

CURRICULUM VITAE

**Institute of Soil, Water and Environmental Sciences
Volcani Center, ARO
P.O. Box 6, Bet Dagan 50250, Israel**

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Home address: 3 Golomb St., Ness Ziona 74013, Israel.

Personal:

Date of Birth: May 14, 1942
Place of Birth: Petach Tikva, Israel.
Military Service: 1960-1963.
Marital Status: Married + three children.

April 1989 Received the scientific rank of **A⁺** (**Equivalent to Full Professor**).

April 2000 **Received the title Full Professor by the Hebrew University of Jerusalem.**

University Education and Additional Training:

1963-1966 B.Sc. in Agronomy, The Hebrew University, Faculty of Agriculture. Graduated Jan. 26, 1967.

1967-1969 M.Sc. in Soil Science, The Hebrew University, Faculty of Agriculture. Graduated June 22, 1969. Thesis title "The Distribution of Iron Oxides in red Sandy Soils of Israel".

1970-1973 Ph.D. in Soil Science at the Hebrew University, Faculty of Agriculture. Israel. Graduated July 11, 1974. Thesis title: "Thermodynamic of Water Adsorption on Sodium and Calcium Montmorillonite".

1974-1975 Post-doctoral fellow with Prof. R. Gast at the Department of Soil Science at University of Minnesota, Saint-Paul, Minnesota. USA.

Research Interests:

Research interests range from fundamental studies on thermodynamics of water and solutions, ion exchange phenomena in soils to kinetic processes.

Current emphasis is on increasing water use efficiency, Sodic and alkaline soil reclamation, municipal sewage recycled water for irrigation, boron-soil-plant relations and transport in soils irrigated with recycled water and fly ash – water - soil interactions.

Positions Held and Academic Status:

1963-1968 Research assistant in the Department of Soil Science, The Hebrew University of Jerusalem, Israel.

1968-1974 Research assistant and teaching physical chemistry, Dept. of Chemical Engineering, University of Ben Gurion, Beer Sheba, Israel.

1974- 1975 Post-doctoral fellowship - Dept. of Soil Science, University of Minnesota, Minnesota, USA.

Sep. 1975-present Institute of Soils and Water, The Agricultural Research Organization, The Volcani Center, Bet Dagan, Israel.

1977 Acting Head, Division of Soil Physical Chemistry, Institute of Soil and Water, ARO, The Volcani Center, Bet Dagan (July-September).

1978-1979 Acting Head, Division of Soil Physical Chemistry, Institute of Soils and Water, ARO, The Volcani Center, Bet Dagan.

1980-1981 Visiting Professor, Dept. of Agronomy, New Mexico State Univ., New Mexico, USA.

1982 Acting Head, Division of Soil Physical Chemistry, Inst. of Soils and Water, ARO, The Volcani Center, Bet Dagan (June-September).

1983 Visiting Professor, Dept. of Soils and Environmental Sciences, Univ. of California, Riverside, California, USA.

1984-1985 Acting Head, Div. of Soil Physical Chemistry, Inst. of Soils and Water, ARO, The Volcani Center, Bet Dagan.

1986-1987 Visiting Professor, Dept. of Land, Air and Water Resources, Univ. of California, Davis, California, USA.

1988 Visiting professor, Soil and Crop Sciences Department, Texas A&M University, College Station, Texas, USA. (Two months).

April 1989 Received the scientific rank of **A⁺** (**equivalent to Full Professor**)

1989 Visiting professor, Department of Land, Air and Water Resources. University of California, Davis, California, USA (Two months).

