

CURRICULUM VITAE

Prof. Dr. **Aly Islam Metwally Aly**

Personal Data

Name : Aly Islam Metwally Aly
Nationality : Egyptian
Date of Birth : 27 November, 1945
Place of Birth : Quesna, Menoufia, Egypt.
Marital Status : Married with a son (date of birth 7 July, 1979 and a daughter (date of birth 4 September, 1984).
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Academic Qualifications

- B.Sc.** Chemical Engineering, (Very Good with honours degree), Cairo University, Cairo, Egypt, 1966.
- M.Sc.** Chemical Engineering, Cairo University, Cairo, Egypt, 1970.
- Ph.D.** Chemical Engineering, Aachen University, Aachen, Germany, 1976.

Employment Record & Professional Experience

2011 till present, Emeritus Professor and Consultant to the Chairman of the Egyptian Nuclear and Radiological Regulatory Authority.

2008 till 2011: Emeritus Professor and Consultant to the Chairman, Egyptian Atomic Energy Authority.

July, 2002 till November 2008 : Chairman, Atomic Energy Authority, Cairo, Egypt.

May, 2001 to July, 2002: Vice Chairman of Atomic Energy Authority, 3 Ahmed Elzomor Street, Elzohor district, Nasr City, Children Village P.O. Box 9621, P.code 11787, Cairo, Egypt.

3rd July, 2000 to 12th May, 2001: Delegated from the Egyptian Atomic Energy Authority as Director of the Middle eastern Regional Radioisotope Centre for the Arab Countries, 25 Ahmed El Zayat Str., Dokki, 12311, Cairo, Egypt

1995 till present : Head of the Central Laboratory for Environmental Isotope Hydrology. The laboratory is considered a regional laboratory with a good reputation for accurate isotopic analysis of water.

July, 2000- May, 2001: Director, Middle Eastern Regional Radioisotope Centre for the Arab Countries, 25 Ahmed El Zayat street, Dokki, 12311, Cairo, Egypt

1985 -1990 and from 1995 till 2000 : Chairman of the Siting and Environmental Department, National Centre for Nuclear Safety and Radiation Control, Egyptian Atomic Energy Authority, Nasr City, 11762, P.O. Box 9621, Cairo, Egypt.

1990 - 1995 : Professor of Chemical Engineering, Chemical Engineering Department, Jordan University of Science and Technology, Irbid, Jordan (on leave from the Egyptian Atomic Energy Authority).

1989 : Professor of Chemical Engineering, Siting and Environmental Department, National Centre for Nuclear Safety and Radiation Control, Egyptian Atomic Energy Authority, Cairo, Egypt.

1966 till July 2000 : Egyptian Atomic Energy Authority, where I was promoted to associate professor of Chemical Engineering in 1984 and to Full Professor of Chemical Engineering (Environmental) in 1989 (academic title on 16th April, 1989 and financial degree on 1st July, 1990).

1987-1990 : Head of Isotope Hydrology Division, Middle Eastern Regional Radioisotope Centre for the Arab Countries, Dokki, Cairo, Egypt.

2006 till Present : President of the Egyptian System of Accounting for and Control of Nuclear Material.

2004-2008 : Member in The Nuclear Safety Standards Committee (NUSSC), IAEA.

Member of the Board of the Middle East Optical Synchrotron, Jordan.

Member of the Board of the Middle Eastern Regional Radioisotope Centre for the Arab Countries, Dokki, Cairo, Egypt.

Member of the Executive Board of the Arabic Atomic Energy Authority, Tunisia.

The National Coordinator for the Technical Cooperation Projects with the International Atomic Energy Authority.

The National Coordinator for the AFRA project with the International Atomic Energy Authority.

Member of the Hydrology Committee of the Ministry of Irrigation and Water Resources, Egypt.

Member in the Engineers Syndicate, Egypt.

Member in the Egyptian Society of Engineers.

Scientific Awards

1989 : Award of Prof. Ibrahim ElAssuity, the Egyptian Academy of Scientific Research and Technology in the field of Water Resources Development and Pollution Control.

1997 : Egyptian Atomic Energy Award for distinguished scientific achievements.

Expert Missions

19-31 July 1999 : International Atomic Energy Agency Expert in Tanzania, Ministry of Water, in the field of nitrogen-15 and isotope hydrology.

1-12 August 1999 : International Atomic Energy Agency Expert in Zimbabwe, Ministry of Rural Development, in the field of isotope hydrology.

29 May-13 June 2000: International Atomic Energy Agency Expert mission in Isotope Hydrology to the Ministry of Water in Tanzania.

16 April-4 May 2001: International Atomic Energy Agency Expert mission in Isotope Hydrology to the Ministry of Water in Tanzania.

6-10 May 2002 : International Atomic Energy Expert to Kenya for strengthening the local capabilities in Kenya in the field of the applications of environmental isotopes in water resources development.

Teaching Experience

1990 - 1995 : Professor of Chemical Engineering in the Department of Chemical Engineering, Jordan University of Science and Technology, Irbid, Jordan.

Courses taught : Pollution and its control, applications of isotopes in industry and hydrology (postgraduate level)., water and waste water treatment, separation processes, chemical process technology, heat transfer laboratory, chemical process and kinetics laboratory, materials laboratory, fluid mechanics laboratory, unit operations laboratory, chemical engineering economics.

1978-1979: Teaching fluid mechanics in the Chemical Engineering Department, Cairo University, Cairo, Egypt.

