (Nepal).
J. Phys. of Earth, 25, 177-186.
25. Virk H S and Singh S (1978)
Inclusion dating and phase differentiation in minerals.
Mineralogical J. of Japan, 9, 39-40.
26. Singh S and Virk H S (1978)
Fission track annealing behaviour of uraninite inclusion in muscovite pegmatite of Bhilwara area, Rajasthan state (India).
Mineralogical J. of Japan, 9, 111-114.
27. Koul S L and Virk H S (1978)
Thermal annealing behaviour of fission tracks in apatite crystal found at Borra mine, Vishakhapatnam District (India).
Mineralogical J. of Japan, 9, 55-63.
28. Singh S and Virk H S (1978)
Fission track dating and estimation of uranium in some garnets of Rajasthan (India).
Nucl. Track Det., 2, 169-171.
29. Singh S and Virk H S (1978)
Fission track dating and uranium estimation in pegmatite minerals of Rajasthan State (India).
Geochemical Journal (Japan), 12, 271-274.
30. Virk H S, Koul S L and Singh S (1978)
Fission track geochronology of Eastern Ghats
Geophysical Research Bull., 16, 197-202.
31. Virk H S and Mc Corkell R (1979)
Fission track age of tektites found in recent sediments.
Curr. Sci., 48, 679-680.

32. Virk H S and Kaur H (1979)
Estimation of uranium in plant and water samples.
Curr. Sci., 48, 293-295.
33. Virk H S (1979)
Cosmic radiation effects in Dhajala meteorite.
Curr. Sci., 48, 1067-1068.
34. Singh S and Virk H S (1980)
Fission track dating of copper ore formation of Khetri area, Rajasthan state (India). Geochemical Journal (Japan), 14, 51-55.
35. Virk H S (1980)
Intercalibration of glass dosimeters for neutron fluence determination.
Int. J. of Appl. Rad. and Isotopes, 31, 649-651.
36. Koul S L and Virk H S (1980)
Uranium estimation in pegmatites using solid state track detector.
Czech. J. Phys. B, 30, 778-782.
37. Singh S, Suri P S and Virk H S (1981)
Correction for thermally affected fission tracks in glass (obsidian) by age plateau method.
Curr. Sci., 50, 626-627.
38. Suri P S, Singh S and Virk H S (1981)
Uranium and radon estimation by plastic track detectors.
Ind. J. Pure and Appl. Phys., 19, 1131-1133.
39. Virk H S (1981)
Fission track evidence of ocean bottom spreading.
Curr. Sci., 50, 394-395.
40. Virk H S (1981)
Anomalous effects of temperature on fission fragment tracks in soda glass.
Int. J. of Appl. Rad. and Isotopes, 32, 933.
41. Modgil S K and Virk H S (1982)
Efficiency calibration and effect of etchant temperature on fission fragment tracks in soda glass detector.
Int. J. Appl. Rad. and Isotopes, 33, 495-497.
42. Modgil S K and Virk H S (1982)
Thermal stability of fission tracks in sodalime microslide glass.
Int. J. Appl. Rad. and Isotopes, 33, 779-780.

43. Singh T, Singh M and Virk H S (1982)
A new track etchant for plastic detectors.
Nucl. Tracks, 6, 197-199.
44. Singh S and Virk H S (1982)
Uranium estimation in minerals and rocks, an application of solid state nuclear track detectors.
J. Earth and Space Phys., 11, 1-5.
45. Virk H S, Suri P S and Singh S (1982)
Uranium estimation in plants of Siwalik Himalayas, Himachal Pradesh, India.
Proc. 11th Int. Conf. on SSNTDs, Bristol (UK) 1981, Pergamon Press, pp.587-590.
46. Singh S and Virk H S (1983)
Uranium estimation in Mussourie phosphorites using solid state nuclear track detectors.
Ind. J. Pure and Appl. Phys., 21, 125-126.
47. Modgil S K and Virk H S (1983)
Inter-laboratory standardization of glass dosimeters.
Nucl. Instrum. and Meth., 212, 367-370.
48. Singh S and Virk H S (1983)
Uranium estimation in some indian toothpastes.
Indian J. Pure Appl. Phys., 21, 550-551.
49. Virk H S (1983)
Conflicting chronology of tektites.
Proc. 3rd National Conf. on SSNTDs, GNDU, Amritsar, pp.1-7.
50. Modgil S K and Virk H S (1983)
Effect of etchant parameters on track development in soda-lime glass detector.
Proc. 3rd National Conf. on SSNTDs, GNDU, Amritsar pp.59-67.
51. Singh M, Singh N P, Singh S and Virk H S (1983)
Track recording by sensitization in plastics.
Proc. 3rd National Conf. on SSNTDs, GNDU, Amritsar, pp.24-27.
52. Virk H S (1983)
Conference report on Third Indian National seminar-cum-Workshop on SSNTDs, Amritsar, India, 7-9 March;
Nucl. Tracks , 7, 151-152.
53. Modgil S K and Virk H S (1984)
Effect of etchant concentration and temperature on bulk etch rate for solid state track detectors. Nucl. Tracks and Rad. Meas., 8, 95-98.

54. Modgil S K and Virk H S (1984)
Track annealing studies in glasses and minerals.
Nucl. Tracks and Rad. Meas., 8, 355-360.
55. Singh M, Singh N P, Singh S and Virk H S (1984)
Radon-thoron estimation using LR-115 plastic track detector.
Nucl. Tracks and Rad. Meas., 8, 415-418.
56. Singh N P, Singh M, Singh S and Virk H S (1984)
Uranium and radon estimation in water and plants using SSNTD.
Nucl. Tracks and Rad. Meas., 8, 483-486.
57. Singh N P, Singh M, Singh S and Virk H S (1984)
Etching studies of fission damage in quartz.
Nucl. Tracks and Rad. Meas., 8, 41-44.
58. Virk H S and Koul S L (1984)
Radiation damage dating of apatite and zircon from Eastern Ghats (Andhra Pradesh)
J. Assoc. Explor. Geophys., 4, 19-22.
59. Singh S and Virk H S (1984)
Fission track dating, uranium estimation and provenance determination of garnets
of Cape Camorin sediments, Tamil Nadu (India).
Geoviews, 11, 31-34.
60. Virk H S (1984)
Energy problems and planning in India.
Renewable Energy Sources: International Progress (Ed. T. N. Veziroglu), Energy
Research 4B, Elsevier, pp. 427-434.
61. Singh N P, Singh M, Singh S and Virk H S (1984)
Etching studies of fission damage in quartz.
Ind. J. of Pure & App. Phys., 22, 496-497.
62. Singh S and Virk H S (1984)
Uranium estimation in Toothpastes and Fruit Juices Using Solid State Nuclear Track
Detectors.
Nucl. Tracks and Rad. Meas., 8, 419-422.
63. Singh S, Sandhu A S and Virk H S (1985)
A correction for thermally affected fission tracks in phlogopite mica by Age-Plateau
method.
Ind. J. Pure and Appl. Phys., 23, 487-488.

64. Modgil S K and Virk H S (1985)
Annealing of fission fragment tracks in inorganic solids.
Nucl. Instrum. and Methods in Phys. Res. B, 12, 212-218.
65. Singh S and Virk H S (1986)
Fission track dating of some apatites from Rajasthan state, India.
J. Earth and Space Phys., 15, 1-8.
66. Singh S, Sandhu A S and Virk H S (1986)
Etching and annealing studies of fission tracks in phlogopite mica and their application in dating.
J. Earth and Space Phys., 15, 9-17.
67. Virk H S (1986)
Fission track dating of volcanic eruptions.
Mineralogical J. of Japan, 13, 34-38.
68. Singh N P, Singh M, Singh S and Virk H S (1986)
Uranium and thorium analysis in geological samples using SSTD- An application of F/ α technique.
Ind. J. Pure and Appl. Phys., 24, 143-144.
69. Singh S, Singh D, Sandhu A S and Virk H S (1986)
A study of etched track anisotropy in apatite.
Mineralogical J. of Japan, 13, 75-85.
70. Sandhu A S, Singh S and Virk H S (1986)
Etching and annealing studies of fission tracks in chlorite and their applications in dating.
Mineralogical J. of Japan, 13, 177-186.
71. Sandhu A S, Singh S, Modgil S K and Virk H S (1986)
Track annealing studies in some micaceous minerals.
Nucl. Tracks and Rad. Meas., 12, 917-920.
72. Singh M, Singh N P, Singh S and Virk H S (1986)
Calibration of radon detectors.
Nucl. Tracks and Rad. Meas., 12, 739-742.
73. Singh N P, Singh M, Singh S and Virk H S (1986)
Uranium estimation in Siwalik Vertebrate fossil bones using SSTD.
Nucl. Tracks and Rad. Meas., 12, 793-796.
74. Singh S, Singh D, Sandhu A S, Singh G and Virk H S (1986)
A study of etched track anisotropy in apatite.
Nuclear Tracks, 12, 927-930.

75. Singh N P, Singh M, Singh S and Virk H S (1986)
Uranium and thorium analysis in geological samples using plastic track detectors.
Nucl. Tracks and Rad. Meas., 12, 883-886.
76. Singh M, Ramola R.C., Singh N P, Singh S and Virk H S (1986)
Radon survey for uranium prospecting using alpha detectors.
Nucl. Tracks and Rad. Meas., 12, 879-882.
77. Singh G, Devi S, Singh S and Virk H S (1986)
Track etch rate characteristics of Makrofol polycarbonate plastic detectors exposed to Xe ions.
Nucl. Tracks and Rad. Meas., 12, 383-386.
78. Singh N P, Singh M, Singh S and Virk H S (1986)
A fission track technique used for biogeochemical prospecting in northern Himalayas.
J. Geochem. Exploration, 26, 259-265.
79. Virk H S (1986)
Radon monitoring and earthquake prediction.
Proc. Symp. Earthquake Prediction-Present Status.
University of Poona, Pune, India, p.157-162.
80. Singh N P, Singh M, Singh S and Virk H S (1986)
Method for estimation of uranium, thorium and potassium in rocks using gamma ray spectrometry.
Ind. J. Pure and Appl. Phys., 24, 565-569.
81. Sandhu A S, Singh S and Virk H S (1986)
Etching and annealing studies of fission tracks in chlorite and their applications in dating.
Nuclear Tracks: Application to Earth Science, Space Physics and Nuclear Physics (Ed. K.K.Sharma) Dehradun (India), pp. 67-77.
82. Virk H S (1986)
Application of SSNTDs for microanalysis, prospecting and earthquake prediction.
Bull. Ind. Geol. Assoc., 19, 179-184.
83. Virk H S, Modgil S K and Bhatia R K (1986)
Activation energy for the annealing of radiation damage in CR-39 : An intrinsic property of detector.
Nucl. Tracks and Radiat. Meas., 11, 323-325.

84. Virk H S (1986)
Ibn Sina's approach to Physics.
Ind. J. History of Sci., 21 , 374-378
85. Sandhu A S, Singh S and Virk H S (1987)
Annealing of fission fragment tracks in micaceous minerals.
Mineral. J. of Japan, 13, 254-259.
86. Sandhu A S, Singh S and Virk H S (1987)
Anisotropic track annealing in apatite.
Mineral. Journ. of Japan, 13, 307-313.
87. Sandhu A S, Singh S and Virk H S (1987)
Annealing studies of fission tracks in apatite.
Ind. J. Pure & Appl. Phys., 25, 97-99.
88. Ramola R C, Singh M, Singh S and Virk H S (1987)
Measurement of indoor radon concentration using LR-115 plastic track detector.
Ind. J. Pure and Appl. Phys., 25, 127-129.
89. Virk H S, Modgil S K and Singh G (1987)
Fission track annealing models and the concept of single activation energy.
Nucl. Instrum. and Meth. in Phys. Res. B, 21, 68-71.
90. Singh N P, Singh S and Virk H S (1987)
Uranium and radon concentration in Ganges waters in U.P Himalayas - some preliminary results.
Ind. J. Pure and Appl. Phys., 25, 87-89.
91. Ramola R C, Singh M, Singh S and Virk H S (1987)
Efficiency of radon detector LR-115.
Ind. J. Pure and Appl. Phys., 25, 235-236.
92. Singh R C and Virk H S (1987)
Internal heating effect during electrochemical etching of lexan polycarbonate.
Nucl. Instrum. and Meth. in Phys. Res.B, 29, 579-582.
93. Singh R C and Virk H S (1987)
Relation between internal heating effect and track density during electrochemical etching of Lexan polycarbonate.
Ind. J. Pure and Appl. Phys., 25, 237-238.
94. Bhatia R K and Virk H S (1987)
Annealing study of heavy ion tracks in CR-39
Ind. J. Pure and Appl. Phys., 25, 282-283.