1990 Visiting professor, Soil and Irrigation Research Institute, Pretoria, South Africa.

- 1991 Acting Head, Div. of Soil Physical Chemistry, Inst. of Soils and Water, ARO, The Volcani Center, Bet Dagan.
- 1992-1993 Visiting Professor, Dept. of Plant and Soil Sciences, University of Delaware, Newark, Delaware, USA.
- 1992-1994 Head, Department of Soil and environmental Chemistry, Inst. of Soils and Water, ARO, The Volcani Center, Bet Dagan.**
- 1995-1998 Director, Institute of Soils and Water, Agricultural Research Organization, ARO, The Volcani Center, Bet Dagan, Israel.**
- 1998-1999 Visiting professor, Arid Land Research Center, Tottori University, Tottori, Japan.
- 2000 Received the title **Full Professor** by the Hebrew University of Jerusalem.
- 2002 Visiting professor, Arid Land Research Center, Tottori University, Tottori, Japan.
- 2003- 2007 Deputy Director, Agricultural Research Organization (ARO), Ministry of Agriculture and Rural Development, Bet Dagan, Israel.**
- 2007-2008 Visiting professor, College of Art and Sciences, Florida Gulf Coast University, Fort Myers, Florida, USA.
- 2010 Retired. Consulting for the following companies:**
1. Mekorot – The Israel's National Water Company,
2. BARD - United States - Israel Binational Agricultural Research and Development Fund,
3. National Coal Ash Board
- 2011 – 2012 Lecturing on Irrigation and soil-water relation to professionals in the Israeli Ministry of Agriculture and to farmers.**
- 2011 – present. Faculty member of the Florida Gulf Coast University.**

Professional Society Activities:

- 1979-1981 Member, Israel Society of Soil Science Committee.
- 1982-1983 Committee Secretary, Israel Society of Clay Research.
- 1983 Secretary, Organizing Committee of the International Conference on "Soil Salinity under Irrigation - Processes and Management."

- 1984 Member, Organizing Committee of the Third International Workshop on "Salinity water for Agriculture and Aquaculture."
- 1984 Co-Editor in Irrigation Science Journal for a special issue devoted to papers which were presented at the International Conference on "Soil Salinity under Irrigation - Processes and Management."
- 1984 A member of the steering committee for research and development of Arad Valley region, Israel.
- 1984-1990 A member of the editorial board of the journal "Agricultural Research in Israel."
- 1985 Editor of the journal "Agricultural Research in Israel."
- 1986-1996 Member of the steering committee for research and development of Jordan Valley region, Israel.
- 1988-1990 Member of the Soil and Water Scientific Evaluation committee, the Israeli Ministry of Agriculture.**
- 1988-1989 Member of the Brackish Water Scientific Evaluation committee, the Israeli Ministry of Agriculture.**
- 1988-1991 Appointed by the Senate of the University of Nairobi, Kenya, as the External Examiner for Soil Science Department.
- 1990-1991 A Chairman of the Salinity Scientific Evaluation committee, Irrigation division, Israeli Ministry of Agriculture.
- 1990-1992 A Chairman of the Soil and Water Scientific Evaluation committee, the Israeli Ministry of Agriculture.
- 1991-1999 Steering Committee, Soil Erosion Division, The Israeli Ministry of Agriculture.
- 1994 Member of the Effluent Water Scientific Evaluation committee, the Israeli Ministry of Agriculture.
- 1995 - Present Member of the Fly Ash professional committee, the National Coal Ash Board, Israel.**
- 1995 Member of the Water Quality Evaluation committee, the Israeli Ministry of Agriculture.**
- 1995 Member of the Water Quality Evaluation committee, the Israeli Ministry of Environmental Quality.**
- 1995 Member of the committee of Management of Reused Resources for the Mediterranean countries. INRA. Paris, France.
- 1995 Steering Committee, Israel-Jordan-Palestinian Authorities -USA. Expert Meeting. Tiberius, Israel.
- 1995 Expert Meeting on Soil Salinity Soil Protection and Irrigation Management. Israel-Jordan Regional Research Activity. Amman, Jordan.
- 1996 Expert Meeting on Water Harvesting in Semiarid and Arid regions. Israel-Jordan Regional Research Activity. Amman, Jordan.
- 1996-1997 Steering Committee on Methodology for setting environmental standards. The Israeli Ministry of Environmental quality. Nomination by the Government of Israel.

