

## CURRICULUM VITAE

**Name** Ahmed Amin Zatout

**Address**

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**Office** Chemical Engineering Department  
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Alexandria University  
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**Date of Birth** December 12, 1944

**Citizenship** Egyptian

**Marital Status** Married; with two children

**Languages** Arabic and English (spoken and written)

### DEGREES

- **Ph.D.** Alexandria University, 1972
- **M.Sc.** Alexandria University, 1969
- **B.Sc.** Alexandria University, 1966, 1<sup>st</sup> degree Honours

### ACADEMIC AND INDUSTRIAL EMPLOYMENT

<b>From</b>	<b>Year</b>	<b>Employer</b>	<b>Position</b>
1999	Present	Alexandria University	Head, Chem.Eng.Dept.
1983	Present	Alexandria University	Professor
1977	1982	Alexandria University	Associate Professor
1972	1977	Alexandria University	Assistant Professor
1966	1972	Alexandria University	Demonstrator

### VISITING APPOINTMENTS

	<b>Year</b>	<b>Institution</b>
Visiting Professor	Oct.1974 – Jan. 1975	El Fath University , Libya
Visiting Professor	August – October 1978	El Khatom University, Sudan
Visiting Professor	March, 1985,May, 1988	Lebanese University, Lebanon

Visiting Professor	19089 - 1996	Qatar Unversity, Qatar
Cross Appointment	September, 1973 June, 1988	KIMA High Inst.of Tech. Aswan, Egypt
Cross Appointment	September, 1980 June, 1988	Faculty of Education , Alexandria, Egypt
Cross Appointment	September, 1978 June, 1988	Air Defence College, Alexandria, Egypt
Cross Appointment	1998 – 2003	Alexandria High Technology Institute

## **HONORS AND AWARDS**

- Alexandria University Research Award, 1976.
- Chemical Engineering Department, Alexandria University, Top student award 1963 – 1966.
- Recipient of the Egyptian Government Award for Distinguished Undergraduate Students, 1961- 1966,.

## **PROFESSIONAL ACTIVITIES**

1. Invited reviewer of technical papers for the Journal of Faculty of Engineering Alexandria University; the Journal of Faculty of Engineering, El Minya University, .....
2. Consultant to the Egyptian Petrochemicals Co., The General Paper Co., El-Nile Match Co., Alexandria Drugs Co., LUCIA Egypt Co., COMIBASSAL, and Abu-Kir Fertilizers Co.
3. Member of Promotion Committee.
4. Member of several M.Sc.& Ph.D. Examination Committees.
5. Participated in the preparation of the curriculum of KIMA High Institute of Technology, Egypt.

## **PROFESSIONAL MEMBERSHIPS**

- Member, Egyptian Society of Engineers
- Member, Egyptian Society of Chemical Engineers

## **COURSES TAUGHT**

	<b>LEVEL</b>
Petrochemicals and Fertilizers	Undergraduate, 4th year
Chem. Eng. Thermodynamics	Undergraduate, 2 <sup>nd</sup> & 3 <sup>rd</sup> year
Environmental Engineering	Undergraduate, 4th year
Chemical Industries	Undergraduate, 3rd year
Petroleum Engineering	Undergraduate, 3rd year
Electrochemical Industries	Undergraduate, 3rd year
Chemical Engineering Fundamentals	Undergraduate, 2nd year
Heat Transfer	Undergraduate, 2nd year
Instrumental Analysis	Undergraduate, 2nd year
Metallurgy	Undergraduate, 2nd year
Chemistry for Engineering Students	Undergraduate, 1 st year
Unit Operations	Undergraduate, 3 rd year

Inorganic Chemistry	Undergraduate, I st year
Analytical Chemistry	Undergraduate, I st year
Petrochemical Technology	Graduate
Pollution Control Technology	Graduate
Industrial Pollution	Graduate
Heavy Chemicals	Graduate
Gas Purification	Graduate
Waste Water Treatment	Graduate
Natural Gas Processing	Graduate

### **RESEARCH AREAS**

- Pollution Control From Petroleum, Chemical and Petrochemical Industries.

The objective of work is (i) Define the different sources of pollution, (ii) Study the effect of different methods such as sedimentation, biological treatment, electrochemical methods, and activated carbon treatment on control of water pollution, (iii) Study the possible recovery of valuable products and develop the most suitable processes.