95. Singh N P, Singh S and Virk H S (1987)
Elemental analysis of Siwalik fossil bones using X-ray spectrometry.
Ind. J. Pure and Appl. Phys., 25, 411-412.
96. Sandhu A S, Singh S and Virk H S (1987)
Influence of crystallographic structure on the activation energy of fission track annealing in apatite.
Ind. J. Pure and Appl. Phys., 25, 499-500.
97. Virk H S (1987)
Reality: Physical, Metaphysical and Mystical.
History and Philosophy of Science (Ed. H.S.Virk) :Proc. First National Seminar, GND University, Amritsar, pp. 79-90.
98. Singh G, Modgil S K and Virk H S (1987)
Annealing of heavy ion tracks in soda-lime glass detector.
Nucl. Tracks: Proc. 5th National SSNTD Conf., SINP, Calcutta, p. 89-93.
99. Sandhu A S, Singh S and Virk H S (1987)
Fission track annealing in apatite.
Nucl. Tracks: Proc 5th National SSNTD Conf., SINP, Calcutta, p.94-98.
100. Singh M, Ramola R C, Singh N P, Singh S and Virk H S (1987)
The study of radon diffusion in air and soil.
Nucl. Tracks: Proc 5th National SSNTD Conf., SINP, Calcutta, p.134-140.
101. Virk H S (1987)
Track annealing models and concept of single activation energy.
Nucl. Tracks: Proc. 5th National SSNTD Conf., SINP, Calcutta, p. 200-206.
102. Virk H S (1987)
Islamic tradition in medicine and its influence on Europe.
History and Philosophy of Science (Ed. H.S.Virk) :Proc. First National Seminar, GND University, Amritsar, pp. 27-33.
103. Singh G and Virk H S (1987)
Track annealing studies in soda-lime glass detector.
GSI Scientific Report (Darmstadt) p.240.
104. Bhatia R K, Sandhu A S and Virk H S (1987)
Etch rate variation of annealed nuclear tracks in CR-39.
GSI Scientific Report (Darmstadt) p.241.
105. Sandhu A S, Bhatia R K, Singh S and Virk H S (1987)
Track annealing studies in muscovite mica.
GSI Scientific Report (Darmstadt) p.242.

106. Sandhu A S, Singh S and Virk H S (1988)
Anisotropic etching and annealing studies of fission tracks in quartz.
Mineral. Journ. of Japan, 14, 1-11.
107. Singh M, Ramola R C, Singh N P, Singh S and Virk H S (1988)
Measurement of soil gas radon at Amritsar.
Geophys. Res. Bull., 26, 8-12.
108. Singh M, Ramola R C, Singh N P, Singh S and Virk H S (1988)
Influence of meteorological parameters on soil gas radon.
J. Assoc. Explor. Geophys., 9, 85-90.
109. Singh J, Singh S and Virk H S (1988)
Etching studies of CR-39 plastic track recorder.
Nucl. Track and Rad. Meas., 15, 187-190.
110. Sandhu A S, Singh S and Virk H S (1988)
Activation energy of track annealing in minerals as a function of interatomic spacing.
Nucl. Track and Rad. Meas., 15, 235-238.
111. Bhatia R K and Virk H S (1988)
Annealing kinetics of heavy ion tracks in CR-39.
Nucl. Track and Rad. Meas., 15, 239-240.
112. Sandhu A S, Singh S and Virk H S (1988)
Track annealing studies in muscovite mica.
Nucl. Track and Rad. Meas., 15, 241-244.
113. Sandhu A S, Singh S and Virk H S (1988)
Anisotropic etching and annealing studies of fission tracks in zircon.
Nucl. Track and Rad. Meas., 15, 245-247.
114. Bhatia R K and Virk H S (1988)
Post irradiation annealing in plastic detector CR-39.
Nucl. Track and Rad. Meas., 15, 249-251.
115. Singh G and Virk H S (1988)
Annealing of heavy ion radiation damage in soda-glass detector.
Nucl. Track and Rad. Meas., 15, 253-256.
116. Singh R C and Virk H S (1988)
Electrochemical etching of fission fragment tracks in cellulose triacetate.
Nucl. Track and Rad. Meas., 15, 301-303.

117. Singh S, Singh H, Singh N P and Virk H S (1988)
Applications of plastic track detectors in thermal neutron dosimetry and boron estimation in plants.
Nucl. Track and Rad. Meas., 15, 507-510.
118. Ramola R C, Singh S and Virk H S (1988)
Radon studies over main boundry thrust near Dehradun (India).
Nucl. Track and Rad. Meas., 15, 617-619.
119. Ramola R C, Singh S and Virk H S (1988)
A model for the correlation between radon anomalies and the magnitude of earthquakes.
Nucl. Track and Rad. Meas., 15, 689-692.
120. Singh N P, Singh S and Virk H S (1988)
F/ α track- etch method for uranium, thorium and isotopic disequilibrium study of geological samples.
Nucl. Track and Rad. Meas., 15, 693-697.
121. Singh S, Singh L, Singh J and Virk H S (1988)
Fission track dating of some copper ore formations in India.
Nucl. Track and Rad. Meas., 15, 715-718.
122. Virk H S, Singh G and Kaur S (1988)
Fission track dating of natural glasses.
Nucl. Track and Rad. Meas., 15, 719-721.
123. Sandhu A S, Singh S and Virk H S (1988)
The effect of anisotropic track etching and annealing on fission track age determination in minerals.
Nucl. Track and Rad. Meas., 15, 723-725.
124. Ramola R C, Singh S and Virk H S (1988)
Uranium and radon estimation in some water samples from Himalayas.
Nucl. Track and Rad. Meas., 15, 791-793.
125. Kaur A, Singh S and Virk H S (1988)
A study of uranium uptake in plants.
Nucl. Track and Rad. Meas., 15, 795-798.
126. Sandhu A S, Singh S and Virk H S (1988)
Anisotropic track etching in apatite.
Indian J. Pure and Appl. Phys., 26, 351-355.
127. Singh N P, Singh S and Virk H S (1988)

- A fission track technique used for hydrogeochemical prospecting in Northern India.
Nucl. Geophys., 2, 263-267.
128. Virk H S, Modgil S K, Singh G and Bhatia R K (1988)
Annealing characteristics of heavy ion radiation damage in SSNTDs and concept of single activation energy.
Nucl. Instrum. Meth. Phys. Res. B., 32, 401-404.
129. Singh R C, Bhatia R K and Virk H S (1988)
Annealing study of heavy ion tracks in Makrofol-N using electrochemical etching technique.
Ind. J. Pure and Appl. Phys., 26, 673-674.
130. Bhatia R K and Virk H S (1988)
Etching studies of radiation damage in CR-39.
Ind. J. Pure and Appl. Phys., 26, 428-430.
131. Ramola R C, Sandhu A S, Singh S and Virk H S (1988)
Radon measurement in human environment using nuclear track etch technique.
Nucl. Data for Science and Tech. Japan, JAERI, p.1091-1094.
132. Singh R C and Virk H S (1988)
Electrochemical etching of fission fragment tracks in muscovite mica and soda glass.
Nucl. Instrum. and Meth. in Phys. Res. B, 30, 598-600.
133. Sandhu A S, Bhatia R K, Ramola R C, Singh S and Virk H S (1988)
Thermal annealing of nuclear tracks in minerals.
GSI Scientific Report (Darmstadt) p.244.
134. Bhatia R K, Sandhu A S, Singh R C and Virk H S (1988)
Annealing studies in plastic track detectors.
GSI Scientific Report (Darmstadt) p.245.
135. Sandhu A S, Ramola R C, Singh S and Virk H S (1989)
Annealing of heavy ion radiation damage in muscovite mica and concept of single activation energy.
Radiat. Eff., 107, 75-78.
136. Bhatia R K and Virk H S (1989)
Heavy ion radiation damage annealing models-A new interpretation.
Radiat. Eff., 107, 167-173.
137. Sandhu A S, Singh L, Ramola R C, Singh S and Virk H S (1989)
Etching studies of radiation damage in natural zircon.
Indian J. Pure and Appl. Phys., 27, 237-239.

138. Virk H S, Singh G and Bigazzi G (1989)
Fission track dating of Lipari obsidians.
Ind. J. Pure and Appl. Phys., 27, 187-188.
139. Ramola R C, Sandhu A S, Singh M, Singh S and Virk H S (1989)
Geochemical exploration of uranium using radon measurement techniques.
Nucl. Geophys., 3, 57-69.
140. Ramola R C, Singh M, Sandhu A S, Singh S and Virk H S (1989)
Radon-Thoron discrimination using a polythene foil: An application in uranium exploration.
Nucl. Geophys., 3, 137-139.
141. Singh N P, Singh M, Singh B and Virk H S (1989)
A laboratory study of diffusion of radon through soil.
Indian J. Pure and Appl. Phys., 27, 46-48.
142. Singh R C, Bhatia R K and Virk H S (1989)
Preparation and application of microfilters.
Ind. J. Pure and Appl. Phys., 27, 285-286.
143. Bhatia R K and Virk H S (1989)
Influence of etching conditions on the efficiency and critical angle of plastic detector Makrofol-N.
Ind. J. Pure and Appl. Phys., 27, 249-250.
144. Singh R C and Virk H S (1989)
Effect of variation of incident angle of alpha particles at various field strengths on ECE response of CR-39.
Nucl. Instrum. Meth. Res.B, 36, 332-334.
145. Singh N P, Singh S and Virk H S (1989)
Autoradiographic study of U and Th in quartzites of Kullu area, India.
Nucl. Geophys., 3, 119-124.
146. Singh J, Singh L, Ramola R C, Singh M, Singh S and Virk H S (1989)
Radon pollution studies in the environs of radioactive areas using SSNTDs.
Nucl. Geophys., 3, 297-298.
147. Singh G and Virk H S (1989)
Activation energy for the annealing of heavy ion radiation damage in a sodaglass detector.
Nucl. Tracks Radiat. Meas., 16, 279-281.
148. Singh L, Sandhu A S, Singh S and Virk H S (1989)
Thermal annealing of heavy ion tracks in muscovite mica.
Radiat. Eff., 108, 257-266.

149. Singh G and Virk H S (1989)
Heavy ion radiation damage annealing in glass detectors.
Nucl. Instrum. Meth. Phys. Res. B, 44, 103-106.
150. Virk H S (1989)
Forecasting of Earthquakes.
Science and Culture, 55, 338-344.
151. Sandhu A S, Singh L, Ramola R C, Singh S and Virk H S (1990)
Annealing kinetics of heavy ion radiation damage in crystalline minerals.
Nucl. Instrum. Meth. Phys. Res. B, 46, 122-124.
152. Singh L, Sandhu A S, Singh S and Virk H S (1990)
Etching and annealing kinetics of heavy ion tracks in quartz.
Nucl. Instrum. Meth. Phys. Res. B, 46, 149-151.
153. Bhatia R K, Singh R C and Virk H S (1990)
Anomalous behaviour of environment affected CR-39 at elevated temperatures.
Nucl. Instrum. Meth. Phys. Res. B, 46, 358-360.
154. Ramola R C, Singh M, Sandhu A S, Singh S and Virk H S (1990)
The use of radon gas as an earthquake precursor.
Nucl. Geophys., 4, 275-287.
155. Virk H S (1990)
Radon studies for Earthquake prediction, Uranium exploration
and Environmental pollution : A review.
Ind. J. of Physics, 64A, 182-191.
156. Sandhu A S, Singh S and Virk H S (1990)
Effect of nature of the etchant on anisotropic track etching in quartz.
Ind. J. Pure and Appl. Phys., 28, 73-75.
157. Sandhu A S, Ramola R C, Singh S and Virk H S (1990)
Fission track annealing in minerals.
Nucl. Tracks Radiat. Meas., 17, 267-269.
158. Sandhu A S, Ramola R C, Singh S and Virk H S (1990)
Etching and annealing characteristics of fission tracks in garnet.
Indian J. of Pure and Appl. Phys., 28, 522-524.
159. Sandhu A S, Ramola R C, Singh S and Virk H S (1990)
Fission track dating of zircon crystal.
Ind. J. Phys., 64A, 352-357.