Theses Supervision

- 1. M. Sc. Thesis** by Mohamed Aly Mohamed Aly, "Evaluation of N-15 in water pollution with respect to nitrogen fertilizers transformation in soils", **Ain Shams University, Cairo (1982).**
- 2. Ph.D. Thesis** by Nabil Arafat Belacy, "Studies on the global carbon cycle: Registration of the anthropogenic carbon dioxide increase in the atmosphere by the C-13 record in the tree rings", **Ain Shams University, Cairo, (1984).**

3. **M.Sc. Thesis** by Sawsan Gamal Abd El-Samie, "Determination of C-13/C-12 isotopic ratio in different petroleum oils and natural gases", **Ain Shams University, Cairo, (1984)**.
4. **Ph.D. Thesis** by Mostafa Ahmed Awad El-Gayar, "Applications of environmental isotopes in the study of water and salinity budgets of the irrigation network of the Nile Delta", **Ain Shams University, Cairo, (1988)**.
5. **M.Sc. Thesis** by Wafaa Mohamed Mostafa, "Enrichment of tritium and its determination and hydrochemical study of some Egyptian water samples", **Chemical Engineering Department, Cairo University, (1988)**.
6. **M.Sc. Thesis** by Abu-Bakr Abd El-Monem Ramadan, "Environmental pollution of some Egyptian plants by some trace elements", **Zagazig University, Zagazig, Egypt**.
7. **M.Sc. Thesis** by Sayed Aly Mohamed Hassan, "Study on the behaviour of some radioactive isotopes in the aquatic ecosystem of Suez Canal water stream", **Ain Shams University, Cairo, (1988)**.
8. **M.Sc. Thesis** by Soheir Tawfeik Mohamed, "Seismic risk study and its relation with nuclear power plants", **Ain Shams University, Cairo, (1988)**.
9. **M.Sc. Thesis** by Faten Salah Tawfeik, "Atmospheric dispersion characteristics around Inchas nuclear research reactor and dose assessment calculations", **Chemical Engineering Department, Cairo University, Cairo, (1991)**.
10. **M.Sc. Thesis** by Mona Abbas Ahmed, "Radioactive dose assessment in the Suez Canal area with special emphasis on coal fired power plants", **Chemical Engineering Department, Cairo University, Cairo, (1992)**.
11. **M.Sc. Thesis** by Mostafa Abd El-Hamid Sadek, "Studies of trace elements in some rocks and groundwater samples and environmental isotope hydrology in the area between El-Dabaa and Ras Um El-Rakham, north western coast of Egypt", **Ain Shams University, Cairo, Egypt (1991)**.
12. **M.Sc. Thesis** by Ahmed Saed Salamah Al-Shuha, "Environmental isotopes studies on some water reservoirs in the northern part of Jordan",

Chemical Engineering Department, Jordan University of Science and Technology, Irbid, Jordan, (1992).

13. **M.Sc. Thesis** by Belal Mohamed Abu-Ashour, "Flue gas desulfurization by oxidation-regenerative process", **Chemical Engineering Department, Jordan University of Science and Technology, Irbid, Jordan, (1993).**
14. **M.Sc. Thesis** by Magdy Abdalla Hamed Abdalla, "Distribution of Uranium in Some Water, Soil and Plants at Different Locations in Nile Delta, Egypt", **Faculty of Science, Cairo University, (1998).**
15. **Ph.D. Thesis** by Mona Abbas Ahmed, "Study of Genesis and Quality of Groundwater in the Northern Part of Upper Egypt Using Chemical and Environmental Isotope Techniques", **Chemical Engineering Department, Cairo University, (1999).**
16. **M.Sc. Thesis** by Mohamed Abd El-Monem Zaki Farahat, "Design and Construction of the Nuclear Shelters (Analytical Study)", **Faculty of Engineering, Ain Shams University, Cairo (2000).**
17. **M.Sc. Thesis** by Nadia Mohamed Ahmed Sirag, "Environmental Engineering Study for Diagnostic and Radiotherapy Unit", Institute of Environmental Studies and Research", **Ain Shams University, Cairo, 2001.**
18. **M.Sc. Thesis** by Rasha Abdallah Hussein, "Study of Some Sources of Nitrate Pollution around Greater Cairo", **Ain Shams University, Cairo 2005.**
19. **Ph.D., Thesis** by Mohamed Abd El-Monem Zaki Farahat, "Planning and Design Bases and Technical Standards for Shielding Installations against Nuclear and Biological Hazards", **Faculty of Engineering, Ain Shams University, Cairo (2003).**
20. **Ph.D. Thesis** by Nadia Mohamed Ahmed Sirag, "Environmental Engineering " The energy reducing architectural design of radiation research building" **Institute of Environmental Studies and Research, Ain Shams University, Cairo, 2004.**
21. **Ph.D. Thesis** by Magdy Abdalla Hamed Abdalla, "Study of Natural Radioactivity, Environmental Isotopes and Hydrochemistry of Some Northern Lakes in Egypt" **Faculty of Science, Cairo University, (2004).**