- Regeneration of Used Lubricating Oils.

The objective is to study the different variable affecting possible regeneration of exhausted lubricating oils and remodify their properties to meet specification.

- Liquid-Liquid Extraction of Phosphoric Acid Aqueous Solutions .

The objective of this work is to study the possible use of liquid-liquid extraction technique for the extraction of phosphoric acid from aqueous solution and investigate the different variable on the purity of acid produced.

- Slow Release Fertilizers.

The objective is to investigate the fertilizers methods used to control the solubility of nitrogen fertilizers in water.

- Evaluation of Phosphate Ores.

These methods help in producing low release Processing into Fertilizers

## **RESEARCH GRANTS AND PUBLICATIONS**

### RESEARCH GRANTS RECORD

1. 1993-1995 (Rakta Paper Co) Process development for recovery and use of cellulosic fibers from white liquor and water reuse in Rakta Co.
2. 1987 (Egyptian Petrochemicals Co.) Purification of Egyptian common salt to meet specifications of chlor alkali manufacture by diaphragm cell.
3. 1986 (Egyptian Petrochemicals Co.) Control of Pollution from disposal of sludges from petroleum storage tanks.
4. 1985 (General Paper Co.) Control of Pollution from liquid effluents of pulp and paper manufacture.
5. 1985 (Alexandria Drugs Co.) Control of Pollution from liquid effluents of drugs manufacture.
6. 1973-76 (National Research Centre) Investigation of Egyptian clays for production of alum, activated silica and sodium aluminate for water treatment plants.
7. 1992 – 1995 Production of Magnesium Oxide from Bittern Solution of Alexandria Saline .
8. 1994 – 1997 Chromium Recovery from Industrial Waste Water of El-Nasr Leather Tanning Company for Reuse in Industry.

### TECHNICAL REPORTS

1. .Storage and transportation of urea fertilizer in bulk state, submitted to Abu-Kir Fertilizers Co. (1997).
2. Evaluating a Project for erection of N-P-K fertilizers, plant capacity 350 tons / day. Submitted to Alexandria University (1997).
3. Evaluation of technical offers for Abu-Kir- 4 urea plant. Submitted to Abu-kir Fertilizers Co. (2002).

## PUBLICATIONS

### I Refereed Journal Publications

1. Malash, G., Nassief, A., Zatout, A.A. and Hussein, M., " Activated Carbon From Waste Egyptian Rice Hulls", Fourth Conference on Role of Engineering Towards A Better Environment, Alexandria, Egypt, (2004).
1. Sedahmed, G. H. , Zatout , A. A. and Zwwail, T. M. , "Free Convection Mass-Transfer Behavior of A Fixed Bed of Rashing Rings", *Ind. Eng. Che. Res.*, (37)(1998), 3481-84.
2. Fouad, E. A. , Mahdy, M. A. , Zatout, A. A. and Bakr, M. Y. , "Material and Energy Balances of High Strength Phosphoric Acid Production From El-Sebaiya West Phosphate Ore", *TESCE*, (20)(1)(1994), 54-67.
3. Fouad, E.A. , Mahdy, M.A. , Zatout,A.A. and Bakr, M.Y. , " Single Stage Hemihydrate Process for High Strength Phosphoric Acid Preparation", *Egypt. J. Anal. Chem.*, (3)(1994), 211-215.
4. Fouad, E.A. , Mahdy, M.A. , Zatout, A.A. and Bakr, M.Y. , "Improvement of the Phosphogypsum Separation During a Single Stage Hemihydrate Phosphoric Acid Process" , *Egypt. J. Anal. Chem.* ,(3)(1994), 223-227.
5. Ibrahim, Y., Asfour, A., Abdel-Magid, M. and Zatout, A., "Liquid-Liquid Extraction of Phosphoric Acid from Aqueous Solution In Pulsed Columns", *Separation Science and Technology*, 29 (3) (1994), 415-27.
6. El-kayar, A. , Hussien, M. , Zatout, A., Hosny , A. and Amer, A., "Removal of Oil From Stable Oil-Water Emulsion By Induced Flotation Technique", *Separation Technology* (3)(1993), 25-31.
7. Hosny, A.Y. and Zatout, A.A., " A statistical Approach to Evaluate Factors Affecting Magnesium Ammonium Sulphate Production", *Alexandria Engineering Journal*, (31)(1)(1992).
8. El-Sherbiny, M.F., Zatout, A.A., Hussein, M. and Sedahmed, G.H., " Mass Transfer at the Gas Evolving Inner Electrode of A Concentric Cylindrical Reactor", *Alexandria Engineering Journal*, (21)(1991), 537-542.
9. Zaki, M.M. , El-Taweel, Y.A., Zatout, A.A., El-Abd, M.Z. and Sedahmed, G.H., " Mass Transfer at Oscillating Grids", *J. Electrochem. Soc.*, (138)(2)(1991), 430-434.
10. Zatout, A.A., Fadaly, Aly, I.H.M. and Abdel-salam, A.F. , " Fertilizer from Natural Egyptian Sources", *Bull. Of the Fac. of Eng. & Technol., Minia University*, (9)(1)(1990).
11. Hussien, M., Zatout, A. A. and Zahran, R., "Cleaning of Egyptian Polluted Sand of Alexandria Western Coast-Cold Extraction of Light Oil from Polluted Sand" *CEW XXIII*, No. 10, Oct. (1988), 57-8.
12. Zatout, A.A., Sedahmed, G.H., El-Abd, M.Z. and Negm, A.H., " Diffusion of Electrolytes in Solutions Containing Ionic Macromolecules", *Acta Polymerica*, (39)(1998), 382-484.