160. Singh G and Virk H S (1990)
Radiation damage annealing models in glass detectors.
Radiat. Eff. and Def. in Solids, 114, 51-52.
161. Singh G and Virk H S (1990)
Thermal effects of heavy ion radiation damage in glass track detectors.
Radiat. Eff. and Def. in Solids , 114, 219-224.
162. Virk H S (1990)
Report on 15th International Conference on Particle Tracks in Solids.
Science and Culture, 56, 363-366.
163. Singh M, Ramola R C, Singh S and Virk H S (1990)
The influence of moisture content on radon diffusion in soil.
Nucl. Geophys., 4, 479-482.
164. Virk H S (1990)
Heavy ion ranges in plastic track detectors.
GSI Scientific Report (Darmstadt), p.256.
165. Virk H S (1990)
Earthquake forecasting using radon signals.
Physics Education, 7, 221-228.
166. Singh L, Singh J, Singh S and Virk H S (1991)
Fission track age of hydrothermal uranium veins in phlogopite and phase differentiation in minerals
Nuclear Geophysics, 5, 361-364.
167. Virk H S (1991)
Single activation energy model of radiation damage in solid state nuclear track detectors.
Current Science, 61, 386-390.
168. Singh M, Ramola R C, Singh B, Singh S and Virk H S (1991)
Sub-surface soil gas radon changes associated with earthquakes.
Nucl. Tracks and Radiat. Meas., 19, 417-420.
169. Ramola R C, Singh M., Singh S and Virk H S (1991)
Laboratory studies on the behaviour of radon diffusion through soil.
Nucl. Tracks and Radiat. Meas., 19, 389-390.
170. Singh J, Singh L, Singh S and Virk H S (1991)
Seasonal variation study of radon pollution at radioactive sites.
Nucl. Tracks and Radiat. Meas., 19, 415-416.

171. Singh S, Singh L, Singh J, and Virk H S (1991)
Heavy ion radiation damage annealing in garnet crystal.
Nucl. Tracks and Radiat. Meas., 19, 121-126.
172. Singh G, Kaur R, and Virk H S (1991)
Track etching studies in phosphate glass detectors
Nucl. Tracks and Radiat. Meas., 19, 655-656.
173. Virk H S (1991)
Status and perspectives of track research at Guru Nanak Dev University, Amritsar.
Nucl. Tracks and Radiat. Meas., 19, 861-867.
174. Singh G and Virk H S (1991)
Track annealing studies in glass detectors using optical absorption spectroscopy.
GSI Scientific Report (Darmstadt), GSI 92-1, p.262.
175. Singh R C and Virk H S (1991)
Role of polarization and tensile strength in the process of electrochemical etching (ECE).
Nucl. Tracks and Radiat. Meas., 18, 419-421.
176. Ramola R C, Singh M, Singh S and Virk H S (1992)
Environmental radon studies using solid state nuclear track detectors.
J. Environ. Radioactivity, 15, 95-102.
177. Singh M, Ramola R C, Singh B, Singh S and Virk H S (1992)
Radon anomalies: Correlation with seismic activities in Northern India.
"Radon Monitoring in Radioprotection, Environmental /Earth Sciences" (Eds.
L. Tommassino & H.A. Khan), World Scientific, Singapore, 1993, pp. 359-377.
178. Virk H S (1992)
Heavy ion radiation damage annealing in track recording insulators and single activation
energy model.
Nucl. Instrum. and Meth. Phys. Res. B, 65, 456-458 .
179. Virk H S and Singh B (1992)
Correlation of radon anomalies with earthquakes in Kangra valley.
Nucl. Geophys., 6, 293-300.
180. Singh N P, Singh B, Singh K and Virk H S (1992)
Autoradiographic study of uranium and thorium in fossil bones.
Nucl. Geophys., 6, 287-291.
181. Singh B and Virk H S (1992)
Radon measurement for earthquake prediction in Northern India.
Trans. Amer. Nucl. Soc., 65, 50-52.
182. Virk H S, Bedi M and Singh L (1992)

Aspect ratio of heavy ion tracks in mica and CR-39 plastic.
GSI Scientific Report (Darmstadt), GSI 93-1, p. 287.

183. Singh G, Kaur R and Virk H S (1992)
Etching characteristics in phosphate glass detectors.
GSI Scientific Report (Darmstadt), GSI 93-1, p. 293.
184. Virk H S (1992)
Abdus Salam: A grand unifier of men and forces.
Abdus Salam: As We Know Him (Ed. S.M.W. Ahmed), World Scientific,
Singapore, pp. 79-85.
185. Virk H S and Singh B (1993)
Radon anomalies in soil gas and groundwater as earthquake precursor phenomena.
Tectonophysics, 227, 215-224.
186. Virk H S, Kaur R and Singh G (1993)
Heavy ion ranges in glass detectors.
Nucl. Tracks & Radiat. Meas., 22, 245-248.
187. Singh B, Singh S and Virk H S (1993)
Earthquake prediction studies in Kangra valley using plastic track recorders.
Nucl. Tracks & Radiat. Meas., 22, 459-460.
188. Virk H S (1993)
Heavy ion ranges in plastic track detectors.
Nucl. Tracks & Radiat. Meas., 22, 243-244.
189. Bajwa B S, Singh N P and Virk H S (1993)
Estimation of uranium and thorium in Siwalik fossil bones.
Nucl. Tracks & Radiat. Meas., 22, 851-852.
190. Singh B, Singh S and Virk H S (1993)
Radon diffusion studies in air, gravel, sand, soil and water.
Nucl. Tracks & Radiat. Meas., 22, 455-458.
191. Singh S, Singh L and Virk H S (1993)
Correction methods in fission track dating.
Nucl. Tracks & Radiat. Meas., 22, 827-830.
192. Singh L, Singh J, Singh S and Virk H S (1993)
Recovery stages of heavy ion produced defects in quartz crystal.
Nucl. Tracks & Radiat. Meas., 22, 229-232.
193. Virk H S (1993)
Radon and earthquake prediction in India: Present status.

Nucl. Tracks & Radiat. Meas., 22, 483-494.

194. Singh N P and Virk H S (1993)
Natural radioactivity in fossil bones.
Proc. Int. Conf. on High Levels of Natural Radiation, Ramsar, Iran (1990).
IAEA Publ. Vienna, 1993, pp. 221-228.
195. Virk H S (1993)
Highlights of the fifteenth International Conference on Particle Tracks in Solids.
Proc. of Eighth National Conference on Particle Tracks in Solids, Jodhpur, pp.67-72.
196. Singh G and Virk H S (1993)
Etching and annealing behaviour of nuclear tracks in glass detectors.
Proc. of Eighth National Conference on Solid State Nuclear Track Detectors(SSNTD),
A.M.U., Aligarh, Oct.27-29,1993, pp.89-94.
197. Virk H S (1993)
Life and works of Puran Singh.
Ind. J. Hist. of Science, 28 , 277-285.
198. Singh B and Virk H S (1994)
Investigation of radon -222 in soil-gas as an earthquake precursor.
Nucl. Geophys., 8, 185-193.
199. Virk H S and Singh R C (1994)
Alternative approach to fast neutron dosimetry.
Ind. J. of Pure and Appl. Phys., 32, 526-527.
200. Virk H S and Bedi Mona (1994)
Aspect ratio of heavy ion tracks in mica and CR-39 plastic.
Ind. J. of Pure and Appl. Phys., 32, 364-367.
201. Virk H S and Singh B (1994)
Radon recording of Uttarkashi earthquake.
Geophys. Res. Letters., 21, 737-740.
202. Singh G and Virk H S (1994)
Annealing characteristics of nuclear tracks in glass detectors using optical
absorption spectroscopy.
J. Radioanal. and Nucl. Chem., 180, 139 - 144.
203. Randhawa G S, Garg A K, Singh G and Virk H S (1994)
Heavy ion ranges in soda-glass detector.
Ind. J. Pure and Appl. Phys., 32, 846-848.
204. Virk H S (1994)

- Scope for radon monitoring for earthquake studies in India.
Bull. of Radiat. Protection, BARC, Bombay, 17, 29-32.
205. Virk H S (1995)
Single activation energy model of radiation damage in SSNTDs.
Radiat. Eff. and Def. in Solids, 133, 87-95.
206. Virk H S and Singh B (1995)
Correlation of radon anomalies with the Uttarkashi earthquake.
J. Geol. Soc. of India, 30, 125-132.
207. Randhawa G S, Garg A K and Virk H S (1995)
Ranges study of heavy ion in plastic track detectors.
Radiat. Meas. 24 , 197-199.
208. Randhawa G S and Virk H S (1995)
Particle identification by measurement of track cone length as function of residual range of heavy ions in CR-39 and Lexan polycarbonate.
Appl. Radiat. & Isotopes 46 , 351-353.
209. Virk H S (1995)
Radon monitoring of microseismicity in the Kangra and Chamba valleys of Himachal Pradesh, India.
Nucl. Geophys. 9 , 141-146.
210. Bajwa B S , Singh N P and Virk H.S (1995)
Uranium estimation and isotopic disequilibrium study of Siwalik fossil bones.
Nucl. Geophys. 9 , 269-272.
211. Virk H S, Walia Vivek and Sharma Anand K (1995)
Radon precursory signals of Chamba earthquake.
Curr. Sci. 69 ,452-454.
212. Virk H S and Singh B (1995)
Radon recording of the Uttarkashi earthquake.
Gas Geochemistry (edited by Claude Dubois) Science Review, Northwood ,UK,
pp.221 - 230.
213. Randhawa G S and Virk H S (1995)
Track etching characteristics of glass track detectors.
Appl. Radiat & Isot,47, 351-354.
214. Virk H S and Kaur S Amrita (1995)
Conduction of bacteria and blood cells through polycarbonate sieves.
Ind. J. Pure Appl. Phys., 33, 350-352.

215. Bajwa B S and Virk H S (1996)
Autoradiography for U, Th, and isotopic disequilibrium study of the Siwalik fossil bones.
Environment International (Suppl.), 22(1), 379-382.
216. Randhawa G S, Sharma S K and Virk H S (1996)
Inter-comparison of experimental and theoretical range values in plastic detectors.
Nucl. Instrum. Meth. Phys. Res. B, 108,7-10.
217. Virk H S and Randhawa G S (1996)
Aspect ratio of heavy ion tracks in different track recording dielectrics.
Proc. of Ninth Int. Conf. on Ion Beam Modification of Materials, Canberra, Australia, 5-10 Feb., 1995, pp. 694-697.
218. Randhwa G S and Virk H S (1996)
Stopping power and range of heavy ions in solids: A comparative study.
Radiat. Meas. 26, 541-560.
219. Virk H S (1996)
A critique of empirical scaling relations between earthquake magnitude, epicentral distance and precursor time for interpretation of radon data.
J. Earthquake Prediction Res., 5, 574-583.
220. Singh B and Virk H S (1996)
Effect of soil and sand moisture content on radon diffusion using plastic track-etched detector.
Radiat. Meas. 26, 49-50.
221. Virk H.S (1996)
Radon studies for earthquake prediction.
Himalayan Geology, 17, 91-103.
222. Virk H S, Singh M and Ramola R C (1997)
Radon monitoring for uranium exploration, earthquake prediction and environmental health hazard in Himachal Pradesh, India: An appraisal.
Rare Gas Geochemistry (Ed. H.S.Virk) Proc. 3rd ICRGG held at Amritsar, Dec.10-14,1995, pp. 89-99.
223. Virk H S and Sharma Anand K (1997)
Micro-seismicity trends in N-W Himalaya using radon signals.
Rare Gas Geochemistry (Ed. H.S.Virk) Proc. 3rd ICRGG held at Amritsar, Dec.10-14, 1995, pp. 117-135.
224. Virk H S and Randhawa G S (1997)

Stopping power and range relations for low and high Z ions in solids: A critical analysis.
Proc. 3rd Int. Conf. on Material Science Applications of Ion Beam Techniques held at
Seeheim, Germany, 9-12 September.
Material Sci. Forum (Trans. Tech. Publications), pp. 33-40.