22. **M.Sc. Thesis** by Hassan El Sayed Mohamed Gomaa, "Development and Modification of some selected techniques for Measuring ^{15}N isotopic content of ammonium and nitrate in water", **Chemical Engineering Dept., Faculty of Engineering, Minia University (2007).**
23. **M.Sc. Thesis** by Ahmed Abd El Salam Aly, " Using stable isotopes and other techniques as tracers for pollution transport in soil and plants" **Faculty of Agriculture, Ain Shams University, Cairo, 2007.**
24. **Ph.D., Thesis** by Tarek El Sayed Abd El Aziz El Daly, "Studies of Environmental Radioactivity and Hydrochemistry of Groundwater in El-Dabaa Nuclear Power Plant Site", **Faculty of Science , Banhaa university, 2007.**
25. **Ph.D., Thesis** by Rasha Abdallah Hussein, "Contribution of Environmental Isotopes and Hydrochemistry to Study the Eutrophication Phenomena in El-Manzla Lake" **Faculty of Science, Ain Shams University.**
26. **Ph.D., Thesis** by Hassan El Sayed Mohamed Gomaa, "Development of Some Techniques for Mass Spectrometric Determination of ^{18}O and ^{15}N Isotopic Composition of Nitrate", **Chemical Engineering Dept., Faculty of Engineering, Cairo University.**
27. **Ph. D. Thesis** by Shaimaa Mohamed Abu El-Yazeed, "Groundwater quality management in the middle Delta utilizing Environmental Isotopes" **Civil Engineering Dept., Faculty of Engineering, Tanta University.**

Conferences, Courses and Symposia

1. **Fourth international conference on stable isotopes, organized by the working group on stable isotopes, West Germany and the International Atomic Energy Agency, held in Nuclear Research Centre (KFA), Juelich, West Germany, March 23-27, (1981).**
2. **Second international conference on pure and applied biophysical sciences, Cairo, Egypt, 9-10 November, (1985).**
3. **First scientific general meeting at the National Research Institute of Astronomy and Geophysics, Cairo, Egypt, 24-26 November, (1986).**

4. **Fourth annual meeting of the Egyptian Geophysical Society, Cairo, Egypt, March 29-30, (1987).**
5. **Fourth conference of nuclear sciences and applications, Cairo, Egypt, 6-10 March, (1988).**
6. **Third conference of chemical engineers, Cairo, Egypt, 19-21 March 22-23, (1988).**
7. **Six annual meeting of the Egyptian Geophysical Society, Cairo, Egypt, March 22-23, (1988).**
8. **Regional seminar on isotope techniques in hydrology for developing countries in Africa, International Atomic Energy Agency, Vienna, Austria, October 15-19, (1990).**
9. **Postgraduate training course on groundwater tracer techniques, Graz, Austria, (1979).**
10. **Training course on Siting and Environmental aspects of nuclear power plants in the Technical Supervision Organization (TUV), Essen, West Germany, in the period 10 October, 1984 to 10.Febraury, 1985.**
11. **Ispra course on pressurized water reactor, organized by the European Community and held in Cairo, Egypt, 16.11-11.12.1985.**
12. **Course on the environmental impacts assessment of nuclear power plants, organized by the International Atomic Energy Agency, the U.S. Nuclear Regulatory Commission and the Egyptian Nuclear Regulatory and Safety Centre, Cairo, Egypt, 26.1-13.2.1986.**
13. **Ispra course on regional and long term transport of air pollution, Ispra Research Centre, Ispra, Italy, Sept. 15-19, 1986.**
14. **Ispra course on probabilistic safety assessment, Ispra Research Centre, Ispra, Italy, March 10-21, 1985.**
15. **Ispra course on ecological assessment of environmental degradation, pollution, recovery, Ispra Research Establishment, Ispra, Italy, October 12-16, 1987.**
16. **Environmental pollution control symposium, Mut'h University, Jordan, 21-22 October, 1991.**

17. **Fourth conference of chemical engineers, Cairo, Egypt, 27-29.12.1992.**
18. **Regional symposium on environmental studies, Alexandria, Egypt, May, 1990.**
19. **Organizing and main lecturing in the Arabic seminar on the application of environmental isotopes in hydrological studies, Arab Nuclear Energy Authority and Jordanian Ministry of Energy, and Water Authority of Jordan, Amman, 12-20 December 1992.**
20. **Jordanian chemical engineering conference I, Amman, 18-20 October, 1993.**
21. **Second coordination meeting of the model project RAF/8/022, IAEA, Isotopes in groundwater resources development, held in Cairo from 25 to 28 March 1996.**
22. **Jordanian chemical engineering conference II, Amman, 2-4 September, 1996.**
23. **International Seminar on the Use of Isotope Techniques in Marine Environmental Studies, Athens, Greece, 11-22 November 1996 organized by the International Atomic Energy Agency.**
24. **Third Arab Conference on the Peaceful Uses of Atomic Energy, Damascus 9-13 December 1996.**
25. **International Conference on Hazardous Waste (HAWA, 12-16 December 1998, Cairo, Egypt.**
26. **Fifth Arab Conference on the Peaceful Uses of Atomic Energy, Beirut: 13-17/11/2000.**
27. **The Egyptian Society of Nuclear Sciences and Applications Conference, Cairo, 2004.**
28. **International Conference on Environmental Physics, Minia University, Minia 2004.**
29. **Arab Atomic Energy Authority Conference, Cairo 2004.**
30. **Arab Atomic Energy Authority Conference, Cairo 2006.**

31. **VIII Radiation Physics & Protection Conference, Beni Sueif University, 13-15 November 2006**
32. **The Egyptian Society of Nuclear Sciences and Applications Conference, Sharm Elshiekh, 2008.**
33. **Arab Atomic Energy Authority Conference, Cairo 2008.**
34. **Symposium on "Planning Aspects and Effective Infrastructures for Nuclear Energy program", Lowrance Livermore National Laboratory 14-16 Jan., 2008**