13. Zatout, A. and Hussien, M., Extraction of Phosphoric Acid by N-Butyl Alcohol in Packed Column”, Phosphorous and Potassium,(155)(may-June)(1988), 35.
14. Katkout, F.A., Zatout, A.A., Farag, H.A. and Sedahmed, G.H., “ Effect of Gas Sparging on the Rate Of Mass Transfer at Fixed Beds of Horizontally Stacked Screens”, The Canadian J. of Chem. Eng., (86)(6)(1988).
15. El-Abd, M.Z., Zatout, A.A., Sedahmed, G.H. and Negm, A.H.,” Effect of Polyelectrolytes on the Diffusion of Low Molecular Weight Ionic Solutes”, Polymer Journal,(20)(4)(1988), 345-349.
16. Sedahmed, G.H., El-Abd, M.Z., Zatout, A.A. and Negm, A.H.,” Diffusion of Electrolytes in Polymer Solutions”, Journal of Applied Polymer Science,(34)(1987), 47-53.
17. Sedahmed, G.H., Faraf, H.A., Zatout, A.A. and Katkout, F.A.,” Mass Transfer Characteristics of Gas-Sparged Fixed Bed Electrode Composed of Stacks of Vertical Screens”, Journal of Applied Electrochemistry,(16)(1986), 374-378.
18. Hussein,M. and Zatout, A.A.,” Treatment of Spent Pickle liquors for Production of Chemicals”, Chemical Era,(XIX)(7)(1983), 153-156.
19. Bakr,M.Y., Zatout,A.A. and Mohamed, M.A.,” Orthoclase, Limestone and Calcium Fluoride for Production of Aluminium and Potassium Salts”, Indian Ceramics,(24)(12)(1982), 231-233.
20. El-Kayar,A., Zatout,A.A. , Hussein,M. and Zahran, R.,” Cleaning of Polluted Sand of Alexandria Western Coast,Egypt- Cold Water Extraction of Heavy Oil from Polluted Sand”, Fertilizer Technology,(19)(1,2)(1982), 70-72.
21. Hussein,M., Zatout,A.A. and Ali,M.,”Replacement of Ammonia by Triethylamine in Solvay Process”, Chemicals & Petrochemicals Journal,(XIII)(1)(1982), 7-13.
22. Hussein,M., Zatout, A.A. and Fathy,M.,”Recovery of Ferrous Sulfate Heptahydrate From Spent Liquor by Addition of Acetone”, Afinidad(39)(377)(1982), 35-39.
23. Bakr, M.Y., Zatout, A.A. and Ghoniem, Z., “ Calcination of By-Product Sodium Sulphate With Alumina or Clay”, Indian Ceramics(24)(6)(1981), 125-127.
24. Zatout, A.A. , Hussein,M. and Ali,M.,” Effect of Presence of Amines on Dissolution of Sodium Chloride in Solvay process”, Afinidad(38)(375)(1981), 402-404.
25. Zatout, A.A. and Hussein, M., “ Fluosilicic Acid Acidulation of Egyptian Abu-Tartur Rock Phosphate”, Fertilizer Technology (18)(1,2)(1981), 95-98.
26. Zatout, A.A., Hussein,M. , Zayed, M. and Fathy, M., “ Roasting of Ferrous sulphate heptahydrate With Dolomite”, Chemicals & Petrochemicals Journal,(XII)(2)(1981), 37-39.
27. Hussein,M. and Zatout, A.A., “ Complete and Partial Replacement of Ammonia by Octyl Amine in Solvay Process”, Chemicals & Petrochemicals Journal,(XII)(1)(1981), 35-40.
28. Sedahmed, G.H. , Mansour, I.A. , Zatout, A.A. and Abdel-Hay, N.A.,” The Role of Mass Transfer in Kinetics of Anodic Dissolution of Gas-Evolving Metallic Surfaces”, Journal of Applied Electrochemistry,(a0)(1980), 543-547.
29. Sedahmed, G.H. , Mansour, I.A., Zatout, A.A. and Abdel-Hay, N.A., “ The Rate of Diffusion-Controlled Electrochemical Corrosion at Gas Evolving Cylinders”, Surface Technology,(11)(1980), 61-66.