- 1997-2003 A Chairman of an Expert Committee on the establishment and promotion of cooperation in research and extension between China and Israel.
- 1997-2000 A member of a Professional Committee on Combat Desertification. Ministry of Foreign Affairs, Israel.
- 1997-2003 A member of a Steering Committee on Climatic Changes. Ministry of Environmental quality, Israel.
- 1998 Israeli representative of the Ministry of Agriculture to the Japan-Israel Cooperation in Agricultural Research.
- 1999-2003 A member of a Steering Committee on Recycled Water Use for Agriculture purposes - Research and Development.**
- 1999-2003 A Chairman of the National Expert Committee on Recycled Water Use for Agriculture purposes - Research and Development.**
- 1999-2003 A Chairman of a Steering Committee on Water Use Efficiency, Israeli Ministry of Agriculture.**
- 1999-2001 Israeli representative for the EU 5th Framework Programme INCO-2. European Commission. Directorate-General XII, Science, Research and Development, Brussels, Belgium.**
- 2000-2001 A member of the selection committee for the International Soil Science Award, Soil Science Society of America**
- 2000 - Present A member of a Steering Committee on Recycled Water Plant (SHAFDAN), Water Commissionaire, Israel.**
- 2001 Member, Organizing Committee of the 31st National conference of the Israeli Ecology and the Environmental Sciences Society.
- 2001 A Chairman of a professional committee on effluent criteria for irrigation. Ministry of Environment, Israel.**
- 2002-2003 A member of the Editorial Advisory Board of the Encyclopedia of Soils in the Environment. Academic Press, Elsevier Science, London.
- 1999 -2003 A member of the Technical Advisory Committee (TAC), United States-Israel Bi-national Agricultural Research and Development Fund (BARD).**
- 2004 - present A member of the Technical Advisory Committee (TAC), Texas-Israel Binational Agricultural Research and Development Fund (BARD).**
- 2004 – 2007 Initiate the idea and established the foundation for the Bi-Lateral cooperation in agriculture research between Israel and Canada and Queensland, Australia. These two foundations are active since 2006.**
- 2005 – 2007 A member of the Standing Committee in Agriculture Research (SCAR), European Union, Brussels, Belgium.**

Consulting and Special Activities:

1. Expert Meeting on Soil Protection. Regional Activity Center, PAP, UNEP - Mediterranean Action Plan. 1985, Split, Yugoslavia.
2. Evaluation and consultation on salt affected soils in Dominican Republic. Ministry of Agriculture, Santo Domingo, Dominican Republic, 1987.
3. Evaluation and consultation on saline-sodic soil reclamation. Gravelly Ford Ranch, Madera County, California, USA. 1987.
4. External Examiner for Soil Science Department, the University of Nairobi, Kenya. 1989.
5. 1988-Present. Consulting on water use efficiency and water quality, Ministry of Science, Israel.
6. External Examiner for Soil Science Department, the University of Nairobi, Kenya. 1990.
7. Consultation and planning field studies on furrow irrigation to improve water distribution uniformity. Nanjing, People's Republic of China. 1991-1992.
8. Consultation and evaluation on water quality and improve water use efficiency, Rajasthan, India. Tahal Consulting Engineers Ltd. Israel. 1995.
9. Consultation and evaluation on salt affected soils and alkalization in Senegal. Organized by Cinadco, Ministry of Agriculture, Israel. 1996.
10. Consultation and evaluation on salt affected soils and soil permeability in Egypt. Tahal Consulting Engineers Ltd. Israel. 1996.
11. Conducting workshop on water use efficiency in irrigation. Fujian province, China. Organized by Cinadco, Ministry of Agriculture, Israel. 1996.
12. Expert Meeting on Brackish Water in Semiarid and Arid regions. Israel-Palestinian-Jordan Regional Research Activity, Amman, Jordan. 1997.
13. Expert Meeting on validation of the Environment Water Task Force Final Report. European Commission Joint Research Center. Baveno, Italy. 19-21.6.1997.
14. Expert Meeting on World Water Vision - Water for food and Rural Development. Consultation of Experts from Middle East and North Africa (MENA) Region. Bari, Italy. 27-29 May, 1999.
15. Consultation and evaluation on sandy soils and their agricultural potentialities. Jianli County, Hubei Province, China. January 11-15, 1999.
16. Project leader, A grant from the Ministry of Science, Israel, on "Minimizing Adverse Environmental Effects of Land Disposal (Irrigation) of Treated Effluent". A project for three years (1998-2000). Total budget of US\$ 1,000,000.
17. Advisor for the Extension Service of Israel, Ministry of Agriculture on Soil Salinity and Water Quality.
18. Project leader, A grant from the Ministry of Science, Israel, on "Minimizing Adverse Environmental Effects of Land Disposal (Irrigation) of Treated Effluent". (2005-2008).