225. Kaur Amrita S, Virk H S and Chkravarti S K (1997)
Application of ion track filters: Our experience.
Proc. 3rd Int. Conf. on Material Science applications of Ion Beam Techniques held at
Seeheim, Germany, 9-12 September.
Material Sci. Forum (Trans. Tech. Publications), pp. 467-470.
226. Randhawa G S, Kumar Shyam and Virk H S (1997)
Response of different plastic track detectors to α -particle.
Radiat. Meas. 27, 523-527.
227. Randhawa G S and Virk H S (1997)
Thermal annealing of latent tracks in soda and BP-1 phosphate glasses.
Appl. Radiat. and Isotopes., 48, 447-451.
228. Virk H S (1997)
Uranium and radon surveys in Siwalik Himalayas.
IARP Bulletin 20(3), 130-142.
229. Virk H S, Sharma Anand K and Walia Vivek (1997)
Correlation of alpha-logger radon data with microseismicity in N-W Himalaya.
Curr. Sci. 72, 656-663 .
230. Virk H S, Randhawa G S and Sandhu A S (1997)
Fission track dating of obsidian artefacts from Columbia.
Curr. Sci., 72, 884-885.
231. Randhawa G S and Virk H S (1997)
Identification of charged particles by etching the solid state nuclear track detectors
in successive intervals.
Ind. J. Pure and Appl. Phys., 35, 479-482.
232. Jain R K, Virk H S, Rao J Rama and Bose S K (1997)
Measurement of fast neutron induced fission cross section of Thorium using Lexan
track detector.
Pramana, 49 (5), 515-519.
233. Virk H S (1997)
Uranium and radon surveys in Western Himalaya.
Curr. Sci. 73(6) 536-538.
234. Virk H S (1997)
Radioactivity survey in thermal springs of N-W Himalaya.

- Proc. 33rd Int. Conf. on Hot Springs (SITH), Hakone, Japan, pp. 143-146.
235. Randhawa G S and Virk H S (1997)
Study of charged particle tracks in barium phosphate (BP-1) glass.
Nucl. Instrum. and Meth., B132 (1997) 653-659.
 236. Jain R K, Randhawa G S, Bose S K and Virk H S (1997)
Study of etching and annealing characteristics of ^{238}U ion tracks in Trifol-TN polycarbonate.
J. Phys D: Appl. Phys., 31, 328-333.
 237. Virk H S (1997)
A genius called Abdus Salam: An obituary.
Curr. Sci., 72, 892-894.
 238. Ramola R C, Singh M, and Virk H S (1998)
Radon monitoring and earthquake prediction.
"Earthquake Prognostics Strategy- Against the Impact of Impending Earthquakes" Vieweg
Publication Series, Wiesbaden, Germany, pp.91-108.
 239. Virk H S (1998)
Postdiction of Uttarkashi and Chamba earthquakes using radon precursory signals.
J. Earthquake Prediction Research, 7, 89-97 .
 240. Jain R K, Randhawa G S, Bose S K and Virk H S (1998)
Etching and annealing kinetics of ^{238}U ion tracks in Makrofol-N plastic.
Nucl. Instrum. Meth., 140, 367-372.
 241. Virk H S and Kaur S Amrita (1998)
Single pore sensor for water pollution control.
Environment and Development (Eds. I.S. Grover and A.K. Thukral), Scientific
Publishers, Jodhpur, India, pp.217-221.
 242. Virk H S and Sharma Navjeet (1998)
Indoor radon levels in the radioactive areas of Himachal Pradesh: An intercomparison of
active and passive techniques.
Ind. J. Rad. Prot. & Environ., 21(2), 103-106.
 243. Virk H S, Kumar Naresh, Sharma Navjeet and Bajwa B S (1998)
Alpha-Guard radon survey in soil gas and dwellings of some uranium-rich areas of
Himachal Pradesh, India.
Curr. Sci., 75, 430-431.
 244. Virk H S, Kumar Naresh and Sharma Anand K (1998)
Radon/Helium survey of thermal springs of Parbati, Beas and Sutlej valleys in Himachal
Himalaya.

- J. Geol. Soc. India, 52, 523-528.
245. Virk H S, Kaur S Amrita and Randhawa G S (1998)
Effects on insulators of swift-heavy-ions radiation: Ion track technology.
J. of Phys. D: App. Phys., 31, 3139-3145.
 246. Virk H S and Kaur Amrita S. (1998)
Ion Track Filters: Properties, Development and Applications.
Curr. Sci., 75 (8), 765-770.
 247. Bajwa B S and Virk H S (1998)
Indoor radon levels in the environs of Guru Nanak Dev University Campus.
Radon and Thoron in the Human Environment (Eds. Akira Katase & M. Shimo),
World Scientific, Singapore, pp. 435-439.
 248. Virk H S (1998)
Prof. Puran Singh (1881-1931): Founder of Chemistry of forest products in India.
Curr. Sci., 74, 1023-1024.
 249. Virk H S (1998)
Prof. Bawa Kartar Singh: A pioneer in Stereochemistry in India.
Curr. Science , 75(7) , 738-739.
 250. Virk H S (1999)
Indoor radon levels in the radioactive sites of Himachal Pradesh, India.
Environ. International , 25, 47-51.
 251. Virk H S (1999)
“Radon Measurements by Etched Track Detectors : Applications in Radiation
Protection, Earth Sciences and the Environment ” by S.A. Durrani and R. Ilic.
Rad. Phys. and Chem. (Book Review), 54(3), 323-324 .
 252. Virk H S, Sharma Navjeet and Bajwa B S (1999)
Environmental radioactivity: A case study of Himachal Pradesh, India.
J. Environ. Radioactivity, 45, 119-127.
 253. Virk H S (1999)
Radon/Helium studies for earthquake prediction in N-W Himalaya.
Proc. 4th Int. Conf. on Rare Gas Geochemistry, Rome, Italy, Oct. 8-10,1997, Il Nuovo
Cimento, 22, 423-429.
 254. Sharma K Anand, Walia Vivek, Kumar Naresh and Virk H S (1999)
Helium/Radon studies and its use as a predictive tool for earthquakes in N-W
Himalaya. Proc. XI National Symposium on SSNTDs, GND University,

Amritsar, Oct. 12- 14, 1998, pp. 199-209.

255. Virk H S, Walia Vivek, Sharma K Anand, Kumar Naresh and Kumar Rajiv (1999)
Radon anomalies and their correlation with microseismicity in N-W Himalaya.
Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12-14, 1998, pp. 21-36.
256. Virk H S (1999)
Radon Monitoring: Opportunities, Challenges and Pitfalls
Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12-14, 1998, pp. 228-232.
257. Sharma Navjeet and Virk H S (1999)
Indoor levels of radon/thoron daughters in some dwellings of Punjab.
Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12- 14, 1998, pp. 259-262.
258. Bajwa B S and Virk H S (1999)
Natural radioactivity measurements in some Siwalik vertebrates using fission tracks technique. Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12-14, 1998, pp. 323-327.
259. Bajwa B S, Sharma Navjeet and Virk H S (1999)
Study of Indoor radon levels using SSNTDs.
Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12- 14, 1998, pp. 252-255.
260. Virk H S, Randhawa G S, Kaul A D and Wadhwa SS (1999)
Atomic force microscopy of heavy ion latent tracks in some track recording materials. Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12-14, 1998, pp. 182-188.
261. Singh R C, Sandhu A S and Virk H S (1999)
Significance of dielectric properties for electrochemical etching response of a nuclear track detector.
Proc. XI National Symposium on SSNTDs, GND University, Amritsar, Oct. 12- 14, 1998, pp. 153-155.
262. Virk H S and Randhawa G S (1999)
Heavy ion radiation effects in insulators and their atomic force microscopy.
Proc. National Conf. on Characterization of Semiconductor Materials (Ed. R.K.Bedi), GND University, Amritsar, pp. 237-248 .
263. Srivastava A K and Virk H S (1999)
Spectral response of some polymers to 14 MeV neutron irradiation
Ind. J. Pure and Appl. Phys., 37, 713-717 .

264. Virk H S, Randhawa G S, Thangraj R, Asokan K and Avasthi D K (1999)
 $^{12}\text{C}^{5+}$ radiation effects in SR-86 track recording polymer.
 Bull. of Material Sci., 22, 791-795.
265. Virk H S, Randhawa G S and Thangraj R (1999)
 $^{12}\text{C}^{5+}$ radiation effects in some polymers.
 Nucl. Instrum. Meth. Phys. Res. B., 152, 500-505.
266. Kaur S Amrita, Randhawa G S, Chakarvarti S K and Virk H S (1999)
 Fabrication of metallic and polymeric microstructures using ion track filters.
 Ind. J. Pure and Appl. Phys., 37, 924-928.
267. Virk H S and Srivastava A K (1999)
 Ion beam modification of polymeric materials using accelerators.
 Proc. Thirteenth National Conf. on Radiation Physics, Mangalore University,
 Mangalagangothri, Dec.21-23, 1999, pp. 423-428.
268. Virk H S and Singh M (1999)
 Uranium and radon anomalies in the river system of N-W Himalayas.
 Ind. J. Environ. Prot., 19(10), 750-752.
269. Virk H S and Sharma Navjeet (2000)
 Indoor radon/thoron survey report from Hamirpur and Una districts, Himachal Pradesh,
 India.
 Appl. Rad. & Isotopes, 52, 137-141.
270. Sharma K Anand, Walia Vivek and Virk H S (2000)
 Effect of meteorological parameters on radon emanation at Palampur (H.P.).
 J. of Geophys., 21(1), 45-48.
271. Virk H S (2000)
 Environmental uranium and radon surveys in Western Himalaya: A case study in
 radioactive pollution.
 Environmental Protection (Eds. A.K. Thukral & G.S.Virk), Scientific Publishers.,
 Jodhpur (India), pp.68-79.
272. Randhawa G S and Virk H S (2000)
 Heavy ion range measurements in some glasses using back track etching technique.
 Rad. Meas., 32, 283-287.
273. Srivastava A K and Virk H S (2000)
 Study of electrical and optical frequency response of neutron irradiated polyvinyl acetate
 thick films.
 Rad. Phys. & Chem., 59, 31-37.

274. Srivastava A K and Virk H S (2000)
Modification of optical response of Polyvinyl Aceate induced by 250 keV D⁺ ion bombardment.
J. of Poly. Materials, 17, 325-328.
275. Virk H S, Walia Vivek, Sharma K Anand, Kumar Naresh and Kumar Rajiv (2000)
Correlation of radon anomalies with microseismic events in Kangra and Chamba valleys of N-W Himalaya.
Geofisica Internacional, 39(3), 221-227.
276. Virk H S and Sharma Navjeet (2000)
Indoor levels of radon/thoron daughters in some dwellings of Punjab and Himachal Pradesh, India.
Proc. IRPA Regional Congress on Radiation Protection in Central Europe held at Budapest, Hungary, Aug.22-27, 1999 (CD ROM).
277. Virk H S and Sharma Navjeet (2000)
Indoor radon levels and inhalation doses to a population in Punjab.
Curr. Sci., 78, 1418-1420 .
278. Virk H S, Srivastava A K, Thangraj R, Asokan K and Avasthi D K (2000)
Swift heavy ion beam induced modifications in polymers.
Annual Report (1999-2000), Nuclear Science Centre, New Delhi, 105-106.
279. Virk H S and Srivastava A K (2000)
Modification of the optical, chemical and structural properties of 50 MeV ⁷Li⁺³ ion bombarded polyimide Kapton – H.
Ind. J. Pure & App. Physics, 38, 570-573.
280. Srivastava A K and Virk H S (2000)
50 MeV Lithium ion beam irradiation effects in Polyvinylidene fluoride(PVDF).
Bull. of Mat. Sci., 23(6), 533-538 .
281. Virk H S (2000)
Ruchi Ram Sahni: A Great Science Populariser of Punjab.
Uncharted Terrains : Essays on Science Popularisation in Pre-Independence India (Eds. N.K. Sehgal, S. Sangwan and S. Mohanti), Vigyan Prasar (DST), N. Delhi, pp.125-131.
282. Virk H S (2001)
Radon/Helium studies for earthquake prediction and fault delineation in NW Himalaya.
Research Highlights in Earth System Sciences: DST's Spl. Vol.2. on Seismicity (ed. O.P.Varma), Published by Ind, Geol. Cong., 277-288.
283. Virk H S Walia Vivek and Kumar Naresh (2001)
Helium/radon precursory anomalies of Chamoli earthquake, Garhwal Himalaya, India.