Participation in International Research Projects

1. **1981-1984:** International Atomic Energy Agency Project No. 2928/EGY entitled "Studies of the Groundwater in the Northern Part of the Egyptian Eastern Desert Using Isotopic Techniques".
2. **1982-1984:** UNESCO project entitled "Determination of the Infiltration Rate from Ismailia Canal Using Nuclear Techniques".
3. **1985-1987:** International Atomic Energy Agency research contract No. 4292/RB entitled "Assessment of the Impact from Transporting Radioactive Materials in the Suez Canal".
4. **1986-1990:** International Atomic Energy Agency research project No. RAF 8/010 entitled "Water Resources in the Nile Valley (Egypt and Sudan)".
5. **1995-1997:** International Atomic Energy Agency model project RAF/8/022, entitled "Isotopes in Groundwater Resources Development".
6. **1995-1998:** International Atomic Energy Agency project RAF/8/009 entitled "Establishment of Tritium and Carbon-14 Laboratory".
7. **2001-2003.** International Atomic Energy Agency Technical assistance Project EGY/08/016, "Using Isotope Techniques to Study Water Resources".
8. **2005-2006.** International Atomic Energy Agency Technical Assistance Project EGY/08/018, "Sea Water Intrusion and Sources of rising water table that attack the Gerco Roman Antiquates at Alexandria City".

9. Regional IAEA/ UNDP project, RAF /08/036, for the countries Sharing the Nubian Sandstone Aquifer on a Transboundaries Scale (Egypt, Libya, Sudan and Chad), Evaluation and Management of the Aquifer Exploitation".
10. **2007-2008.** International Atomic Energy Agency Technical Cooperation Project EGY/08/021, entitled "Use of Environmental Isotopes in Studying Water Pollution in Selected Sites Due to Sewage Treatment Plants".

Research Activities

The main lines of research conducted were directed to the following fields:

- Water resources development using isotope hydrology techniques. The isotopes used are mainly, deuterium, oxygen-18, tritium, nitrogen-15 and carbon-14. Great attention was directed to the use of environmental isotopes techniques to detect the seepage from surface to groundwater and to determine the rechargability of the aquifers. A good example was the study of the seepage from the High Dam lake to the groundwater aquifer around it and segregation between the losses of water from the lake due to evaporation and seepage components. This work has been conducted with cooperation of IAEA in Vienna under the TC project RAF 8/010 "*Water Resources in the Nile Valley, Egypt, Sudan*". In this work, which was published in "Environmental Geochemistry and Health, 15 (1), 37-49, (1993), the oxygen-18 and deuterium isotopes were used to estimate the seepage and evaporation from the high Dam lake. Also, modeling of lakes using environmental isotopes was conducted. This work was

conducted in Wadi Arab lake in Jordan and published in IAEA conference in Athens (1996). Also seepage from Ismailia Canal was estimated using radioactive iodine-131. Several research works has been conducted in the field of applications of isotope hydrology (see list pf publications).

- Environmental pollution studies of water and air.
- Assessment of the risks from energy sources both nuclear and conventional.
- Evaluations of the site characteristics of nuclear installations.
- Water and air pollution control.

I supervised the establishment of a complete isotope hydrology and environmental pollution laboratory in which the major instruments are: isotope ratio mass spectrometer, ion chromatograph, gas chromatograph, atomic absorption spectrophotometer, liquid chromatograph, as well as vacuum techniques for sample preparations for isotopic analyses. Several M.Sc. and Ph.D. theses were supervised.

List of Publications

1. **A.I.M. Aly**, "Factors affecting the enrichment of deuterium in water by electrolysis", M.Sc. Thesis, Chemical Engineering Department, Cairo University, Cairo, Egypt (1970).
2. E. Hallaba, E. Abdel-Wahab, **A. Islam** and M. Hamza, "Measurement of deuterium in water by the falling drop method", Z. Anal. Chem., 247, 283-287, (1969).
3. E. Hallaba, **A.I.M. Aly**, "Laboratory enrichment of heavy water by electrolysis, Part I: design of electrolytic cells and calculations of the mean current density", Isotopenpraxis, 10, 427-430, (1971).
4. E. Hallaba, **A.I.M. Aly**, "Laboratory enrichment of heavy water by electrolysis, Part II: effect of current density, cathode material and temperature on the separation factor", Isotopenparaxis, 111/12, 456-459, (1971).
5. M.Y. Farah, E. Hallaba, M.R. Zaki, N.A. Haroun, S.A. El-Feky, **A.I. Metwally Aly**, E.M. Abdel Wahab, M.S. El-Alfi, N.M.E. Aly, K.A. El-Adham, "Recent trends in nuclear materials research in Egypt", Fourth United Nations International Conference on the Peaceful Uses of Atomic Energy, Geneva, 475-490, (1971).
6. **A.I.M. Aly**, "N-15 Untersuchungen zur anthropogenen Stoerung des natuerlichen Stickstoffzyklus", Ph.D. Thesis, Technical University of Aachen, West Germany, (1976).
7. H.D. Freyer and **A.I.M. Aly**, "Nitrogen-15 variations in fertilizers nitrogen", J. Environ. Quality, 3, No. 4, 405-406, (1974).
8. H.D. Freyer and **A.I.M. Aly**, "Nitrogen-15 studies on identifying fertilizer excess in environmental systems, in: Isotope Ratio as Pollutant Sources and Behavioural Indicators", Proc. Symp. IAEA/FAO Vienna, 21-33, (1975).
9. **A.I.M. Aly**, M.A. Mohamed and E. Hallaba, "Mass spectrometric determination of the nitrogen-15 content of different Egyptian fertilizers", J. Radioanal. Chem., 67, No. 1, 55-60, (1981).
10. **A.I.M. Aly**, M.A. Mohamed and E. Hallaba, **A.I.M. Aly**, M.A. Mohamed and E. Hallaba, "Natural variations of N-15 content of soil in the Wadi El-Natrun area in Egypt", Stable Isotopes, Anal. Chem. Symposia Series 11, 475-481, Elsevier Publishing Co., Amsterdam, Oxford, New York, Editors: H.L. Schmidt, H. Foerstel and K. Heizinger, (1982).

