# CURRICULUM VITAE

## PERSONAL DETAILS


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| **Name:** | Abdulrahman Abdullah Alwarthan |
| **Present Rank** : | Professor |
| **Date of Appointment**: | July 1976. |
| **Date of Birth:** | Nov. 10, 1951. |
| **Nationality**: | Saudi |
| **Marital Status**: | Married, 2 sons and 3 daughters. |
| **University Affiliation**: | Chemistry Department, College of Science, King Saud University, Riyadh, Saudi Arabia. |
| **Major Speciality**: | Analytical Chemistry. |
| **Minor Speciality**: | Instrumental analysis of Food, Pharmaceutical preparation, Soil and Trace element analysis. |
| **Work Address**: | Chemistry Department, Science College, King Saud University, P.O. Box 2455, Riyadh- 11451, Saudi Arabia. |
| **Telephone**: | Home: +96614683503 , Office: +96614676005 |


## RESEARCH AREA

**Currently these are in the following areas:**

- Chemiluminescence and fluorescence in trace analysis.
- Flow injection analysis.
- Process analysis
- Analytical applications of liquid chromatography as well as GC-MS chromatography.

## EDUCATION:

**Ph.D**., Hull University, 1988 (England)
(Analytical Chemistry)
**M.Sc**., Hull University, 1985, (England)
(Analytical Chemistry)
**B. Sc**., King Saud University, 1976 (Saudi Arabia)
(Chemistry and Geology)

## PROFESSIONAL EXPERIENCE

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|---|---|---|
| **Professor** | King Saud University | 1996-Present |
| **Associate Professor** | King Saud University | 1992-1996 |
| **Assistant Professor** | King Saud University | 1988-1992 |
| **Graduate student** | Hull University | 1983-1988 |
| **Instructor** | King Saud University | 1980-1983 |
| **Graduate Student** | United State of America | 1977-1980 |
| **Instructor** | King Saud University | 1976-1977 |

## PROFESSIONAL SOCIETIES

- Member of Saudi Chemical Society
- Member of American Chemical Society

- Member of the Royal Society of Chemistry (England)

## RESEARCH EXPERIENCES

**A. Master Theses Directed:**

1-Najat Mahmoud Zahran," Spectrophotometric Determination of some β-Lactam Antibiotics in Pharmaceutical Formulations" , January 1992.

2- Akel Abdulrahman Al-Akel," Flow Injection Analysis Application of Some Essential Drugs Using Chemiluminescence Detection", January 1994.

3- Salma Ali Al-Tamimi, " Batch and Automated Spectrometric Determination of some β-lactam Antibiotics", June 1994.

4- Abdullah Saeed Al-Amri, " Spectrophotometric and Chemiluminescent Determinations of some Antibiotics Using Flow Injection Analysis", May 1995.

5- Abdulrahman Ghoneim Al-Shammari, " Flow-Injection Determination of Some Essential Drugs Using Voltammetric Detection", June 1998.

6- Saad Mohammed Algarni, " High Performance Liquid Chromatography of Some Cannabinoids In Cannabis Sativa L" , March 1999.

7- Weedad Altuhami Al-Enazy, " Analysis of Some Pesticides Used in Saudi Arabia using Spectroscopic Techniques" , June 2001.

8- Lamiaa Adam Al-Bdair, " Spectrophotometric Determination of Selenium By Flow Injection Analysis" , May 2002.

9- Maha Abdullah Alnowaiser, " Determination of Some Organic Contents For Some Type of Dates With Chromatographic Methods", September 2002.

10-Abdulrahman Mohammad Al-Dabbagh, " Application of Electrogenerated Chemiluminescence On the Determination of Some Compounds of Pharmaceutical Use By Flow Injection Analysis", April 2003.

11-Mohammad Abdulaziz Alshadokhy, " Adsorptive Stripping Voltammetric Analysis of Some Pharmaceutical Preparation" January 2004.

12-Ali Falah Alghamdi, " Spectroscopic Analysis of Children Commercial Drinks", April 2004.

13-Saad Mohammad Almuaili, " Determination of Omega Fatty Acids in Some Oils and Food Supplements", January 2006.

14-Abdulaziz Ghazi Almutairi, " Use of Flow Injection Spectroscopy For the Determination of Some Artificial Food Dyes in Drinks", April 2006.

15- Mohammed Muffreh Al-Barrati, " Determination of Some Derivatives 1,4-Dihydropyridine Calcium Channel Blockers Using Merging-Zone Flow Injection And Chemiluminescence", September 2006.

16-Khalaf Musleum Al-Enazy, " Spectroscopic Analysis of Oxidative Hair Dyes In Some Hair Coloring Formulations", May 2007.