19. Consultation and evaluation the fly ash impact on the environment. The Coal Company, Israel.
20. **Consulting for the following companies:**
 1. Mekorot – The Israel's National Water Company,
 2. BARD - United States - Israel Binational Agricultural Research and Development Fund,
 3. National Coal Ash Board
21. **Lecturing on Irrigation and soil-water relation to professionals in the Israeli Ministry of Agriculture and to farmers.**

Teaching (including guidance of students):

1968-1969	Ben Gurion University of the Negev - Chemistry.
1969-1973	Ben Gurion University of the Negev - Physical Chemistry.
1976	Course on Physical Chemistry. Held in the ARO, Bet Dagan.
1978	Course on Soil Chemistry at the 5th International Course on Irrigation. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1981	Advanced course for advisory service personnel of Ministry of Agriculture on Soil Chemistry. Held in the ARO, Bet Dagan.
1975-1982	Course on Physical Chemistry. The Hebrew University of Jerusalem, Faculty of Agriculture, Rehovot.
1986	Course on water quality, salt control and soil reclamation. Held at the Dept. of Land, Air and Water Resources, Univ. of California, Davis, California, USA.
1987	Course on soil salinity and sodicity at the 18th International course on Irrigation. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1988	Course on soil salinity and sodicity at the 19th International course on Irrigation. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1989	Course on water quality in relation to soil properties. The Kurt M. Schallinger 20th International Post Graduate Irrigation Course. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1990	Course on water quality in relation to soil properties. The Kurt M. Schallinger 21th International Post Graduate Irrigation Course. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1991	Course on water quality in relation to soil properties. The Kurt M. Schallinger 22th International Post Graduate Irrigation Course. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1993	Course on water Soil Physical Chemistry. The Kurt M. Schallinger 24th Advanced International courses on Irrigation and Soil Management. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1994	Course on water Soil Physical Chemistry. The Kurt M. Schallinger 25th Advanced International courses on Irrigation and Soil Management. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1995	Course on water Soil Physical Chemistry. The Kurt M. Schallinger 26th Advanced International courses on Irrigation and Soil Management. Held at the ARO, The Volcani Center, Bet Dagan, Israel.
1998, 2001, 2002	Course on water quality in relation to soil properties. Arid Land Research Center, Tottori University, Tottori, Japan.

1996 - 2007	Soil Erosion and soil reclamation. The Hebrew University of Jerusalem, Faculty of Agriculture, Food and Environmental Quality Sciences, Rehovot, Israel.
2007-2008	Clay particles interaction and water quality relations. Florida Gulf Coast University, Fort Myers, Florida, USA.

Advising Graduate Students:

1984	Appointed by the Hebrew University in Jerusalem as a supervisor for doctoral students.
1988-1991	Member of a Graduate Student's advisory committee, Texas A&M University, College Station, Texas, USA.
1998	Appointed by the University of Tottori, Tottori, Japan as a supervisor for doctoral students.

1. Uri Mezuman. Received a M.Sc Degree from the Hebrew University of Jerusalem. 1981. Subject: Boron adsorption by clay minerals and soils using a phenomenological equation.
2. Uri Yermiyahu. Received a M.Sc degree from the Hebrew University of Jerusalem. 1988. Subject: Boron sorption by soil and uptake by plant as affected by organic matter.
3. Jeremy F. Hollis. Received a Ph.D degree from the University of Reading, Reading, England. 1988. Subject: The use of fly ash in agriculture.
4. Yaron Yutal. Received a M.Sc degree from the Hebrew University of Jerusalem. 1990. Subject: Leaching of boron and chloride in Jordan Valley soil affected by infiltration rate.
5. Bruno del Rio. Received a M.Sc degree from the Texas A&M University, College Station, Texas. USA. 1991. Subject: CaCO_3 equilibria and double decomposition reactions affecting physical properties of clay-sand mixtures.
6. Efraim Bar. Received a M.Sc degree from the Hebrew University of Jerusalem. 1994. Subject: Effects of adsorbed ion composition on soil hydraulic properties and cotton plants production.