11. **A.I.M. Aly**, H. Faust, E. Hallaba and M.A. Mohamed, "Comparison between a modified wet hypobromite method and a dry ampoule technique for precise isotopic analysis of nitrogen-15", Arab J. Nucl. Sciences and Applications, 15-1, 145-157, (1983).
12. **A.I.M. Aly** and S. Abd Elsamie, "Sample preparation technique for precise mass spectrometric analysis of C-13 content of petroleum oil", Arab J. Nucl. Sciences and Applications, 16-2, 319-333, (1983).
13. **A.I.M. Aly** and M.A. Mohamed, "Separation of ammonium and nitrate for isotopic analysis of nitrogen-15 using vacuum distillation method", Isotopenpraxis, 19, 3, 67-69, (1983).
14. **A.I.M. Aly**, M.A. Mohamed, "Kinetic study of N-15 isotopic fractionation of ammonium fertilizers in Egyptian soils", Isotopenpraxis, 20, 1, 27-29, (1984).
15. F.M. Swailem, M.S. Hamza and **A.I.M. Aly**, "Isotopic composition of groundwater in Kufra, Libya", Intl. J. Water Resources Development, 2, No. 1, 331-341, (1983).
16. **A.I.M. Aly**, M.S. Hamza, A.H. Hashad, F.M. Swailm and S. Abd El-Samie, "Fractionation of stable carbon isotopes and the genesis of some crude oils from Egypt", Isotopenparaxis, 20, 5, 180-183, (1984).
17. M.S. Hamza, **A.I.M. Aly** and F.M. Swailem, "Groundwater recharge and pollution in Wadi El-Natron, Egypt", Intl. J. Water Resources Development, 2, No. 1, 39-44, (1984).
18. F. Abou El-Nour, M. Abdel-Khalik, H.A. Hassan and **A.I.M. Aly**, "Comparative study on the behaviour of the Alumina/Chromia-promoted Nickel catalysis in the liquid and vapour phase reactions", Isotopenpraxis, 21, 7, 224-246, (1985).
19. **A.I.M. Aly**, R.K. El-Shinawi, M.S. Hamza and A.T. Abdel-Fatah, "Environmental impacts of nuclear power plants in Egypt", 2nd National Conference on pure and Applied Biophysical Sciences, 9-10 November 1985.
20. **A.I.M. Aly**, O. Nasser, "Estimation of civil air crash probabilistic risk at El-Dabaa nuclear site, Egypt", Nuclear Regulatory and Safety Centre Report No. NRSC-TR-2, (1985).
21. M.S. Hamza, **A.I.M. Aly**, F.H. Swailem, N.W. El-Reedy and A. Nada, "Distribution of uranium and some trace elements in groundwater of Eastern Delta", Egypt, Isotope and Rad. Res., 18, 1, 9-15, (1986).

22. M.S. Hamza, **A.I.M. Aly**, F.M. Swailem and A. Nada, "Sea water intrusion in the eastern part of the Nile Delta groundwater aquifer", The Transactions of the Egyptian Society of Chemical Engineers, 12, No. 1, (1986).
23. M.S. Hamza, **A.I.M. Aly**, F.M. Swailem and A. Nada, "Groundwater recharge ages in the Eastern Nile Delta based on environmental tritium", Isotopes and Rad. Res., 18, 2, 101-108, (1986).
24. R.N.H. Albert and **A.I.M. Aly**, "Study of earthquake activity and seismic risk around El-Dabaa proposed site for the first nuclear power plant in Egypt", Proceedings of the Fifth Annual Meeting of the Egyptian Geophysical Society, Cairo, Egypt, March 29-30, pp. 461-486, (1987).
25. **A.I.M. Aly**, M.S. Hamza and S.G. Abd El-Samie, "Carbon-13 isotopic composition of the distillation fractions of some Egyptian crude oils", Isotope and Rad. Res., 19, 2, 93-98, (1987).
26. M.S. Hamza, **A.I.M. Aly**, F.M. Swailem and A. Nada, "Environmentally stable isotopes and groundwater recharge in the Eastern Nile Delta", Water Resources Development, 3, 4, 228-232, (1987).
27. **A.I.M. Aly**, G. Sabek, M. Abd El-Aal and M. El-Ghamry, "Evaluation of the atmospheric dispersion characteristics of the Suez Canal area", Proceedings of the Fourth Conference of Nuclear Sciences and Applications, March-6-10, Cairo, Egypt, Volume 2, 639-655, (1988).
28. **A.I.M. Aly**, M. Farah, F.H. Hammad, "A comparative study of the environmental impacts of nuclear versus conventional power plants", Proc. Third Congress of Chemical Engineering, 19-21 March 1988, Transactions of the Egyptian Society of Chemical Engineers, 14, No. 2, 10-25, (1988).
29. **A.I.M. Aly**, A. Nada, M. Awad, M. Hamza and H.J. Simpson, "Tritium and oxygen-18 hydrological investigation of groundwater aquifer in Assiut-Abnoub areas, Egypt", Isotope and Rad. Res. , 20, 2, 83-90, (1988).
30. **A.I.M. Aly**, M. Awad, A. Nada, M. Hamza and H. Simpson, "Evaluation of groundwater as a source for potable water in Greater Cairo using environmental isotopes", Isotope and Rad. Res. Res., 20, 2, 91-101, (1988).
31. M.S. Hamza, **A.I.M. Aly** and A. El-Bakri, "Recharge sources for El-Fayoum spring waters", Isotopenpraxis, 24, 3, 107-110, (1988).