30. Hussein, M. and Zatout, A.A. ,” Recovery of Ferrous Sulphate Heptahydrate From Spent Liquor by Addition of Ethyl Alcohol”, *Chemicals & Petrochemicals Journal*,(XI)(11)(1980), 13-16.
31. Zatout, A.A. and Hussein, M. ,” Investigation of Egypt’s Abu Tartur Phosphate Deposits”, *Phosphorous and Potassium*,(109)(1980), 32-39.
32. Hussein, M., Zatout, A.A. and Hosny, A.Y., “ Urea Phosphate from Urea and Phosphoric Acid”, *Afinidad*,(37)(367)(1980), 223-224.
33. Hussein, M. , Zatout, A.A. and Hosny, A.Y. “ Extraction of Phosphoric Acid from Aqueous Solutions by N-Butyl Alcohol in Packed Columns”, *Fertilizer Technology*,(16)(3,4)(1979), 246-249.
34. Sedahmed, G.H., Farag, H.A., Zatout, A.A. and Katkout, F.,” Diffusion of Urea in Solutions Containing Clay Particles”, *Afinidad*,(36)(362)(1979), 410-412.
35. Sedahmed, G.H., Zatout, A.A., El-Abd, M.Z. and Mansour, I.A.,” Diffusion of Electrolytes in Colloidal Solutions”, *Afinidad*,(36)(362)(1979), 365-366.
36. Bakr, M.Y., Zatout, A.A. and Mohamed, M.A.,” Orthoclase, Gypsum and Limestone for Production of Aluminium and Potassium Salts”, *Interceram.*,(28)(1)(1979), 34-34.
37. Zatout, A.A., Farag, H.A., Sedahmed, G.H. and Katkout, F.,” Diffusivity of Ammonium Nitrate in Clay Suspensions”, *Fertilizer Technology*,(16)(1)(1979), 54-56.
38. Bakr, M.Y., Zatout, A.A. and Asfour, A.A., “ Recovery of Bromine by Extraction Process”, *Fertilizer Technology*,(15)(2)(1978), 112-116.
39. Bakr, M.Y. , Zatout, A.A. and El-Bassiouni, M.A.,” Separation of Potassium Salts from Salt Mixtures By Solvents, Part 3- Separation of Potassium Chloride from Magnesium Chloride and Calcium Chloride”, *CEER*,(10)(4)(1978), 37-41.
40. Bakr, M.Y. , Zatout, A.A. and El-Bassiouni, M.A.,” Separation of Potassium Salts from salt Mixtures By Solvents, Part 2- Separation of Potassium Chloride from Sodium Chloride”, *CEER*,(10)(4)(1978), 33-36.
41. Bakr, M.Y., Zatout, A.A. and El-Bassiouni, M.A.,” Separation of Potassium salts from salt Mixtures By Solvents, Part 1- Literature and Short Discussion”, *CEER*,(9)(11)(1977), 45-48.
42. Bakr, M.Y. , Zatout, A.A. and El-Sayed F., “ Potassium Salts from Egyptian Bittern, Part 3- Separation of Mixed Salt Copnstituents”, *CEER*,(9)(2,3)(1977), 39-42.
43. Bakr, M.Y. , Zatout, A.A. and El-Sayed, F. “ Potassium Salts from Egyptian Bittern, Part 2- Mixed Salt from Bittern”, *CEER*,(9)(2,3)(1977), 37-39.
44. Bakr, M.Y. , Zatout, A.A. and El-Sayed, F. ,” Potassium Salts from Egyptian Bittern, Part 1-Review on Crystallization of Potash from Bittern”, *CEER*,(9)(1)(1977), 33-35.
45. Bakr, M.Y., Zatout, A.A. and Mohamed, M.A.,” Potassium and Aluminium Salts from Feldspar, Part 1- Literature”, *Indian Ceramics*,(19)(3)(1976), 485-489,
46. Bakr, M.Y. , Zatout, A.A. and Hamoda, A.D., “ Artificial Zeolites for Ion Exchange, Part 2- Artificial