7. Guy Reshef. Received a M.Sc degree from the Hebrew University of Jerusalem. 1996. Subject: The contribution of fly ash to soil and water contamination.
8. Hanita Peri. Received a M.Sc degree from the Hebrew University of Jerusalem. 1998. Subject: The potential hazardous of sewage effluent in respect to heavy metals contamination of soils and water resources.
9. Yeoshuha Kalobati. Received a M.Sc degree from the Hebrew University of Jerusalem. 1998. Subject: The effect of sewage effluent on soil structure.
10. Masae Arai. Received a M.Sc. degree from Tottori University, Tottori, Japan. 1999. Subject: Hydraulic conductivity of soils with 2:1 and 1:1 clay minerals as affected by water quality under saturated condition.
11. Ulaf Grinberg, Received a M.Sc degree from the Hebrew University of Jerusalem. 2000. Subject: Polymers movement in soil and their effect on hydraulic conductivity. (Supervised jointly with Prof. Y. Chen and Dr. M. Ben Hur).
12. Abraham Zilberman. The Hebrew University of Jerusalem. 2000. Subject: Long term effect of saline waters and reclamation practices on soil properties. (Supervised jointly with Prof. A. Banin).
13. Naama Benny. Received a M.Sc degree from the Hebrew University of Jerusalem. 2000. Subject: Boron in wastewater: Chemical reactivity, concentrations and effects on plants. (Supervised jointly with Prof. Y. Chen and Dr. J. Tarchitzky).
14. Hadar Heller. Received a Ph.D degree from the Hebrew University of Jerusalem. 2001. Subject: Mechanisms of clay stabilization by synthetic polyanions.
15. Li Fahu. Received a Ph.D degree from the Hebrew University of Jerusalem. 2001. Subject: The role of Soil CaCO_3 in reclamation of sodic soil.
16. Masae Arai. Received a Ph.D degree from Tottori University, Tottori, Japan. 2003. Subject: Hydraulic conductivity of arid and semiarid soils as affected by water quality. (Supervised jointly with Prof. T. Yamamoto).
17. Avraham Tzipori. A candidate for a M.Sc degree from the Hebrew University of Jerusalem. 2004. Subject: Fly Ash–Soil interaction.
18. Dana Milstein. A candidate for a Ph.D degree from Tel Aviv University. Subject: Use of constructed wetland for polishing and quality assurance of wastewater effluent for stream rehabilitation. (Guidance committee).

Reviewing of Scientific Manuscripts for the Following Journals:

1. Soil Science Society of America Journal.
2. Clays and Clay Minerals.
3. Advances in Colloid and Interface Science
4. Water Resources Research.
5. Journal of Soil Science.
6. Irrigation Science.
7. Journal of Environmental Quality.
8. Canadian Journal of Soil Science.
9. Forest Ecology and Management.
10. Geoderma.
11. Separation Science and Technology
12. Aquacultural engineering
13. Encyclopedia of Soils in the Environment

Membership in Professional Societies:

1. American Society of Agronomy
2. Soil Science Society of America
3. Israel Society of Soil Science
4. Israel Society of Clay Research
5. Israel Society of Ecology

Invited Lectures:

1. Effect of dissolution rate on the efficiency of gypsum in improving permeability of sodic soils. International Symposium of Phosphogypsum. Florida, USA, 1980.
2. The effect of exchangeable ions and electrolyte concentration in solution on some physical and chemical properties of montmorillonite and montmorillonitic soils. Inst. of Agriculture and Natural Resources, University of Nebraska, Lincoln, Nebraska, USA, 1981.
3. Chemical aspects of soil reclamation. Salinity Laboratory, Riverside, California, USA, 1981.
4. The effect of exchangeable sodium and gypsum on infiltration rate and surface runoff. New Mexico State University, Las Cruces, New Mexico, USA, 1983.
5. Boron tolerance of Mexican wheat. International Workshop on Salt-affected Soils of Latin America, Venezuela, 1983.