32. M.S. Hamza, **A.I.M. Aly**, F.M. Swailem, A. Nada and M.A. Awad, "Estimation of seepage from Ismailia Canal using Iodine-131", *Isotopenpraxis*, 24, 3, , 110-114, (1988).
33. G.M. Sabek, **A.I.M. Aly**, M.M. Abdel-Aal, R.M.K. El-Shinawy, M. El-Ghamry, G.M. Hassib, F.H. Hammad, "Use of **INTERTRAN** code for risk assessment of radioactive materials being transported through the Suez canal", Proceedings of an International Conference on Radiation Protection in Nuclear Energy, organized by the International Atomic Energy Agency and held in Sydney, Australia, 18-22 April 1988, Pp. 323-331, (1988).
34. **A.I.M. Aly**, "A preliminary study for the suitability of Suez Canal as a site for mobile nuclear activity, External Report", Nuclear Regulatory and Safety Centre, Cairo, Egypt, (1988).
35. **A.I.M. Aly**, A. Nada, M. Awad, M.S. Hamza and A.B. Salman, "Isotope hydrological investigation on Qattara depression, Egypt", *Isotopenpraxis*, 25, 1, 22-24, (1989).
36. M.S. Hamza, **A.I.M. Aly**, F.M. Swailem and A. Nada, "Application of artificial tracers for groundwater flow", *Arab Journal of Nuclear Sciences and Applications*, 22, 1, 47-60, (1989).
37. A. Nada, **A.I.M. Aly**, M. Awad, M. El-Behery and M.S. Hamza, "Environmental isotopes and hydrochemical study of groundwater in the north eastern portions of the Delta of Wadi El-Arish, Sinai, Egypt", *Isotope and Rad. Res.*, 21, 41-52, (1989).
38. **A.I.M. Aly**, H.J. Simpson, M.S. Hamza, J.W.C. White, A. Nada and M. Awad, "Use of environmental isotopes and quantification of the water budget of the Nile Delta, Egypt", *Isotope and Rad. Res.*, 21, 31-40, (1989).
39. M.A. Awad, N. Belacy, **A.I.M. Aly**, F. Abou El-Nour, "Deuterium, oxygen-18 and salt content of drinking water sources in Cairo", *Isotopenpraxis*, 26, 12, 566-569 (1990).
40. **A.I.M. Aly**, M.M. Abel-Aal, M.G. Sabek and M.A. Ahmed, "Atmospheric dispersion parameters of the three main towns of the Suez Canal area (Port Said, Ismailia and Suez)", *Proc. Regional Symposium on Environmental Studies, Alexandria, Egypt, May 1990*, pp. 602-621, (1990).
41. **A.I.M. Aly**, Q.M.R. Khamis, "Modeling of environmental air pollution of some industrial areas in Jordan", *Proc. Fourth Conference of Chemical*

Engineering, 27-29 December, 1992, Cairo, Egypt, Transactions of the Egyptian Society of Chemical Engineers TESCE, Vol. 18, No. 2, part J., 205-221, (1992).

42. **A.I.M. Aly**, K. Froelich, A. Nada, M. Awad, M. Hamza, W.M. Salem, "Study of environmental isotope distribution in the Aswan High Dam Lake (Egypt) for estimation of evaporation from the lake water and its recharge to adjacent groundwater", *Environmental Geochemistry and Health*, 15 (1), 37-49, (1993).
43. **A.I.M. Aly**, K. Froehlich, M.A. Awad, Wafaa M. Moustafa and A. Nada, "A model for hydrologic interpretation of tritium content of groundwater in Egypt, *Mu'tah Journal for Research and Studies*", National and Applied Science Series, Vol. 9, No. 2, (1994).
44. M.A. Awad, A.A. Nada, **A.I.M. Aly** and M.S. Farid, "Tritium content of groundwater aquifer in western Nile Delta", *Isotopenpraxis*, Vol. 28, 167-173, (1993).
45. A.A. Nada, M.A. Awad, W.M. Salem and **A.I.M. Aly**, "Tritium content and salinity of some groundwater in Greater Cairo water supply stations", *Isotopenpraxis, Isotopes in Environmental and Health Studies* Vol. 29, 283-286 (1993).
46. **A.I.M. Aly**, M.M. Abdel-Aal, M.A. Ahmed, and M.G. Sabek, "Radiation doses resulting from a proposed coal-fired power plant in the Suez canal area", *International Journal of Energy*, 19, No. 1, 55-61, (1994).
47. M.A. Awad, F.A. Hammad, **A.I.M. Aly** and M.A. Sadek, "Use of environmental isotopes and geochemistry as indicators for the origin of groundwater resources in El-Dabaa area, northwestern coastal zone of Egypt", *Environmental Geochemistry and Health*, 16 (No. 1), 31-38, (1994).
48. **A.I.M. Aly**, M.A. Awad, W.M. Salem, M.S. Farid and M.S. Hamza, "Assessment of chemical pollution and water budget analysis using deuterium isotope in Lake Manzala, Egypt", *Proceeding of the Second Jordanian Chemical Engineering Conference*, Irbid, Jordan, 2-4.9.1996, Vol.1, 92-108.
49. M.M. Abdel-Aal, **A.I.M. Aly** and S. Tawfik, "Atmospheric dilution factors for radioactive releases from Inshas research reactor, Egypt", *Arab Journal of Nuclear Sciences and Applications* 27-1, 163-177 (1994).