17-Haifaa Ali Al-Qudaihi, " Thermodynamic Factors Influencing the Application Of DNA Probes and DNA Binding Fluorescent Dyes For Detection of Mutations and Polymorphisms", June 2007.

18- Nawal Abdullah Al-Abbass, " Flow Injection Determination of Some Quinones Derivatives By Spectrophotometric Detection", March 2008.

19-Fayza Salem Alhakami, " Analytical Study for Vitamins Determination of the Most Famous Dates types In Madinah", April 2008.

20-Azza Farhan Alshlewe, "Quantitative Determination of Some Phytochemicals in Citrus, Using Flow Injection Analysis", June 2009.

21-Mahdi Hussain Al-Agelah, " Comparative Chemical Analysis of Car Oils Available in the Saudi Market", July 2009.

**B- Master Theses In Progress:**

1- Khalid Mohammad Al-Qahtani, " Chemical Derivatization Approach to Improve Mass Spectrometric Characterization of Biological Markets and its Application for the Diagnosis of Inherited Disease"
2- Ebtisam A. A. Al-Gashash , "Separation and Determination Constituents of some Besha Dates Palm Cultivars by High Performance Liquid Chromatography "

**C- Ph.D. Theses Directed:**

1- Nawal Ahmed Al-Arfaj, " Chemiluminescence In Drug Determination", May 1999.
2- Salma Ali Al-Tamimi, " Flow-Injection Chemiluminescence Determination of Some Important Pharmaceutical compounds In Pharmaceutical Preparation and Biological Fluids", May 2002.
3- Yousef Fayya Al-Qahtani, " Quantitative Analysis of Some Cinically Important Drugs By Derivative Spectroscopy"., January 2009.

**D-Ph.D. Theses In Progress:**

## ***Appendix A- Publications (Total 300 Publications)***

### ***Recent Publications***

1- Chittireddy, Hari Naga Prasada Reddy, JV Shanmukha Kumar, Anuradha Bhimireddy, Mohammed Rafi Shaik, Althaf Hussain Shaik, Abdulrahman Alwarthan, and Baji Shaik. "Development and Validation for Quantification of Cephapirin and Ceftiofur by Ultraperformance Liquid Chromatography with Triple Quadrupole Mass Spectrometry." *Molecules* 27, no. 22 (2022): 7920.

2- Almutairi, Etab M., Mohamed A. Ghanem, Abdulrahman Al-Warthan, Mufsir Kuniyil, and Syed F. Adil. "Hydrazine High-Performance Oxidation and Sensing Using a Copper Oxide Nanosheet Electrocatalyst Prepared via a Foam-Surfactant Dual Template." *Nanomaterials* 13, no. 1 (2022): 129.

3- Alaqarbeh, Marwa, Fawwaz Khalili, Mohammed Bouachrine, and Abdulrahman Alwarthan. "Synthesis, Characterization and Investigation of Cross-Linked Chitosan/(MnFe2O4) Nanocomposite Adsorption Potential to Extract U (VI) and Th (IV)." *Catalysts* 13, no. 1 (2022): 47.

4- Al-Hamoud, Khaleel, Mohammed Rafi Shaik, Merajuddin Khan, Hamad Z. Alkhathlan, Syed Farooq Adil, Mufsir Kuniyil, Mohamed E. Assal et al. "Pulicaria undulata extract-mediated eco-friendly preparation of TiO2 nanoparticles for photocatalytic degradation of methylene blue and methyl Orange." *ACS omega* 7, no. 6 (2022): 4812-4820.

5- Nagamalla, Lavanya, JV Shanmukha Kumar, Mohammed Rafi Shaik, Chintakindi Sanjay, Ali M. Alsamhan, Mohsin Ahmed Kasim, and Abdulrahman Alwarthan. "Identification of Novel AXL Kinase Inhibitors Using Ligand-Based Pharmacophore Screening and Molecular Dynamics Simulations." *Crystals* 12, no. 8 (2022): 1158.

6- Aljeboree, Aseel M., Nadher D. Radia, Layth Sameer Jasim, Abdulrahman A. Alwarthan, Mustafa M. Khadhim, Abbas Washeel Salman, and Ayad F. Alkaim. "Synthesis of a new nanocomposite with the core TiO2/hydrogel: Brilliant green dye adsorption, isotherms, kinetics, and DFT studies." *Journal of Industrial and Engineering Chemistry* 109 (2022): 475-485.