6. Colloid properties of clay minerals in saline sodic solutions. International Conference on Soil Salinity under Irrigation - Processes and Management, Israel, 1984.
7. Soil dissolution as affected by water flow velocity. New Mexico State University, Las Cruces, New Mexico, USA, 1984.
8. Chemical factors affecting sodic soil permeability. Texas A&M University, College Station, Texas, USA, 1984.
9. Aspects of soil erosion in Israel. Regional Activity Center, Priority Action Programme, UNEP Mediterranean Action Plan, Split, Yugoslavia, 1985.
10. Reduction of the cation exchange capacity of montmorillonite by uptake of hydroxyl-Al polymers. Technical University, Munich Freising Weihenstephan, Germany, 1985.
11. On the flocculation of montmorillonite particles in aqueous media. Geoisotope Group Seminar. The Weizmann Institute of Science. Israel, 1987.
12. Effect of soil chemical properties on water infiltration in soils. University of Khon Kaen, Khon Kaen, Thailand, 1987.
13. Clay particles interaction in aqueous suspension as affected by clay type, adsorbed ions, and solution composition. Texas A&M University, College Station, Texas, USA, 1988.
14. Soil permeability as affected by sodic and saline conditions. Texas A&M University, College Station, Texas, USA, 1988.
15. Flocculation value of clay in aqueous suspension and solid particles interaction. University of Delaware, Newark, Delaware, USA, 1989.
16. Specific effect of magnesium on the permeability of soil to water. The Hebrew University, Faculty of Agriculture, Rehovot, Israel, 1989.
17. Specific effect of Mg ions on soil permeability and erosion. University of Stellenbosch, Stellenbosch, Republic of South Africa, 1990.
18. Interaction between clay particles in aqueous media. Soil and Irrigation Research Institute (SIRI), Pretoria, Republic of South Africa, 1990.
19. Boron - soil interaction. Soil and Irrigation Research Institute, Pretoria, Republic of South Africa, 1990.
20. Rheology of aqueous montmorillonite-kaolinite suspensions. Colloidal and surface chemistry of clays symposium of the American Chemical Society (201st annual meeting). Atlanta, Georgia, USA, 1991.
21. Boron sorption on composted organic matter and its uptake by plants. Boron in Biological Systems Workshop III. University of Missouri-Columbia, Missouri, USA, 1992.
22. Mechanisms and processes affecting hydraulic conductivity and water infiltration in sodic soils. University of Delaware, DE, USA, 1992.
23. The effect of clay swelling rate on hydraulic properties of sandy soils. Cornell University, Ithaca, NY, USA, 1993.
24. Soil permeability as affected by water quality. Bi-National UK-Israel Conference on "Agriculture in a Cleaner Environment - New

- Technologies. Rothamsted Experimental Science, Harpenden, England. 1994.
25. Water quality and sustainable irrigated agriculture. Israel-Chinese Joint Workshop on "Agrometeorological aspects of efficient water use in agriculture". Israel, 1994
 26. Water quality assessment and the impact on soil swelling, clay dispersion and hydraulic properties of soils. Israel-Ceara, Brazil workshop. Fortaleza, Ceara, Brazil,. 1995.
 27. On the properties of clay mineral surfaces. University of Delaware, DE, USA, 1995.
 28. Effect of salt composition in sewage effluent on the hydraulic properties of soils. Conference on "Irrigation with Sewage effluent". Jerusalem, Israel. 1996.
 29. Sino-Israeli workshop on agricultural water saving irrigation technology. Ministry of water resources, The People's Republic of China. Fujian Province, China. 1996.
 30. The S.P. Monselise-A. Bar-Akiva Memorial Foundation, the 10th Memorial Workshop on Modern Citrus Research in Israel. 1996.
 31. Effect of anionic polyacrylamides on colloidal properties of illite suspensions at low electrolyte concentrations. The Israel Society Of Clay Research. Rehovot, Israel. 1988.
 31. The role of Clay swelling and dispersion in hydraulic properties of clay-sand mixtures. University of Tokyo, Tokyo, Japan. 1998.
 32. Soil properties under saline conditions. Kimura chemical plants, Amagasaki, Japan. 1998.
 33. Arid soil properties and combating desertification. Seminar on combating desertification in the Middle East, Japan International Cooperation Agency (JICA). Tottori, Japan. Nov. 1998.
 34. Sodic saline soil reclamation. International conference, Arid Land Research Center, Tottori University, Tottori Japan. 1998.
 35. Arid Lands irrigation and agroproductivity: Theories and their implementations. National conference on construction of field studies. Japan Academy of Sciences. Kyoto University. July, 1998.
 36. Combat Desertification - the agricultural approach. International conference, The CCD organization. Arid Land Research Center, Tottori University, Tottori Japan. 1998.
 37. Boron in wastewater, soil and plants in Israel: effects on plant growth and potential remedy. International conference, Israel Ministry of Science, Jerusalem, Israel. April, 1999.
 38. Citrus responses to boron under saline condition. International Society of Citriculture. Florida, USA, 2000.
 39. Water quality and soil hydraulic properties. University of Missouri, Columbia, Missouri, USA, 2000.