50. M.M. Abdel-Aal, **A.I.M. Aly** and F.S. Tawfik, "Radiation dose assessment from a hypothetical reactor accident at Inchas site", Arab Journal of Nuclear Sciences and Applications 27-1, 179-188 (1994).
51. M.S. Hamza, M.A. Awad, **A.I.M. Aly** and W.M. Salem, "Hydrochemical and isotopic evaluation of groundwater quality in El-Marg treatment plant as a source of potable water, Cairo, Egypt", Third Arab Conference on the Peaceful Uses of Atomic Energy, Damascus 9-13 December 1996, 2C2.2 AEA.
52. Mokhtar S. Hamza, **A.I.M. Aly**, Mostafa A. Awad, Mohamed S. Farid, Hatem Abd El-Rahman, Mohamed T. El-Deftar, "Development of water resources in Wadi-Feiran and El-Qaa plain, South Sinai, Egypt", IAEA Research Contract Final Report, Contract No. 8464/RB, January, 1997.
53. **A.I.M. Aly**, A.S. Al-Shuha and R. Gedeon, "Environmental isotope modelling of lakes. A case study, International Seminar on the Use of Isotope Techniques in Marine Environmental Studies", Athens, Greece, November 11-22, 1996, IAEA-SR-194/52, Reproduced by the IAEA, Vienna, Austria, (1998).
54. M.S. Hamza, **A.I.M. Aly**, M.A. Awad, M.S. Farid, H. Abd El-Rahman, M.T. El-Deftar, Fourth Arab Conference on the Peaceful Uses of Atomic Energy, Tunisia, 14-18 November, 1998.
55. **A.I.M. Aly**, M.S. Hamza, S.A. El-Mongy and M.A. Hamed, "Uranium in Phosphate Fertilizers and Radioactivity of Some Soil Samples from Nile Delta, Egypt", Fourth Arab Conference on the Peaceful Uses of Atomic Energy, Tunisia, 14-18 November, pp. 275-288, 1998.
56. M.S. Hamza, **A.I.M. Aly**, M.A. Awad, "Chemical and Isotope Evaluation of Groundwater Resources in the Quaternary Aquifer in El-Qaa Plain, South Sinai – Egypt", Fourth Arab Conference on the Peaceful Uses of Atomic Energy, Tunisia, 14-18 November, 1998.
57. S.A. El-Mongy, M.A. Awad and **A.I.M. Aly**, "Environmental Isotopes and Natural Radioactivity Assessment of Toshka Area, South Nile Valley, Egypt", Arab Journal for Nuclear Sciences and Applications, (1998).
58. **A.I.M. Aly**, K. A. Halhouli and B.M. Abu-Ashur, "Flue Gas Desulphurization Processes", International Conference on Hazardous Waste (HAWA, 12-16 December 1998, Cairo, Egypt).

59. K. A. Halhouli, **A.I.M. Aly** and B.M. Abu-Ashur, "Flue Gas Desulphurization Using Methanol As A Solvent And Bromine Or iodine As An Oxidant", *Chemosphere*, 38 (No. 13), 3181-3192, (1999).
60. A. Ramadan and **A.I.M. Aly**, "Accumulation of Cs-137 and Co-60 by blue-green algae at different temperatures", International Conference on Hazardous Waste (HAWA, 12-16 December 1998, Cairo, Egypt).
61. A.A. Ramadan and **A.I.M. Aly**, "Natural and man-made radioactivity of some evergreen and deciduous plants around Inshas Nuclear Reactor, Egypt", Workshop in Nuclear and Related Techniques in Agriculture, II International Symposium in Nuclear and related Analytical Techniques in Agriculture, Industry and Environment 'NURT 99", Havana, Cuba, October 26-29, (1999).
62. A. Ramadan and **A.I.M. Aly**, "Foliar absorption and translocation of ¹³⁷Cs in Egyptian Olive plants", Workshop in Nuclear and Related Techniques in Environment, II International Symposium in Nuclear and Related Analytical Techniques in Agriculture, Industry and Environment 'NURT 99", Havana, Cuba, October 26-29, (1999).
63. A.A. Ramadan M. H. Helal and **A.I.M. Aly**, "Radionuclides and heavy metals uptake by *Lolium Italicum* plant as affected by salt water irrigation", *Arab Journal of Nuclear Sciences and Applications*, 34(2), 229-234, (2000).
64. **A.I.M. Aly**, M.S. Hamza, M.A. Awad, S.G. Abdel-Samie, M.A. Sadek, W.M. Salem, M.A. Ahmed, N. El-Arabi, "Study of the Quality and Recharge Sources of Groundwater in the Northern Part of Upper Egypt Using Hydrochemical and Environmental Isotope Techniques". Fifth Arab Conference on the Peaceful Uses of Atomic Energy, Beirut: 13-17/11/2000.
65. M.S. Hamza, **A.I.M. Aly**, M.A. Awad, A.A. Nada, S.G. Abdel-Samie, M.A. Sadek, W.M. Salem, F.A. Attia, N.E. El-Arabi and T.M. Hassan, "Estimation of Recharge Rate from the Nile and Paleowater to the Desert Fringes Aquifers at West Esna, Upper Egypt using Environmental Isotopes", Fifth Arab Conference on the Peaceful Uses of Atomic Energy, Beirut: 13-17/11/2000.
66. M.A. Sadek, W.M. Salem and **A.I.M. Aly**, "Simulation of Isotopic Enrichment for Evaporative Saline and Fresh Surface Water, using Pan Techniques", *Ain Shams Univesrsity Science Bulletin*, Vol. 38, 115-126, (2000).