7- Adil, Syed Farooq, Muhammad Ashraf, Mujeeb Khan, Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Abdulrahman Al-Warthan, Mohammed

Rafiq H. Siddiqui, Wolfgang Tremel, and Muhammad Nawaz Tahir. "Advances in graphene/inorganic nanoparticle composites for catalytic applications." *The Chemical Record* 22, no. 7 (2022): e202100274.

8- Khan, Shams Tabrez, Abdul Malik, Abdulrahman Alwarthan, and Mohammed Rafi Shaik. "The enormity of the zinc deficiency problem and available solutions; an overview." *Arabian Journal of Chemistry* (2021): 103668.

9- Almutairi, Etab M., Mohamed A. Ghanem, Abdulrahman Al-Warthan, Mohammed Rafi Shaik, Syed Farooq Adil, and Adibah M. Almutairi. "Chemical deposition and exfoliation from liquid crystal template: Nickel/nickel (II) hydroxide nanoflakes electrocatalyst for a non-enzymatic glucose oxidation reaction." *Arabian Journal of Chemistry* 15, no. 1 (2022): 103467.

10- Khan, Mujeeb, Syed Farooq Adil, Mohamed E. Assal, Abdulrahman I. Alharthi, Mohammed Rafi Shaik, Mufsir Kuniyil, Abdulrahman Al-Warthan et al. "Solventless mechanochemical fabrication of ZnO–MnCO3/N-doped graphene nanocomposite: efficacious and recoverable catalyst for selective aerobic dehydrogenation of alcohols under alkali-free conditions." *Catalysts* 11, no. 7 (2021): 760.

11- Adil, Syed Farooq, Mohammed Rafi Shaik, Fahd A. Nasr, Ali S. Alqahtani, Mohammad Z. Ahmed, Wajhul Qamar, Mufsir Kuniyil et al. "Enhanced apoptosis by functionalized highly reduced graphene oxide and gold nanocomposites in MCF-7 breast cancer cells." *Acs Omega* 6, no. 23 (2021): 15147-15155.

12- Alshammari, Hamed M., Obaid F. Aldosari, Mohammad Hayal Alotaibi, Raja L. Alotaibi, Mosaed S. Alhumaimess, Moataz H. Morad, Syed Farooq Adil et al. "Facile synthesis and characterization of Palladium@ carbon catalyst for the Suzuki-Miyaura and Mizoroki-Heck coupling reactions." *Applied Sciences* 11, no. 11 (2021): 4822.

13- Alharbi, Wafa Nazzal, Waseem Sharaf Saeed, Abdulrahman A. Alwarthan, Ahmed Yacine Badjah-Hadj-Ahmed, and Taieb Aouak. "Extraction of Organic Volatile Pollutants in Over-Saturated Water by Pervaporation Technique Using a Poly (Dimethylsiloxane)-Based Sealer as a Membrane." *Water* 13, no. 8 (2021): 1049.

14- Kuniyil, Mufsir, JV Shanmukha Kumar, Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mujeeb Khan, Abdulrahman Al-Warthan, and Mohammed Rafiq H. Siddiqui. "Production of biodiesel from waste cooking oil using ZnCuO/N-doped graphene nanocomposite as an efficient heterogeneous catalyst." *Arabian Journal of Chemistry* 14, no. 3 (2021): 102982.

15- $ZnCl_2$ catalyzed new coumarinyl-chalcones as cytotoxic agents; Konidala Sathish Kumar, Vijay Kotra, Phani Kumar Kola, CH B Praveena Devi, Nutakki Anusha, Bollikolla Hari Babu, Syed Farooq Adil, Mohammed Rafi Shaik, Mujeeb Khan, Abdulrahman Al-Warthan, Osamah Alduhaish, M Mujahid Alam, Saudi Journal of Biological Sciences, December 2020.

16- Eco-Friendly and Solvent-Less Mechanochemical Synthesis of $ZrO_2$–$MnCO_3$/N-Doped Graphene Nanocomposites: A Highly Efficacious Catalyst for Base-Free Aerobic Oxidation of Various Types of Alcohols; Mufsir Kuniyil, J. V. Shanmukha Kumar, Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mujeeb Khan, Abdulrahman Al-Warthan, Mohammed Rafiq H. Siddiqui, Aslam Khan, Muhammad Bilal, Hafiz M. N. Iqbal and Waheed A. Al-Masry, Catalysts, September 2020.

17- Synthesis of Au, Ag, and Au–Ag Bimetallic Nanoparticles Using Pulicaria undulata Extract and Their Catalytic Activity for the Reduction of 4-Nitrophenol; Merajuddin

Khan, Khaleel Al-hamoud, Zainab Liaqat, Mohammed Rafi Shaik, Syed Farooq Adil, Mufsir Kuniyil, Hamad Z. Alkhathlan, Abdulrahman Al-Warthan, Mohammed Rafiq H. Siddiqui, Mihail Mondeshki, Wolfgang Tremel, Mujeeb Khan and Muhammad Nawaz Tahir, Nanomaterials, September 2020.