40. Rheology of Na-montmorillonite suspension and particle-particle association in aqueous media. The Israel Society of Clay Research. Rehovot, Israel. 2001.
41. Fly ash utilization in agriculture. Novel Products from Combustion Residues: Opportunities and Limitations. Morella, Spain. June 5-8, 2001.
42. Response of saline-sodic soil to water quality: Processes and managements. Field Research on Soil Degradation in Arid Land. 40th Annual Meeting of Soil Physics Section, Japanese Society of Irrigation, Drainage and Reclamation Engineering (JSIDRE). Tottori, Japan. December 2001.
43. Plant uptake of Boron as affected by Boron distribution between the liquid and the solid phases in soil. Kyushu University, Fukuoka, Japan. February, 2002.
44. On water quality for irrigation and soil hydraulic properties. Arid Land Research Center, Tottori University, Tottori Japan. October, 2003.
45. Non-conventional water resources for irrigation in semi-arid and arid regions: Challenges and risks. Arid Land Research Center, Tottori University, Tottori Japan. November, 2004.
46. Water quality and soil hydraulic properties. Arava Valley Conference, 2005.
47. Agricultural Research in Israel, European Union, SCAR, Brussels, Belgium, Dec. 2005
48. Irrigation with recycled water – Boron and Salinity Aspects. Conference on water quality for irrigation, Izrael Valley, 2006.
49. Release of Oxyanions from Fly Ash in Aqueous Media. International Fly Ash Conference, Tel Aviv, May, 2006
50. Conference on "Irrigation with Sewage effluent". Jerusalem, Israel. Feb. 15, 2006.
51. Water Issues in Agriculture. Agritech, Tel Aviv, 2006.
52. Water – Israeli Case. Agritech, Tel Aviv, 2006.
53. Soil, water and Salinity relations –Environmental Aspects. Florida Gulf Coast University, Fort Myers, Florida, USA, 2007.

Major Competitive Grants (Since 1993)

- 1993 A grant from the US-Israel Agricultural Research and Development Fund (BARD) on “Reducing water evaporation from cultivated soils by mulching with crop residues and stabilized soil aggregates” (with Dr. M. Fucks, Dr. A.Hadas and Dr. J.L. Hatfield). A project for three years.(\$ 300,000).