- Zeolites from Egyptian Kaolines”, *Indian Ceramics*,(19)(2)(1976), 463-468.
47. Bakr, M.Y. , Zatout, A.A. and Hamoda, A.D., “ Artificial Zeolites for Ion Exchange, Part 1- Literature and Short Discussion”, (19)(2)(1976), 457-463.
48. Bakr, M.Y., Zatout, A.A. and Zayed, M.A.,” Potassium Sulphate from Egyptian Molasses Waste Liquors”, *Phosphorous and Potassium*,(81)(1976), 40-42.
49. Bakr, M.Y., Zatout, A.A. and Zayed, M.A.,” Potassium Fertilizers from Molasses Waste Liquors”, *Phosphorous and Potassium*,(78)(1975), 37-38.
50. El-Abd, M.Z. , Sedahmed, G.H., Zatout, A.A. and Negm, A.H.,” Diffusivity of Chromium Salts and Alums in Aqueous Solutions”, *J.Appl.Chem.Biotechnol.*,(25)(8)(1975), 597-601.
51. Bakr, M.Y. , Zatout, A.A. and Mohamed, M.A.,” Extraction of Potassium and Aluminium Salts from Egyptian Feldspar”, *Indian Ceramics*,(17)(12)(1974), 417-420.
52. Zatout, A.A. , El-Abd, M.Z. , Sedahmed, G.H. and Khalil, R.S.,” Diffusion of Alums in Aqueous Solutions”, *Annali di Chimica*,(64)(9,10)(1974), 587-591.
53. Bakr, M.Y. and Zatout, A.A.,” recovery of Potassium Using Magnesium Dipicrylamine”, *CEER*,(11)(1,2)(1979), 31-35.
54. Bakr, M.Y. and Zatout, A.A., “Minerals from the Sea- Recovery of Potassium salts from Egyptian Bitterns, Part VII- Dipicrylamine Method- Literature and Short Discussion”, *Chemical Age of India*, (28)(1)(1977), 29-32.
55. Bakr, M.Y. and zatout, A.A. ,” Minerals from the Sea- Recovery of Potassium salts from Egyptian Bitterns, Part VI- Perchlorate Method”, *Chemical age of India*,(26)(3)(1975), 204-206.
56. Bakr, M.Y. and zatout, A.A. ,” Minerals from the Sea- Recovery of Potassium salts from Egyptian Bitterns, Part V- Factors Affecting Potassium Recovery As Perchlorate”, *Chemical Age of India*, (26)(3)(1975), 200-203.
57. Bakr, M.Y. and Zatout, A.A., “ Minerals from the Sea- Recovery of Potassium Salts from Egyptian Bitterns, Part IV- Literature and Short Discussion”, *Chemical Age of India*,(26)(3)(1975), 197-199.
58. Fouad, M.G. and Zatout, A.A. ,” Mass Transfer Rates At Rough Surfaces”, *Electrochimica Acta*, (14)(9)(1969), 909-919.
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#### Conference Publications

1. El-Sherbiny, M. F. , Zatout, A.A. and Hussein, M., “ Recovery of Ferrous Sulfate Heptahydrate from Waste Pickle Liquor by Addition of Iso-Propyl Alcohol”, *Second Conference of Egyptian Rural Development*,(1999).