- Jour. of Geodynamics, 31, 201-210.
284. Virk H S and Sharma Navjeet (2001)
Radon and thoron survey in the dwellings located in radioactive zones of Himachal Pradesh, India.
Rare Gas Geochemistry (Eds. I. Hunyadi, I. Csige and J. Hakl) Proc. 5th ICRGG held at Debrecen, Hungary Aug.29-Sept.3, 1999, pp. 135-138.
 285. Virk H S, Walia Vivek, Sharma Anand K and Kumar R (2001)
Radon anomalies and their correlation with microseismic events in Kangra and Chamba valleys of N-W Himalaya.
Rare Gas Geochemistry (Eds. I. Hunyadi, I. Csige and J. Hakl) Proc. 5th ICRGG held at Debrecen, Hungary, Aug.29-Sept.3, 1999, pp. 37-42.
 286. Virk H S and Srivastava A K (2001)
Modification of optical, chemical and structural reponse of CR-39 polymer by 50 MeV Lithium ion irradiation.
Rad. Meas., 34, 65-67.
 287. Sharma Navjeet and Virk H S (2001)
Exhalation rate study of radon/thoron in some building materials.
Rad. Meas., 34, 467-469.
 288. Virk H S and Walia Vivek (2001)
Helium/Radon precursory signals of Chamoli earthquake, India.
Rad. Meas. 34, 379-384.
 289. Virk H S, Kaur S.A. and Randhawa G.S. (2001)
Role of ion track filters in environmental surveillance.
Environment International, 27, 359-362.
 290. Virk H S, Chandi P S and Srivastava A K (2001)
Optical and chemical response of 50 MeV lithium ion irradiated poly (vinylidene fluoride) polymer.
Jour. Polym. Materials, 18(4), 393-398.
 291. Virk H S, Chandi P S and Srivastava A K (2001)
Electrical and optical response of Lithium ion irradiated Polyimide (Kapton).
Rad. Eff. & Defects Solids, 153, 325-334.
 292. Virk H S (2001)
Radon emanometry data and its correlation with microseismic events in Kangra and Chamba valleys.
Proc. 2nd Dresden Int. Symposium on Radiation Protection, Dresden, Germany, Sept. 10-14 (CD ROM).

293. Virk H S and Walia V (2001)
A critical analysis of radon emanometry data recorded at Palampur and Dalhousie for earthquake prediction studies in N-W Himalaya.
Bull. Ind. Geol. Assoc., 34 (Spl. Vol. 1&2), 243-256 .
294. Virk H S, Chandi, P S and Srivastava A K (2001)
Physical and chemical response of 70 Mev Carbon ion irradiated Kapton-H polymer.
Bull. of Mat. Sci., 24, 529-534.
295. Virk H S, Chandi, P S and Srivastava A K (2001)
Physical and chemical changes induced by 70 MeV Carbon ions in poly vinylidene difluoride (PVDF) polymer.
Nucl. Instrum. Meth. Phys. Res. B., 183, 329-336.
296. Virk H S, Walia V and Bajwa B S (2001)
Radon monitoring in underground water of Gurdaspur and Bathinda districts of Punjab, India.
Ind. J. Pure & Appl. Phys., 39, 746-749.
297. Virk H S, Navjeet Sharma and B S Bajwa (2001)
Enviurmental uranium and radon surveys in some areas of Punjab, Himachal Pradesh and Uttranchal states.
Proc. 14th National Symposium on Radiation Physics, November 1-3, 2001, G.N.D.University Press, Amritsar, pp. 1-6.
298. Virk H S and Vastagh George (2002)
Forecaste of earthquakes and measuring of radon.
Fizikai Szemle (Hungary), 2, 53-55.
299. Virk H S and Walia Vivek (2002)
Radon/Helium precursory signals of Uttarkashi and Chamoli earthquakes.
Himalayan Geology, 23, 147-151.
300. Virk H S and Sharma Navjeet (2002)
Indoor radon/thoron levels and inhalation doses to some populations in Himachal Pradesh, India.
J. Environ. Monitoring, 4(1), 162-165.
301. Virk H S (2002)
Physical and chemical response of 70 MeV carbon ion irradiated Kapton-H polymer.
Proc. 11th Int. Conf. on Radiation Effects in Insulators, Lisbon, Sept.3-7, 2001.
Nucl. Instrum. Meth. Phys. Res. B., 191, 739-743.
302. Virk H S (2002)
Professor Piara Singh Gill: A pioneer cosmic ray physicist of India.
Curr. Sci., 82 (11), 1404-1405.

303. Virk H S, Sharma A.K. and Sharma Navjeet (2002)
Radon/Helium monitoring in some natural/springs of North India and Bhutan.
Curr. Sci., 82(12), 1423-1424.
304. Virk H S and Sharma Navjeet (2002)
Indoor radon/thoron survey in dwellings of Himachal Pradesh, India
Proc. 5th Int. Conf. on High Level of Natural Radiation and Radon Areas : Radiation Dose & Health Effects (Eds. J. Peter, G Schneider and A. Bayer), Technical University, Munich, Germany, Sept. 4 -7, 2000, 193-196.
305. Walia V, Virk H S, and Kumar Puneet (2002)
Empirical Scaling Relationships between Earthquake Magnitudes, Epicentral Distances and Amplitudes of Radon Anomalies in N-W Himalaya.
Ind. J. Pure & Appl. Phys. 40, 743-749.
306. Walia V, Bajwa B.S. and Virk H S (2003)
Radon monitoring in groundwater of some areas of Himachal Pradesh and Punjab states, India.
Journl. of Environ. Monitoring 5, 122-125.
307. Bajwa B S, Virk H S and Singh S (2003)
A comparative study of indoor radon level measurements in the dwellings of Punjab and Himachal Pradesh, India.
Radiat. Meas. 36, 457-460.
308. Walia V, Virk H S, Bajwa B S and Sharma Navjeet (2003)
Relationships between radon anomalies and seismic parameters in N-W Himalaya.
Radiat. Meas. 36, 393-396.
309. Bajwa B S, Sharma Navjeet, Walia V and Virk H S (2003)
Measurements of natural radioactivity in some water and soil samples of Punjab, India.
Indoor & Built Environ. 12, 357-361.
310. Virk H S, Chandi P S and Varada Rajulu A (2004)
Physical and chemical changes induced by 70 MeV Carbon Ions in Polymethyl Methacrylate (PMMA).
Proc. Int. Conference on Computer Simulation and Material Technologies (MMT-2004), College of Judea and Samaria, Ariel, Israel, pp. 89-95.
311. Virk H S (2005)
Correlation of radon anomalies with micro-earthquakes in Kangra and Chamba valleys of N-W Himalaya.
Kangra Earthquake Centenary Seminar (KECS-2005), Special Publ. No. 85, GSI (NR), Lucknow, pp.151-160.

312. Walia V, Virk H S, Yang T F and Bajwa B S (2005)
Earthquake prediction studies using radon as a precursor in N-W Himalayas, India: A Case Study.
TAO (Taiwan) 16(4), 775-804.
313. Walia V, Quattrocchi F, Virk H S, Yang T F, Pizzino, L and Bajwa B S (2005)
Radon, helium and uranium survey in some thermal springs located in N-W Himalayas, India: mobilization by tectonic features or by geochemical barriers?
J. Environ. Monitoring 7, 850-855.
314. Kumar N, Parvez I A and Virk H S (2005)
Estimation of Coda wave attenuation for NW Himalayan region using local earthquakes.
Phys. of Earth & Planet. Interiors 151, 243-258.
315. Bajwa B S, Singh S and Virk H S (2005)
Indoor radon levels and inhalation doses in dwellings near some sites of Himachal Pradesh, India. Journal of Radiation
Protection & Environment, 128(1-4), 218-223.
316. Bajwa B.S., Mahajan S., Singh H, Singh J., Singh S., Walia V. and Virk H.S.(2005).
A study of ground water concentrations in Punjab and Himachal Pradesh States, India.
Indoor Built Environment, 14(6), 481-486
317. Kumar R, Ali S A, Mahur A K, Das D, Naqvi, A H, Virk H S and Prasad R (2006).
Free volume study of 70 MeV carbon induced modification in polymers through positron annihilation.
Nucl. Instrum. Meth. Phys. Res. B, 244, 257-260.
318. Kumar R, Virk H S, Verma K C, De U and Prasad R (2006).
Physico-Chemical Modifications Induced in Makrofol-N Polycarbonate by Swift Heavy Ions. Nucl. Instrum. Meth. Phys. Res. B, 251, 163-166.
319. Walia V, Virk H S and Bajwa B S (2006).
Radon precursory signals for some earthquakes of magnitude $M > 5$ occurred in N-W Himalaya: An overview.
Pure Appl. Geophys. 163(4), 711-721.
320. Virk Hardev Singh (2006)
Environmental Radioactivity Surveys in Western Himalayas.
Abhath-al-Yarmouk, Yarmouk University Publications, Irbid, Jordan 15(1), 33-42.
321. Kumar R, Ali S A, Mahur A K, Virk H S, Singh F, Khan S A, Avasthi D K and Prasad R (2008).

Study of Optical Band Gap and Carbonaceous Clusters in Swift Heavy Ion Irradiated Polymers with UV-Vis Spectroscopy.
Nucl. Instrum. Meth. Phys. Res. B 266, 1788-1792.

322. Kumar R, Ali S, Naqvi A H, Virk H S, De U, Avasthi D K and Prasad R (2009). Study of optical band gap and carbon cluster sizes formed in 100 MeV Si⁸⁺ and 145 MeV Ne⁶⁺ ion irradiated Polypropylene Polymer. Indian Journal of Physics 83(7), 969-976.
323. Ravi Chand Singh, Manwinder Singh and Virk H S (2009) Electrochemical etching technique for neutron dosimetry. Indian Journal of Physics 83(6), 827-832.
324. Virk H S (2009) Heavy Ion Track Route to Nanotechnology. Advanced Materials Research, 67, 115-120.
325. Poonam Sharma and Virk H S (2009) Fabrication of nanoparticles of Barium carbonate/ oxalate using Reverse Micelle technique. The Open Surface Science Journal 1, 23-28.
326. Virk H S, Baloria V and Poonam Sharma (2009) An Overview of Nanotechnology Research at DAV Institute of Engineering & Technology, Jalandhar. Indian Science Cruiser, 23(4), 29-34.
327. Virk H S, Kishore K and Baloria V (2010) Fabrication of Copper Nanowires by Electrodeposition using Anodic Alumina and Polymer Templates. Journal of Nano Research 10, 63-67.
328. Virk H S and Poonam Sharma (2010) Heavy ion irradiation effects on Cadmium oxide (CdO) quantum dots prepared by quenching Method. Journal of Nano Research 10, 69-76.
329. Virk H S and Poonam Sharma (2010) Fabrication of Nanoparticles and Nanowires using Reverse Micelle and Template Synthesis techniques. Tata McGraw Hill Professional Publication, pp. 37-41.
330. Virk H S and Poonam Sharma(2010) 90 MeV carbon Ion Irradiation Effects on Cadmium Oxide Quantum dots. Current Science (Communicated)

331. Singh G, Poonam Sharma and Virk H S (2010)
Fabrication and characterization of quantum dots and nanowires.
Indian J. Pure Appl. Phys. (Communicated)
332. Poonam Sharma and Virk H S (2010)
Effect of co-surfactant and water to surfactant molar ratio on the CdS nanoparticles in
microemulsion.
J. Nanoscience & Nanotechnology (Cummunicated)

Appendix-IIA
Physics Education and other Publications

1. Virk H S (1969)
Sources of Stellar Energy.
Vigyan de Naksh, pp.83-88, Punjabi University, Patiala.
2. Virk H S (1969)
Cosmology : Religious and Scientific aspects.
Khoj Patrika, pp.150-161, Punjabi University, Patiala.
3. Virk H S (1970)
Wonders of Atomic Energy.
Vigyan de Naksh, pp.51-58, Punjabi University, Patiala.
4. Virk H S (1973)
Search for light Elementary Particles.
Vigyan de Naksh, pp.49-53, Punjabi University, Patiala.
5. Virk H S (1974)
Dating of Rocks.
Vigyan de Naksh, pp.93-96, Punjabi University, Patiala.
6. Virk H S (1974)
Concept of Time.
Vigyan Darpan, pp.19-28,Punjab State Univ. Text Book Board, Chandigarh.
7. Virk H S (1974)
Cosmology in Science and Religion.
Proceedings Summer School History of Science, INSA, New Delhi.
8. Virk H S (1976)
Teaching of Science in Punjab Schools: A Survey.
Sikhya Patrika, pp.59-61,Punjabi University, Patiala.
9. Virk H S (March 1976)
Teaching of Science in Punjab Schools-A Critical Survey.
School Science, pp.1-5, NCERT,New Delhi.
10. Virk H S (1979)

Medium for teaching of Science and Technology.
Sikhya Patrika, Punjabi University, Patiala.