67. Abu Bakr Ramadan, M. Reda Ezz El-Din and **A.I.M. Aly**, "Surface ozone concentrations and solar radiation in polluted and remote areas in Egypt", Arab Journal of Nuclear Sciences and Applications, 34(2), 33-40, (2001).
68. S.G. Abd El Samie, M.A. Sadek and **A.I.M. Aly**, "The effect of Isotopic Exchange and Ultrafiltration on the Formation Water in Ras Budran Oil field", (Gulf of Suez, Egypt, accepted for Publication in, Faculty of Science Scientific Bulletin, Ain Shams University, Cairo, (2001).
69. M.M.E. Bade, **A.I.M. Aly**, M.E.Hawahy, N.M.Sirag "Design for lighting criterion in research buildings", Institute of Environmental Studies and Research, Ain Shams University, Cairo, (2004).
70. **A.I.M. Aly**, M.A. Sadek, K.A. Dahab and W.M. Salem, "Implication of structural elements and lithofacies on groundwater flow and recharge at Tushka-Abu Simbel area", Conference, The Egyptian Society of Nuclear Sciences and Application (ESNSA), February, (2004).
71. **Aly, A.I.M.**, Eweida, E.A., Hamed, M.A. and Abdel Samie, S.G., "Environmental isotopes and hydrochemistry approach to evaluate the source of recharge and pollution load in Manzala and Bardawil lakes, Egypt", Proceeding of the International Conference on Isotopes in Environmental Studies", Mont-Carlo, Monaco (25-29 October, 2004).
72. **Aly, A.I.M.**, Eweida, E.A., Hamed, M.A. and Khater, A. E. M., "Reconnaissance investigation of ⁴⁰K and some trace elements in the aquatic ecosystem of Manzala lake and their distribution coefficients (K_d) for bottom sediments", Proceeding of the 6th International Conference on Geochemistry, Alex. Univ., Egypt (15-16 Sept., 2004).
73. **Aly, A.I.M.**, Hamza. M.S., Elmongy, S.A. and Hamed. M.A., "Uranium in phosphate fertilizers and the radioactivity of some soil samples from the Nile Delta, Egypt", Proceeding of Arabic Conf. on Safe Uses of Atomic Energy, Tunisia (1999).
74. Ewida, A.E., Hamza, M.S., **Aly, A.I.M.** and Hamed, M.A., "Determination of uranium in some water, soil and plants samples at different locations in the Nile Delta, Egypt", Proceeding of the 4th International Conf. on Geochemistry, Alex. Univ., Egypt (17-19 Sept., 1999).
75. Ramadan, A.B. and **Aly, A.I.M.**, "Evaluation of radiological background and surface ozone concentrations over Qarun Lake El Faiyum, Egypt", Isotope and Radiation Research, (2006)

76. Ahmed, M.A., **Aly, A.I.M.**, Hussien, R.A. "Assessment of Anthropogenic Nitrate pollution in groundwater in Northeast Cairo Using Nitrogen-15 Technique", Arab Journal of Nuclear Sciences and Applications, 40(3), 56-70 (2007).
77. **Aly, A.I.M.**, Mousa, M.A., Bayoumi, W.A., Abu Ela, A.M. and El Daly, T.A., "Environmental Isotopes and Hydrochemical Study of Groundwater in El-Dabaa Area North Western Coast of Egypt", Isotope & Rad. Res., 38, 4, 851-867(2007).
78. Ahmed, M.A., **Aly, A.I.M.**, Bastaweesy, A.M., and Gomaa,H.E., "Modified Low-Priced Ammonia Diffusion Method for the Analysis of Nitrogen Isotopic Composition of Ammonium and Nitrate in Different Water Matrices" Egypt., J. Rad. Sci. Applic., Vol. 21, No. 1, pp. 1-340 (2008).
79. **Aly, A.I.M.**, Ahmed, M.A., Bastaweesy, A.M., and Gomaa, H.E. "Isolation of Ammonium from Freshwaters for Nitrogen Isotope Analysis Using AmberliteIR120 and Dowex50WX8 Ion Exchange Resins: A Comparative Study", ISOTOPE & RAD. RES., 38, 4, 953-963 (2007).
80. **Aly, A.I.M.** and Ali, A.A., "Using Trace elements concentrations as tracers for pollution transport in Egyptian sand soil" Journal of Biological chemistry and environmental sciences, Vol. 2 (1) (2007).
81. Aly, A.I.M., "Nuclear legislations and Regulations", Scientific Symposia on Peaceful Application of Arab Atomic Energy Authority, Arab league, Cairo 23-24 Jan., 2008.
82. Aly, A.I.M., The Egyptian Experience on Nuclear and radiation Legislations, Int.J. Nuclear law, vol.2, No.3, 192-206 (2009).
83. Aly, A.I.M., Ahmed,M.A., Gomaa,H.E., Abdel Monem, N. and Hanafy,M. Rapid and Accurate Technique For Measuriung N-15 Of Nitrate, Method Development, Calibration And Validation, Isotope & Rad. Res., 42(1), 39-56 (2010).
84. M.A. Ahmed , A.I.M. Aly , N. Abdel Monem, M. Hanafy , H.E. Gomaa A modified procedure for measuring oxygen-18 content of nitrate,

Journal of Hydrology 472–473 (2012) 193–204.

85. A.I.M. Aly and R.A. Hussien, Environmental Impacts of Nuclear, Fossil and Renewable Energy Sources: A Review, International Journal Of Environment, 3(2): 73-93, (2014).