2. El-Kayar, A., Hussein, M., Zatout, A. and Amer, A., "Removal of Oil from Stable Water-Oil EMulsion by Induced Air Flotation Technique, II. Using Multi-Hole Air Distributor", 2<sup>o</sup>d International Conference, Role of Engineering Towards a Better Environment, Alexandria University (1998)
3. Amer, A., El-Kayar, A., Hussein M. and Zatout, "Factors Influencing Induced Air Flotation Technique Used for Removal of Oil from Stable Oil-Water Emulsion", The 14th Petroleum Conference , Cairo, Egypt (1998)
4. El-Kayar, A., Hussein, M., Zatout, A. and Amer, A., "The Effect of Single Hole Distribution on the Removal of Oil from Stable Oil Water Emulsion by Induced Air Flotation Technique", The 11<sup>h</sup> International Seminar, New Trends in Engine and Industrial Lubricants, Fuels, Chemicals and Additives, Cairo, Egypt (1998)
5. Saleh, I., El-Adawy, M., Abdel-Magid, M. and Zatout, A., "Treatment of Liquid Industrial Waste From A Kraft Pulp and Paper Mill in Egypt", Cairo Fifth International Conference on Energy & Environment, Egypt (1996).
6. El-kayar, A., Hussien, M., Zatout, A. and Amer, A., "Removal of Oil From Stable Oil Water Emulsion By Induced Air Flotation Technique", 13th Petroleum Congress, Cairo, Egypt (1996).
7. El-Ibiari, N., Zatout, A.A., El-Diwani, G. and Abdel Latif, M., "Effect of Additives On the Sedimentation Rate of Magnesium Hydroxide Precipitated from Synthetic Magnesium Chloride", Scientific Journal of the Faculty of Science, Menoufia University, (IX)(1995).
8. Fouad, E.A. , Mahdy, M.A. , Zatout, A.A. and Bakr, M.Y., "Uranium recovery from the Concentrated Phosphoric Acid Prepared by the Hemi-Hydrate Process", Second Arab Conference On the Peaceful Uses of Atomic Energy, Cairo,(1994).
9. Baker M.Y. and Hussien, M. and Zatout, A., "Air Pollution, the Control of Sulphur Dioxide Pollution", First Scientific Conference on Environmental Pollution, Alexandria University (1973).
10. Bakr, M.Y. and Hussien, M. and Zatout, A., "Pollution Control in the Fertilizer Industry", First Scientific Conference on Environmental Pollution, Alexandria University (1973).
11. Bakr, M.Y. , Hussein, M. , Zatout, A.A. and Abdel-Monem. N. , "Control of Water Pollution", First Scientific Conference on Environmental Pollution, Alexandria University(1973).
12. Bakr, M.Y. , Hussein, M., Zatout, A.A. and Abdel-Monem, M. , " Air and Water Pollution in Petrochemical Industries", First Scientific Conference on Environmental Pollution, Alexandria University(1973).
13. Bakr, M.Y. , Hussein, M. and Zatout, A.A. , " Air and Water Pollution in Pulp Industry", First Scientific Conference on Environmental Pollution, Alexandria University(1973).
14. Bakr, M.Y. and Zatout, A.A., " Minersls from the Sea- Potassium Salts from Egyptian Bitterns", Sixth Science Meeting, The Lebanese Association for Advancement of Science, Liban,(1974).
15. Bakr, M.Y. and Zatout, A.A., " Extraction of Potassium from Egyptian Bitterns As Potassium Perchlorate", The 3<sup>rd</sup> Arab Chemical Congress, Cairo, Egypt,(1972).
16. Bakr, M.Y. and Zatout, A.A., " Potash and Potassium fertilizers", Arab Conference On Petrochemicals, Kuwait