- 1994 A grant from FMC Corporation, Philadelphia, Pennsylvania, USA, to study the “Polymaleic Acid as Soil Conditioner”. A project for three years. (\$ 127,000).
- 1995 A grant from the US-Israel Agricultural Research and Development Fund (BARD) on “Improving efficiency of reclamation of sodium-affected soils” (with Dr. S. Miyamoto). A project for three years (\$ 297,000).
- 1996 A grant from the US-Israel Cooperative Development Research Program (CDR), US Agency For International Development (Kazakhstan) on "Improving Grape Productivity by Reclaiming Saline Sodic High Boron Soils in Southern Kazakhstan" (with Dr. E.M. Kovalenko). A project for three years (\$ 160,000).
- 1997 A grant from the Ministry of Agriculture, Israel, on “ The effect of water quality on Soil hydraulic properties”. A project for three years (\$ 60,000).
- 1997 A grant from the Ministry of Environment , Israel, on “Soil and ground water contamination by microelements released from Fly Ash”. A project for three years (\$ 65,000).
- 1998 A grant from the Ministry of Science, Israel, on “Minimizing Adverse Environmental Effects of Land Disposal (Irrigation) of Treated Effluent”(A research leader with several Scientists from Volcani Center, ARO, The Hebrew University and The Technion). A project for three years (\$ 1,000,000).
- 2001 A grant from the Israel – China Agricultural Research and Development Fund on “ Optimizing the use of reclaimed waste water for sustainable agriculture and environment” (with Dr. Guanhua Huang, Dr. Y. Cohen and Dr. U. Yermiyahu). A project for two years (\$ 160,000).
- 2002 A grant from the Ministry of Agriculture, Israel, on “Crop irrigation with effluent while minimizing environmental impacts”(A research leader with several Scientists from Volcani Center, ARO, The Hebrew University and The Technion). A project for three years (\$ 300,000).
- 2003 A grant from the Ministry of Environment and Territory, Italy, on Polishing municipal secondary effluent for stream rehabilitation. A project for 3 years. In collaboration with Tel Aviv University.
- 2004 A grant from The National Coal Supply Corporation on “Oxy-anions dissolution from fly ash in basic aqua media”. Total budget of US\$ 40,000.

- 2004 A grant for 3 years from GIF on “Boron Binding by Natural Organic Matter: The Basis for Remediation of Boron Rich Waters and Soils”. A project for 3 years. Total budget of US\$ 260,000.
- 2005 A grant for 3 years from the Ministry of Science, Israel, on “Minimizing Adverse Environmental Effects of Land Disposal (Irrigation) of Treated Effluent”. Total budget of US\$ 150,000.
- 2006 A grant for 3 years from ICA on the effect of effluent on soils under irrigation. Total budget of US\$ 165,000.

LIST OF PUBLICATION

Refereed Journal Articles:

1. **Keren, R.** and A.J. Amiel. 1974.
The distribution of iron oxides and the formation of iron-manganese concretions in red sandy soils of Israel. The Inter. Conf. Soil Sci. 6:250-256. Moscow, USSR.
2. **Keren, R.** and I. Shainberg. 1975.
Water vapor isotherms and heat of immersion of Na-Ca montmorillonite systems. I. Homoionic clay.
Clays and Clay Minerals 23:193-200.
3. **Keren, R.,** R.G. Gast, and R.I. Barnhisel. 1977.
Ion exchange reactions in non-dried chambers of montmorillonite hydroxyl-Al complexes.
Soil Sci. Soc. Amer. J. 41:34-39.
4. **Keren, R.** and I. Shainberg. 1979.
Water vapor isotherms and heat of immersion of Na-Ca montmorillonite systems. II. Mixed systems.
Clays and Clay Minerals 27:145-151.
5. **Keren, R.** 1979.
The effect of hydroxy-aluminum precipitation on the exchange properties of montmorillonite.
Clays and Clay Minerals 27:303-304.

6. **Keren, R.** and I. Shainberg. 1980.
Water vapor isotherms and heat of immersion of Na/Ca montmorillonite systems. III. Thermodynamics.
Clays and Clay Minerals 28:204-210.
7. **Keren, R.**, J.F. Kriet, and I. Shainberg. 1980.
Influence of size of gypsum particles on the hydraulic conductivity of soils.
Soil Sci. 130:113-117.
8. **Keren, R.** 1980.
The effect of rate of titration pH and drying process on CEC reduction and particle size distribution of montmorillonite hydroxy-Al complexes.
Soil Sci. Soc. Amer. J. 44:1209-1212.
9. **Keren, R.** and I. Shainberg. 1980.
The effect of surface application of gypsum on soil permeability.
2nd Inter-American Conference on Salinity and Water Management
Technology 2:79-90.
10. **Keren, R.** and I. Shainberg. 1980.
The effect of surface application of gypsum on soil permeability. 2nd
Inter-American Conference on Salinity and Water Management
Technology 2:79-90.
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