11. Virk H S (1980)
Punjabi Poetry : A study in Interactions.
Khoj Darpan (GNDU, Amritsar) , 7, 57-63.
12. Virk H S (1981)
Problems of teaching science in Punjabi medium.
Proc. of Punjabi Development Seminar held at Pbi. Univ., Patiala (Nov. 13-15).
13. Virk H S (1982)
Cosmology in Science and Religion.
Journal of Sikh Studies (GNDU, Amritsar), 9, 19-30.
14. Virk H S (1982)
Role of scientists in the development of Punjab.
Proc. of Ist Punjabi Conference held at Pbi. Univ., Patiala (Nov. 2-4).
15. Virk H S (1983)
Punjabi culture in the scientific age.
Proc. of 2nd Punjabi Conference held at Pbi. Univ., Patiala (Dec.7-9).
16. Virk H S (1984)
M. Phil Programme - An overview.
IAPT Bulletin, 1, 18-19.
17. Virk H S (1985)
Post-graduate teaching of Physics -A model approach.
IAPT Bulletin, 2, 107-108.
18. Virk H S (1985)
Improvement of under-graduate Physics education.
IAPT Bulletin, 2, 177-178.
19. Virk H S (1985)
Gurmat Kav and Modern Science.
Khoj Patrika, Punjabi University, Patiala.
20. Singh A and Virk H S (1986)
Creative teaching of Physics - A survey report.
IAPT Bulletin, 3, 93-95.
21. Virk H S and Singh A (1986)
Teaching of Physics: Students Point of View-A Survey Report.
IAPT Bulletin, 3, 315-317.

22. Virk H S (1987)
Our Experiment with M.Phil Programme.
IAPT Bulletin ,4, 299-300.
23. Virk H S (1987)
Nature of Reality - physical and metaphysical interpretations.
IAPT Bulletin ,4, 326-330.
24. Virk H S (1987)
Progress of SSNTD research in India.
Science and Culture, 53, 12-15.
25. Virk H S (1988)
Current status of Science and Technology.
IAPT Bulletin ,5, 91-92
26. Virk H S (1988)
India marches ahead in SSNTD research.
Science and Culture, 54, 325-326.
27. Virk H S (1989)
Forecasting of Earthquakes.
IAPT Bulletin, 6, 265-270.
28. Virk H S (1989)
Conceptual problems of learning Physics.
IAPT Bulletin, 6, 264.
29. Virk H S (1991)
The Gurus, the Sikhs and the Khalsa.
The Tribune, Feb. 17.
30. Virk H S (1992)
Science and Society: Guest Editorial.
IAPT Bulletin , 9, 68.
31. Virk H S (1993)
The fate of experimental physics in India.
IAPT Bulletin, 10, 275-276.
32. Virk H S (1993)
My rendezvous in China.
IAPT Bulletin, 0, 81.

33. Virk H S (1994)
Research in American University system.
IAPT Bulletin, 11 , 178.
34. Garg A K, S Amrita Kaur and Virk H S (1994)
Applications of conductivity cell in pollution control.
Ind. Sci. Cruiser , 8, 11-13.
35. Virk H S (1994)
My reminiscence as a Physicist.
Indian Physics Society, Diamond Jubilee Souvenir,
IACS, Calcutta, pp. 51-52.
36. S. Amrita Kaur and Virk H S (1995)
Some applications of ion track membranes (filters): An overview.
IAPT Bulletin, 12, 78-79.
37. Virk H S (1995)
Report of Ninth Annual Convention of IAPT, held at G.N.D.University, Amritsar.
IAPT Bulletin, 12, 147-149.
38. Virk H S (1995)
Sikh religion and modern science.
Proc. of World Sikh Conference, SGPC, Amritsar, pp. 88-91.
39. Virk H S (1996)
Forecasting of Earthquakes: Danger signal for Punjab.
Science Tribune, April 25.
40. Virk H S (1996)
Indian Science Congress : An Overview.
IAPT Bulletin, 13(6), 165-166.
41. Virk H S (1996)
World-view in Sikhism , In Current Thoughts on Sikhism (Ed. Kharak Singh),
Institute of Sikh Studies, Chandigarh, pp.251-259.
42. Virk H S (1996)
My encounters with Vice-Chancellors in foreign universities.
University Today, 16(6) , 5.
43. Virk H S (1996)
A quantitative measure of Research in the universities of Punjab.
University Today, 16(8), 8.
44. Virk H S (1996)
Study of Science in Punjab: A Historical Perspective

- Ind. Sci. Cruiser, 10, 14-19.
45. Virk HS (1997)
A Genius Called Abdus Salam.
Bull IAPT, 14, 114-117.
 46. Jain RK, RN Chakravarti and HS Virk (1997)
An-400 keV Van de Graaff accelerator.
IAPT Bulletin, 14, 284-285.
 47. Virk H S (1997)
Professor D.P. Khandelwal: In Memorium
IAPT Bulletin, 14 (no.12) 402.
 48. Virk H S (1998)
What ails Indian Science.
University Today, 18 (2), 8.
 49. Virk H S (1998)
Decline of Science and Technology in India.
University Today, 18 (4), 7-8.
 50. Virk H S (1998)
Social and Cultural interactions of Science and Technology.
University Today, 18 (6), 5-6.
 51. Virk H S (1998)
Decline in research in Indian Universities.
Curr. Sci. 74 (no.5) 397.
 52. Virk H S (1998)
Cost-effective databases for research.
Curr. Sci., 75 (1), 5.
 53. Virk H S (1998)
Indian Science in Doldrums : Some suggested remedies.
University Today,18(8), 5-7.
 54. Virk H S (1998)
Who is the first Indian to work with Rutherford?
Indian Sci. Cruiser, 12(1), 11.
 55. Virk H S (1998)
Nuclear Explosions: Their detection and radioactive fallout.
The Science Tribune, June 4.

56. Virk H S (1998)
Indian Science: Ailments and remedies.
Science Tribune, April 23.
57. Virk H S (1998)
Appointment of Vice-Chancellors.
University Today, 18(12),7-8.
58. Virk H S (1998)
What ails Indian Science?
IAPT Bulletin, 15(no.4),100.
59. Virk H S (1998)
Physics research in Indian and International context.
IAPT Bulletin, 15(no.5),132.
60. Virk H S (1998)
Social and cultural interactions of science and technology.
Ind. Sci. Cruiser, 12(3), 13-16.
61. Virk H S (1998)
What ails Indian science? Some suggested remedies.
Curr. Sci., 74, 817-818.
62. Virk H S (1998)
Comments on paper of R.C. Ramola, "Assessment of health risk".
Curr. Sci., 74, 650-651.
63. Virk H S (1999)
Bureaucratisation of science in India.
University Today, 19 (spl.) , 16.
IAPT Bulletin, Guest Editorial , 16(2), 36.
64. Virk H S (1999)
Ruchi Ram Sahni : who introduced scientific temper in Punjab.
The Tribune, March 6,1999.
65. Virk H S (1999)
Sikhism: The Scientific Religion for the Mankind.
Understanding Sikhism-The Research Journal, 1(1), 21-23.
66. Virk H S (1999)
Discovering the roots of Punjabi culture in Uzbekistan.
The Sikh Review.

67. Virk H S (2000)
Frustrations of doing science in India.
Curr.Sci., 78(5), 101.
68. Virk H S (2000)
Role of Indian science managers.
Curr.Sci., 78(6), 659.
69. Virk H S (2000)
A peep into the History of Science and its development in India.
IAPT Bulletin, 17(3), 72-73.
70. Virk H S (2000)
Role of Indian science managers .
IAPT Bulletin, Guest Editorial , 17(5), 132.
71. Virk H S (2000)
Excitement in Physics through Internet.
IAPT Bulletin,17(7), 211.
72. Virk H S (2000)
Excitement in Physics: Myth & Reality.
IAPT Bulletin, 17(8), 232-233.
73. Virk H S (2000)
Highlights of 87th Indian Science Congress held at Pune.
University Today,20(7), 8.
74. Virk H S (2000)
The fun of holding Indian Science Congress *melas* .
Curr. Sci., 78(9), 1052
75. Virk H S (2000)
Cocept of Sunya in Guru Granth Sahib (GGS).
The Sikh Review, 48(6), 11-12.
76. Virk H S (2000)
A bibliometric analysis of scientific research in India .
Curr. Sci., 78(11), 1280-1281.
77. Virk H S (2000)
Some random thoughts on NET.
University Today,20 (13),7.

78. Virk H S (2000)
Decline in scientific research in Punjab.
University Today,20(14),8.
79. Virk H S (2000)
Wastage of resources & scientific manpower in India.
Curr. Sci., 79(7), 929.
80. Virk H S (2000)
Sir Asutosh Mookerjee : A role model for Vice-Chancellors in India.
University Today, 20(17), 5.
81. Virk H S (2000)
How to improve credibility of Indian Journals.
Curr. Sci. 79(10), 1413.
82. Virk H S (2000)
A case for History and Philosophy of Science in Indian universities.
Curr Sci., 79(11), 1514.
83. Virk H S and Kaur S. Amrita(2000)
Ion Track Filters: An Overview of Production and Application.
Ind. Sci. Cruiser, 14(2), 22-24.
84. Virk H S (2000)
Concept of Reality in Aad Guru Granth Sahib and its Physical, Metaphysical and
Mystical aspect.
Understanding Sikhism-The Research Journal, 2(1), 24-28.
85. Virk H S (2001)
Siddha-Goshti: A projection of Sahaj-Yoga philosophy of Sikhism.
The Sikh Review, 49 (8), 13-16.
86. Virk H S (2001)
Beauty of Mathematical Equations in Physics .
Ind. Sci. Cruiser, 15(1), 7-8.
87. Virk H S (2001)
Vedic Astrology.
Curr. Sci. 80(10), 1250-1251.
88. Virk H S (2001)
Need for reforms in Indian National Science Academy.
Curr. Sci. 80(11), 1364-1365.

89. Virk H S (2001)
Report on International Conference on Natural Hazards : Mitigation & Management (ICNHMM)
Curr Sci., 80(10), 1357-1358.
90. Virk H S (2001)
Importance of good teachers and leaders of research.
Curr. Sci. 80 (12), 1477.
91. Virk H S (2001)
Improving research in India.
Curr. Sci. 81(1), 10.
92. Virk H S (2001)
The emergence of third culture.
Curr. Sci. 81(3), 232.
93. Virk H S (2001)
Appointment of Vice Chancellors in Universities.
Curr. Sci. , 81(6), 628-629..
94. Virk H S (2001)
Role of higher education in the Third World.
Curr. Sci. 81(8), 868.
95. Virk H S (2001)
Importance of science policy and planning in India.
Curr. Sci. 81(10), 1277.
96. Virk H S (2001)
The need for a National Institute of Seismology.
Curr. Sci., 81 (12), 1516.
97. Virk H S (2001)
Probable health hazards from nuclear weapon accidents in India and Pakistan.
Ind. Sci. Cruiser, 15(4), 15-16.
98. Virk H S, Kaur S.A. and Randhawa G.S. (2001)
Role of ion track filters in environmental surveillance
Ind. Jour. Environ. Protection, 21(6), 529-533.
99. Virk H S (2002)
Physics research as a hobby.
Curr. Sci., 82 (1), 8.

100. Virk H S (2002)
The myth of Saraswati river.
Curr. Sci., 82(2), 117.
101. Virk H S (2002)
12th National Solid State Nuclear Track Detectors: Conference Report.
Curr. Sci., 82(3), 254.
102. Virk H S (2002)
History of Science in Educational Institutions.
IAPT Bull., 19(2), 40-41.
103. Virk H S (2002)
The integrity of structures, individuals and institutions: The Sunder-Parida episode.
Curr. Sci., 82(5), 101.
104. Marx G and Virk H S (2002)
Life through the Nuclear Valley.
Ind. Sci. Cruiser 16(1), 22-37.
105. Virk H S (2002)
Impact of impact factors and citation index analysis in research.
Ind. Sci. Cruiser, 16(1), 13-14.
106. Virk H S (2002)
Sir Asutosh Mookerjee : A role model for Vice-Chancellors in India.
The Sunday Tribune, 21 April, 2002.& Ind. Sci. Cruiser 16(3),11-13.
107. Virk H S and Walia Vivek (2002)
Earthquakes: Causes, Precursors and Prediction
Science India, 5(6), 23-28.
108. Virk H S (2002)
How to promote scientific research as a career in India.
Curr. Sci., 82 (11), 1308.
109. Virk H S (2002)
Ph D theses: A reflection on science education in India.
University Today, 22(3), 7.
110. Virk H S (2002)
Glaring disparities and digital divide in the Third World countries.
Ind. Sci. Cruiser 16(2), 23-24.