### III Publications in Progress

1. Hussien, M. and Zatout, A., "Beneficiation of Egyptian Abu-Tartur Rock Phosphate", Admitted.

2. Zatout, A. and Hussien, M., "Complete Replacement of Ammonia by Dodecyl Amine in Solvay Process", Admitted.
3. Hussien, M. and Zatout, A., "Complete and Partial Replacement of Ammonia by N-Butyl Amine in Solvay Process", Admitted.
4. Zatout, A. and Hussien, M., "Modifications in Solvay Process", Admitted.
5. Hussien, M., "Recovery of Zinc from Viscose Rayon Waste Water, Part I - Review of Methods of Removal and Recovery of Zinc from Viscose Rayon Effluent, Part II - Zinc Precipitation and Recovery from Viscose Rayon Effluent", Admitted.
6. Hussien, M., "Solubilization of Egyptian Abu-Tartur Rock Phosphate by Ammonium Bisulphate", Admitted.
7. Zatout, A. and Hussien, M., "Decomposition of Egyptian Abu-Tartur Rock Phosphate by Hydrochloric Acid", Admitted.
8. Zatout, A. and Hussien, M. and Bishara, M., "Factors Affecting Dissolution of Egyptian Abu-Tartur Rock Phosphate in Sulphuric Acid", Admitted.
9. Hussien, M. and Zatout, A., "Roasting of Ferrous Sulphate Heptahydrate with Sodium Carbonate or Magnesium Carbonate", Admitted.
10. Zatout, A. and Hussien, M., "Regeneration of Waste Pickling Liquors", Admitted.
11. Hussien, M. and Zatout, A., "Decomposition of Egyptian Abu-Tartur Rock Phosphate by Nitric Acid, Admitted.
12. El-Kayar, A., Hussien, M., Zatout, A. and Zahran, R., "Cleaning of Egyptian Oil Polluted Sand of Alexandria Western Coast, Part II Water Extraction of Light Oil from Polluted Sand, Part III - Oil Removal Light Oil Polluted Sand by Washing with a Detergent Solution, Part IV - Oil Removal from Heavy Oil Polluted Sand by Washing with a Detergent Solution, Admitted.
13. Hussien, M., Zatout, A. and Naseif, A., "Activated Carbon from Egyptian Rice Hulls", Under preparation.
14. Hussien, M., Zatout, A. and Bishara, M., "Production of Phosphoric Acid by Hydrochloric Acid Acidulation of Egyptian Phosphate Rock", Under preparation.

#### IV Books

1. Chemistry for Engineering Students (Arabic) 1972, 1975, 1980,1983, 1987.
2. Chemistry for Engineering Students, Part 11, Solved Problems, 1983,1987.

## V. M.Sc. Theses Supervised

1. Study on the Production of Pigment Grade Iron Oxide from Waste Steel Pickling Liquor 2002
2. Study on Concentration of Abu-Tartur Rock Phosphate by Partial Acid 1998
3. Recovery of Nickel from Spent Steam Reforming Catalyst 1998
4. Concentration of Egyptian Phosphate Rock by Partial Acidulation 1992
5. Treatment of Wastes From Petroleum Refining 1989
6. Production of  $H_3PO_4$  and  $CaHPO_4$  by solvent extraction 1988
7. Control of Water Pollution from Petroleum Refineries 1987
8. Investigation of Sulphur Coated Urea as Slow Release Fertilizer 1987
9. Control of Pollution from Waste  $H_2SO_4$  of Petroleum Refining 1986
10. Extraction of Phenol from Waste Water of Petroleum Refining 1985
11. Upgrading of Wastes from Water Treatment Plants 1984
12. Control of Pollution from Urea Manufacture 1983
13. Control of Pollution from Viscose Rayon Manufacture 1983
14. Cleaning of Oil Polluted Beaches 1982
15. Control of Pollution from Metal Finishing Effluents 1980
16. Liquid-Liquid Extraction of Phosphoric Acid in Packed Column 1980
17. Mixed Fertilizers from Urea and Phosphoric Acid 1980
18. Dissolution of Egyptian Rock Phosphate in Mineral Acids 1979
19. Activated Carbon from Egyptian Rice Hulls 1979

## VI. Ph. D. Theses Supervised

1. Study on the Improvement of the Granulated Urea Fertilizer Properties by Using Additives 2002
2. Use of Flotation Technique for the Concentration of Egyptian Phosphate 1996
3. Treatment of Oil Spills with Sorbants 1996
4. Purification of wet Process Phosphoric Acid 1991
5. Electrochemical Treatment of Steel Pickling Liquors 1989
6. Liquid-Liquid Extraction of  $H_3PO_4$  in Pulsated Column 1988
7. Air Pollution Control from Phosphate Fertilizer Industry 1985
8. Effect of some Additives in Solvay Process 1980