111. Virk H S (2002)
Teaching of M.Sc. Physics courses: A survey report.
IAPT Bull., 19(10), 335-336.
112. Virk H S (2002)
Priorities in science and technology.
Curr. Sci., 83 (7), 101.
113. Virk H S (2003)
Improving the quality of Ph.D. students in Indian Universities.
Curr. Sci. 84(4), 485.
114. Virk H S (2003)
Competency-based training for informal sector as a National Policy.
Ind. Sci. Cruiser 17(2), 50-51.
115. Virk H S (2003)
Need for Value Education in present Global context.
Ind. Sci. Cruiser 17(3), 55-56.
116. Virk H S (2003)
Some suggestions to improve Indian Science Congress melas.
Curr. Sci. 85(3), 240.
117. Virk H S (2004)
Health of Indian Science.
Curr. Sci. 86(10), 1349.
118. Virk H. S (2004)
Fate of higher education in India.
Curr. Sci. 86(12), 1585.
119. Virk H.S. (2004)
Does India shine in scientific research ?
Curr. Sci. 87(1), 7.
120. Virk H.S. (2004)
Shanghai rankings and Indian Universities.
Curr. Sci. 87(4), 416.
121. Virk H.S. (2004)
Reminiscences of G.N. Ramachandran.
Curr. Sci. 87(11), 1496.
122. Virk H.S. (2004)

Indian Science: Diagnosing malady and suggesting remedy.
Curr. Sci. 87(12), 1642.

123. Virk H.S. (2004)
Extra – terrestrial materials.
Ind. Sci. Cruiser 18(4), 26-31.
124. Virk H.S. (2004)
Cosmological Ideas in Science and Aad Guru Granth Sahib.
Omega Ind. J. Sci. & Religion, 3(1) 72-75.
125. Virk H.S. (2005)
Global perspectives in Science & Sikh religion.
Abstracts of Sikh Studies 7(2) 15-20.

Appendix-III

Ph. D. Theses Supervised by Professor H.S. Virk

Name of Candidate	Topic of Ph.D. Thesis	Year of Award
1. S.L. Kaul	Fission track dating and uranium estimation in some pegmatites of India.	1978
2. Surinder Singh	Fission track dating and uranium distribution in Pegmatites of Rajasthan state, India.	1979
3. S.K. Modgil	Track recording characteristics of glasses and their application to neutron dosimetry.	1984
4. Narinder Pal Singh	Geochemical exploration of uranium using solid state track detectors.	1986
5. Manwinder Singh	Radon studies for uranium prospect ion using solid state track detectors.	1986
6. R. C. Ramola	Radon studies for earthquake prediction, uranium exploration and environmental pollution using nuclear techniques.	1989
7. Ravi Chand Singh	Investigations into electrochemical etching behaviour and track revelation in dielectrics.	1989
8. R. K. Bhatia	Annealing studies of heavy ion radiation damage in plastic track detectors.	1989
9. Gurdeep Singh	Inelastic scattering of gamma rays from K-shell electrons.	1989
10. Gurinder Singh	Annealing characteristics of heavy ion radiation damage in glass track detectors.	1990
11. Baljinder Singh	Earthquake prediction studies in Kangra valley of Himachal Pradesh and Punjab using radon measurement techniques	1993
12. B.S. Bajwa	Elemental analysis of fossil bones and its application for uranium exploration.	1995
13. Narinder Pal Singh	Plasma irradiation effects in metals.	1997

14. Gurpartap Singh	Heavy ion range-energy relations and annealing characteristics of track recording dielectrics.	1997
15. Sanjeet Amrita Kaur	Preparation and applications of ion track filters.	1999
16. Anand K. Sharma	Correlation of radon anomalies with microseismicity in the Kangra valley of Himachal Pradesh , India.	2000
17. Navjeet Sharma	A comparative study of radon/thoron levels in the dwellings of Punjab and Himachal Pradesh.	2001
18. Vivek Walia	Critical evaluation of radon data as a predictive tool of earthquakes in Kangra and Chamba valleys of Himachal Pradesh, India.	2002

Appendix-IV

M.Phil. Theses Supervised by Professor H.S. Virk

Name of Candidate	Topic of M. Phil. Thesis	Year of Award
1. Harinder Kaur	Uranium estimation in plants and water using fission track method.	1978
2. Veena Kumari	Identification of relativistic charged particles produced in 9.4 GeV/c deuteron-nucleus interactions in nuclear emulsions.	1979
3. T.R. Sharma	To set up Spark/Discharge Counter.	1979
4. S.K. Modgil	Intercalibration of glass dosimeters.	1981
5. D.S. Malhi	A study of efficiency of electrochemical etching as a function of various parameters in lexan polycarbonate.	1985
6. Ravindra Mehta	Preparation and applications of microfilters.	1985
7. Amrik Singh	Creative teaching of Physics and evaluation of COSIP courses.	1986
8. Gurinder Singh	Annealing of heavy ion tracks in soda-glass detectors.	1987
9. Sukhwinder Kaur	Fission track dating of tektites.	1987
10. Gurpreet Sadana	Unification of fundamental forces.	1988
11. Gurmeet Singh	Determination of exposure rate and water-air ratios of Brachytherapy radionuclides.	1989
12. Rama Kumari	Etching characteristics of SR-86 plastic track detectors.	1990
13. Tejinder Pal Singh	Range measurements of heavy ions in plastic track detectors.	1990
14. Mona Bedi	Aspect ratio and track etch characteristics of muscovite mica and CR-39 plastic.	1992
15. Rajbir Kaur	Etching characteristics of heavy ion tracks in glass detectors.	1992
16. Gurpartap Singh	Range study of heavy ions in soda-glass detector.	1993

Appendix-V

Participation in International Conferences/Workshops/Schools

1. Participated in first European Conference on Intermediate Energy Nuclear Physics held at Aix-en-Provence, France (Sept. 1972).
2. Participated in Autumn Workshop on Physics of Earth at ICTP, Trieste, Italy (Oct. - Dec. 1977).
3. Participated in International Summer College on Physics held at Nathiagali, Pakistan (June, 1980)
4. Participated in International Symposium on Renewable Energy Sources held at Lahore, Pakistan (April, 1983).
5. Participated in 12th International Conference on SSNTD held at Acapulco, Mexico (Sept, 1983).
6. Participated in Solar Energy Workshop at ICTP, Trieste, Italy (1985).
7. Chaired a session at 13th International Conference on SSNTD held at Rome, Italy (1985).
8. Participated in "College on Neurophysics" at ICTP, Trieste, Italy (1986).
9. Participated in High Energy Physics Conference at ICTP, Trieste, Italy (1987).
10. Participated in International Workshop on Superconductors at ICTP, Trieste, Italy (1987).
11. Participated in 4th International Conference on Radiation Effects in Insulators at Lyon, France (1987).
12. Participated in College on Medical Physics at ICTP, Trieste, Italy (1988).
13. Chaired a session at 14th International Conference on SSNTD held at Lahore, Pakistan, (1988).
14. Invited paper at 5th International Conference on Radiation Effects in Insulators at McMaster University, Hamilton, Canada (1989).
15. Attended 9th International Conference on Ion Beam Analysis at Queen's University, Kingston, Canada (1989).
16. Chaired a session at 15th International Conference on Particle Tracks in Solids at Marburg, Germany (1990).
17. Participated in 6th International Conference on Radiation Effects in Insulators at Weimer, Germany (1991).

18. Participated in 5th International Conference on Radiation Physics held at Dubrovnik, Yugoslavia (1991) .
19. Chaired a session at 16th International Conference on SSNTD held at Beijing in China (Sept., 1992).
20. Participated in 7th International Seminar on Earthquake Prognostics held at Asian Institute of Technology, Bangkok, Thailand (Sept.,1992).
21. Participated in 15th International Conference on Atomic Collisions in Solids at University of Western Ontario, London, Canada (July, 1993).
22. Participated in 7th International Conference on Radiation Effects in Insulators at Nagoya University, Nagoya, Japan (Sept., 1993).
23. Participated in 9th International Conference on Ion Beam Modification of Materials (IBMM) held at Australian National University, Canberra, Australia (Feb. 1995).
24. Delivered a plenary talk at 3rd International Conference on Rare Gas Geochemistry held at Guru Nanak Dev University, Amritsar, India (Dec., 1995).
25. Delivered an invited talk at International Symposium "Prediction studies on Earthquakes and Volcanic Eruption" held at University of Tokyo, Japan (March 1996) .
26. Participated in 10th International Conference on Ion Beam Modification of Materials (IBMM-96) at Albuquerque, USA (Sept. 1-6, 1996).
27. Delivered an invited talk at International Symposium on Materials Science Applications of Ion Beam Techniques (IBT-96) held at Seeheim, Germany (Sept. 9-12, 1996).
28. Attended International Conf. on Paleoseismology held at Wadia Institute of Himalayan Geology, Dehradun (March, 1997).
29. Invited talk at 4th International Conference on Rare Gas Geochemistry held at Rome, Italy (Oct. 8-10, 1997).
30. Invited talk at 33rd International Conference of International Society Hydrothermal Technology (SITH) held at Kanagawa, Japan (Dec. 1-4, 1997).
31. Attended Int. Conf. on Swift Heavy Ions in Materials Engg. and Characterization held at NSC, New Delhi (Oct. 19-21, 1998).
32. Invited talk at International Symposium on Earthquake Hazard Assessment and Earth's Interior, NGRI, Hyderabad (Dec. 1-3, 1998).

33. Invited talk on Radon/Helium Monitoring for Earthquake Prediction Studies in N-W Himalaya at Jubilee Scientific Conference held at Institute of Seismology, Tashkent, Uzbekistan, April 24-25, 1999.
34. Participated in IRPA Regional Congress on Radiation Protection held in Budapest, Hungary, Aug.22-27, 1999
35. Participated & Chaired a session at the 5th International Conference on Rare Gas Geochemistry (ICRGG) held at Debrecen, Hungary, Aug.30-Sept.3, 1999.
36. Participated & Chaired a session at the 20th International Conference on Nuclear Tracks in Solids, held at Portoroz, Slovenia, Aug.28-Sept1,2000.
37. Participated in 5th International Conference on High Levels of Natural Radiation & Radon Areas held at Munich, Germany, Sept. 4-7, 2000.
38. Participated & Chaired a session at the 2nd International Symposium on Radiation Protection held at Dresden, Germany, Sept.10-14, 2000.
39. Participated in International Workshop on Seismo-Electromagnetics and Space Science held at Agra, India, Dec.19-21, 2000.
40. Participated in International Conference on Natural Hazards: Mitigation & Management held at Amritsar, India, March 12-15, 2001.
41. Participated in 11th International Conference on Radiation Effects in Insulators,Lisbon,Portugal, Sept.3-7, 2001.
42. Participated in 21st International Conference on Nuclear Tracks in Solids (ICNTS-21) held at New Dehli, Oct. 21-25, 2002.
43. Participated in International Conference on Nanotechnology (ICON-2003) held at CSIO, Chandigarh, Dec. 22-23, 2003.
44. Participated in 3rd Int. Conference MMT-2004 held at College of Judia and Samaria, Ariel, Israel, Sept. 6-10, 2004.
45. Participated in 4th Int. Symposium on Use of Nuclear Techniques in Environmental Studies, Irbid, Jordan, Sept. 13-15, 2004.
46. Invited Lecture at International Symposium on Modern Science, Mysticism and East-West Dialogue, held at Lonavla, Maharashtra, India, Jan. 2-6, 2005.
47. Invited Lecture at Kangra Earthquake Centenary Seminar (KECS-2005), organised by GSI, North Circle, Lucknow at Palampur, HP, 4-5 April, 2005.

48. Participated in International Conference on SCIENCE & SPIRITUALITY in Modern India, held at JNU, New Delhi, Feb. 5-7, 2006.
49. Invited Lecture at International Conference on Concept of Time in Scientific and Sikh Traditions held at Jawaddi Kalan, Ludhiana, India, March 22 – 24, 2006.
50. Invited Lecture at German Physical Society Meeting held at Technical University, Dresden (Section Metals & Materials), March 27-31, 2006.
51. Delivered a Talk “ Heavy Ion Tracks Route to Nanotechnology” and Chaired a session in International Conference, NADPA-2008, held at IIT, Roorkee during 11-13 December, 2008.
52. Participated at International Conference on Radiation Effects in Insulators (REI-15) held at Padua, Italy during 30 Aug.-04 Sept. 2009.
53. Invited Talk at International Workshop on Nanotechnology and Advanced Functional Materials held at NCL, Pune during 9-11 July, 2009.
54. Presented a Paper “Fabrication of nanoparticles and nanowires using reverse micelles and template synthesis techniques” at International Conference NATCHEE-2010 held at Dyalbagh, Agra during 7-9 Jan. 2010.

Appendix VI

Participation in National Conferences/Seminars/Workshops etc.

1. Attended UGC Summer School on Theory of Relativity held at University of Allahabad (April, 1968).
2. Attended Training School in Molecular Biophysics held at Indian Institute of Science, Bangalore (April, 1974)
3. Attended INSA Workshop on History of Science organised by National Commission on History of Science, New Delhi (Sept. 1975).
4. Invited Talk at Indian Science Congress (History of Science Section) held at Utkal University, Bhubaneswar (Jan. 1976).
5. Participated in First Indian Geological Congress held at Delhi University, Delhi (Sept. 1976).
6. Participated in Exploration/Nuclear Geophysics Symposium held at University of Roorkee (Feb. 1979).
7. Invited Talk at First SSNTD Seminar cum Workshop held at BARC, Trombay (March, 1979).
8. Participated in Second SSNTD Seminar held at PRL Ahmedabad (March, 1981).
9. Convened UNESCO Regional Seminar on Ibn-Sina, G.N.D. University, Amritsar. (March, 1981).
10. Participated in UNESCO Regional Seminar on Ibn-Sina held at Kashmir University, Srinagar (July, 1982).
11. Participated in Eighth Exploration Geophysics Seminar held at B.H.U. Varanasi (Nov. 1982).
12. Convened Third SSNTD Seminar held at G.N.D. University, Amritsar (March, 1983).
13. Invited Talk at Indian Science Congress (History of Science) held at S.V. University, Tripuri (Jan. 1984).
14. Participated in National Symposium of Instrument Society of India held at Kashmir University, Srinagar (April, 1984).
15. Attended First National Convention of IAPT held at HBTI, Kanpur (Oct. 1984).

16. Participated in National Symposium on University-Industry Interaction held at Vigyan Bhawan, New Delhi (Oct. 1985).
17. Invited Talk at Fourth National SSNTD Seminar held at WIHG, Dehradun Nov. 1985).
18. Participated in IARP National Symposium held at BARC, Trombay (Feb.1986).
19. Participated in Fifth National SSNTD Seminar held at SINP, Calcutta (March, 1987).
20. Invited Talk at National Seminar on Atomic Physics held at Punjabi University, Patiala (Feb. 1988).
21. Workshop on Science and Technology held at Punjabi University, Patiala (Feb. 1988).
22. Attended National Conference of State Councils for Science & Technology held at Chandigarh (March, 1988).
23. DST Workshop on Bihar - Nepal Earthquake held at I.I.T. Kanpur (Dec. 1988).
24. Participated in National Symposium on Recent Advances in Seismology held at Bangalore (July, 1990).
25. Chaired a session at 5th IAPT Convention held at G.M.N. College, Ambala Cantt. (Oct. 1990).
26. Participated in 78th Indian Science Congress held at Devi Ahilya Vishwavidalaya, Indore (Jan. 1991).
27. Invited Talk at Seventh National Seminar on Particle Tracks in Solids held at DRL, Jodhpur (Oct. 1991).
28. Invited Talk at DST sponsored Seminar on Uttarkashi Earthquake held at University of Delhi (Nov. 1992).
29. Invited Talk at 18th Seminar on Exploration Geophysics held at University of Rajasthan, Jaipur (Dec. 1992).
30. Participated in 8th National Seminar on SSNTDs held at AMU, Aligarh (Oct. 1993).
31. Invited lecture at International Natural Disaster Reduction Decade (INDRD) Seminar held at Chandigarh (Oct. 1993).
32. Chaired a session at 8th IAPT Convention held at Vijaywade (Dec. 1993).
33. Invited Lecture 'Earthquake Prediction using Radon Monitoring' at Int. Training Course on Seismology held at University of Roorkee (Dec. 1993).

34. Participated in 21st IARP Conference held at BARC, Trombay (Feb. 1994).
35. INSA Diamond Jubilee Seminar on Geological Hazards in Himalayan Region held at WIHG, Dehradun (March, 1994).
36. National Seminar on Environmental Pollution held at Jamia Hamdrad University, New Delhi (March,1994).
37. Invited lecture at National Conference on Ubiquitous Radon held at BARC, Trombay (Nov. 1994).
38. Convened 9th IAPT convention held at G.N.D. University, Amritsar (Dec. 1994).
39. UNESCO Regional Workshop on Renewable Energy Engg. Education held at I.I.T. Delhi (Jan. 1995).
40. Participated in 82nd Indian Science Congress held at Jadavpur University, Calcutta (Jan. 1995).
41. Key-note Address at State Seminar on Science Writing held at Sivalik College, Nagnal (Jan. 1995)
42. Participated in DST National Workshop on Latur Earthquake held at WIHG, Dehradun (March, 1995).
43. National Seminar on Environment and Development held at G.N.D. University, Amritsar (March, 1995).
44. Participated in Workshop on “ Curriculum for Renewable Energy” organised by Waterfall Institute of Technology Transfer, held at New Delhi (April, 1995).
45. Invited lecture at DST sponsored Seminar on “Ruchi Ram Sahni : A Science Polulariser of Punjab” held at Punjab University, Chandigarh (May, 1995).
46. Participated in National Seminar on Science Writing in Indian Languages held at Central Institute of Indian Languages (C.I.L) , Mysore (July, 1995).
47. Participated in Indian Association of Physics Teachers (IAPT) Annual meeting held at NCERT, New Delhi (July, 1995).
48. Participated in 83rd Indian Science Congress held at Punjabi University, Patiala (Jan. 1996).
49. Invited lecture at X National Seminar on SSNTDs held at Kurukshetra University, Kurukshetra (Oct. 1996).
50. Participated in XI IAPT Convention held at Marthwada University, Aurangabad (Dec. 1996).

51. Participated in DST sponsored Seminar on Geodynamics of North-East India held at Manipur University, Imphal (Nov. 1997)
52. National Seminar on Recent Advances in Environmental Sciences held at G.N.D. University, Amritsar (March, 1998).
53. Invited lecture at XI National SSNTD Seminar held at G.N.D. University, Amritsar (Oct. 1998).
54. Participated in Science Communicators Workshop(sponsored by PSCST Chandigarh) held at G.N.D. University, Amritsar (Feb. 1999).
55. Participated in Fourth Training Workshop on Earthquake Disaster Mitigation held at IIPA, New Delhi (Aug. 1999).
56. Participated in Workshop on Chamoli Earthquake held at WIHG, Dehradun (Oct. 1999).
57. Participated in XIV IAPT Convention held at Lucknow (Oct. 1999).
58. Participated in Indo-Italian Workshop on recent Advances in Material Science held at I.I.T. Delhi (Nov. 1999).
59. Participated in 23th National Symposium on Radiation Physics (NSRP-13) held at Mangalore University, Mangalore (Dec. 1999).
60. Participated in 87th Indian Science Congress held at Pune University, Pune (Jan. 2000).
61. Participated in National Seminar on Structure and Tectonics of Indian Plate held at Punjab University, Chandigarh, July 31-Aug.2, 2000.
62. Participated in Regional Symposium on Radiation Physics held at Punjabi University, Patiala, March 26-27, 2001.
63. Delivered Key-note Address and Chaired a Session at XII National Symposium on Solid State Nuclear Track Detectors (SSNTDs) held at D. A. V. College, Jallandhar, from 29-31 Oct., 2001.
64. Delivered Invited Talk and Chaired a Session at 14th National Symposium on Radiation Physics (NSRP-14) held at G.N.D. University, Amritsar, from Nov.1-3, 2001.
65. Delivered Invited Talk and Chaired a Session at 14th National Symposium on Role of Science Practicals in improvement of Scientific Manpower in India held at INSA, New Delhi on 26 Dec., 2001.
66. Participated in Annual IAPT Convention held at Gulbarga, Karnatka on 15-17 Jan. 2003.

67. Delivered Invited Talk and Chaired a Session at 12th National Symposium on Environment held at Garhwal University, Tehri Garhwal, from June 5-7, 2003.
68. Delivered Invited Talk and Chaired a Session at annual IAPT Convention held at HMV, Jalandhar from Dec. 18-20, 2003.
69. Delivered Invited Talk in National Conference on Natural Disasters organised by MGSIPA, Chandigarh on March 25-26, 2004.
70. Delivered Invited Talk at Regional Workshop on Nanomaterials held at Jamia Milia Islamia, New Delhi on March 11, 2004.
71. Delivered Invited Talk in National Workshop on Accelerator and Environmental Radiation held at Nuclear Science Centre, New Delhi on April 22-23, 2004.
72. Chaired Plenary session at XIX National Convention of IAPT at Jiwaji University, Gwalior, Oct. 28-31, 2004.
73. Delivered Invited Talk at Kangra Earthquake Centenary Seminar (KECS) held at Palampur, HP, April 4-6, 2005.
74. Participated as Advisor in National Seminar on Attracting Young People to Careers in Science, IIT, New Delhi, March 31, 2005.
75. Delivered Invited Talk at National Seminar cum XXI IAPT Annual Convention held at SGTB Khalsa College, Jabalpur during Oct. 2006.
76. Participated in Colloquium on Earthquake Studies and Neotectonics in N-W Himalaya held at Geology Department, PU Chandigarh on 7 June, 2007.
77. Invited Talk at XV SSNTD National Conference held at Tehri Campus, Garhwal University, Uttaranchal during June 21-23, 2007.
78. Invited Talk at Workshop on National Program on Earthquake Precursors organised by IMD, MoES, New Delhi on 28-29 June, 2007.
79. Invited Popular Talk on Prediction of Earthquakes delivered at NCSM, Pargati Maidan, New Delhi on 12 Oct. 2007.
80. Participated in Panel Discussion on Role of IISER during XII IAPT Annual Convention held at HP University, Shimla on 27 Oct. 2007.
81. Participated in the Workshop for the launch of National Alliance for Disaster Risk Reduction (NADRR) held at Habitat Centre, New Delhi during 3-4 Nov. 2007.

82. Invited Talk at National Seminar, "Guru Nanak and his Religious Contemporaries" held at GND University, Amritsar on 22-23 Nov. 2007.
83. Chaired a session at National Workshop organised by Inter-University Accelerator Centre (IUAC), New Delhi on 25th August, 2008.
84. Invited Talk "Scientific Vision in Sri Guru Granth Sahib" delivered at Institute of Sikh Studies (IOSS), Chandigarh on 8th November, 2008.
85. Invited Talk "Scientific Vision of Guru Nanak in Sri Guru Granth Sahib" at Regional Seminar held at GND University, Amritsar during 22-23 November, 2008.
86. Invited Talk delivered at UGC National Seminar "Nanotechnology: The Next Revolution" held at DAV College, Dasuya on 4th December, 2008.
87. Invited Talk delivered at UGC National Seminar "Recent Trends in Material Sciences" held at DAV College, Amritsar on 10-11 February, 2009.
88. Invited Talk delivered at National Conference "Advanced Materials and Radiation Physics" held at SLIET, Longowal on March 9-10, 2009.
89. Invited Talk at National SSNTD Conference held at GND University, Amritsar during 9-11 Nov. 2009.
90. Invited Talk at XXIV Gujarat Science Congress held at GU Ahmedabad on 21st March, 2010.
91. Participated and Chaired a Session in National Workshop on XRD Techniques & Applications held at Saurashtra University, Rajkot during March 17-19, 2010.
92. Delivered an Invited Lecture on Disaster Mitigation & Management at Institute of Seismological Research (ISR) at Gandhinagar (Gujarat) on March 16, 2010.
93. Delivered Dr MR Sahni Memorial Lecture "Natural Hazards & Disaster Management" in Geology Department, PU Chandigarh on 25th March, 2010.