18- Synthesis and Characterization of CoxOy–$MnCO_3$ and CoxOy–$Mn_2O_3$ Catalysts: A Comparative Catalytic Assessment Towards the Aerial Oxidation of Various Kinds of Alcohols; Osamah Alduhaish, Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Khalid M. Manqari, Doumbia Sekou, Mujeeb Khan, Aslam Khan, Ahmed Z. Dewidar, Abdulrahman Al-Warthan and Mohammed Rafiq H. Siddiqui, Processes, April 2020.

19- Facile synthesis of Pd@graphene nanocomposites with enhanced catalytic activity towards Suzuki coupling reaction; Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Azhar Hashmi, Mujeeb Khan, Aslam Khan, Muhammad Nawaz Tahir, Abdulrahman Al-Warthan, Mohammed Rafiq H. Siddiqu, Scientific Reports, April 2020.

20- Efficient Aerial Oxidation of Different types of alcohols using ZnO nanoparticles-$MnCO_3$ decorated on graphene oxide composites; Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Azhar Hashmi, Mujeeb Khan, Aslam Khan, Muhammad Nawaz Tahir, Abdulrahman Al-Warthan, Mohammed Rafiq H. Siddiqui, Applied Organometallic Chemistry, March 2020.

21- Nanocomposites of gold nanoparticles with pregabalin: The future anti-seizure drug; Abdul-Wali Ajlouni, Alanoud Mosa AlAsiri, Syed Farooq Adil, Mohammed Rafi Shaik, Mujeeb Khan, Mohamed E. Assal, Mufsir Kuniyil, Abdulrahman Al-Warthan, Arabian Journal of Chemistry, February 2020.

22- Eco-Friendly Mechanochemical Preparation of Ag2O–$MnO_2$/Graphene Oxide Nanocomposite: An Efficient and Reusable Catalyst for the Base-Free, Aerial Oxidation of Alcohols; Syed Farooq Adil, Mohamed E. Assal, Mujeeb Khan, Mohammed Rafi Shaik, Mufsir Kuniyil, Doumbia Sekou, Ahmed Z. Dewidar, Abdulrahman Al-Warthan, Mohammed Rafiq H. Siddiqui, Catalysts, February 2020.

23- Luminescent Complexes of Co(II), Ni(II), Cu(II), Zn(II) and Bi(III) with 2-Aminothiazole based Ligand and their Biological Studies; Ayesha Kanwal, Muhammad Imran, Syed Farooq Adil, Mohammed Rafi Shaik, Abdulrahman Al-Warthan, Revista DeChimie, February 2020.

24- ENHANCED ANTIMICROBIAL ACTIVITY OF BIOFUNCTIONALIZED ZIRCONIA NANOPARTICLES; Mujeeb Khan, Mohammed Rafi Shaik, Shams Tabrez Khan, Syed Farooq Adil, Mufsir Kuniyil, Majad Khan, Abdulrahman A. Al-Warthan, Mohammed Rafiq H. Siddiqui, Muhammad Nawaz Tahir, ACS Omega, February 2020.

25- Azadirachta indica based biosynthesis of silver nanoparticles and evaluation of their antibacterial and cytotoxic effects; M. Asimuddin, Mohammed Rafi Shaik, Syed Farooq Adil, Mohammed Rafiq H. Siddiqui, Abdulrahman Al–Warthan, Kaiser Jamil, Mujeeb Khan, Journal of King Saud University – Science, January 2020.

26- Facile Sonochemical Preparation of Au-ZrO2 Nanocatalyst for the Catalytic Reduction of 4-Nitrophenol; Mohammed Rafi Shaik, Syed Farooq Adil, Mufsir Kuniyil, Muhammad Sharif, Abdulrahman Alwarthan, Mohammed Rafiq H. Siddiqui, Mohd. Imtiaz Ali, Muhammad Nawaz Tahir and Mujeeb Khan, Applied Sciences, January 2020.

27- Physico-chemical properties and catalytic activity of the sol-gel prepared Ce-ion doped LaMnO3 perovskites; Ansari, A.A., Ahmad, N., Alam, M., Adil, S.F., Ramay, S.M., Albadri, A., Ahmad, A., Al-Enizi, A.M., Alrayes, B.F., Assal, M.E., Alwarthan, A.A., Scientific Reports, December 2019.

28- A Facile Synthesis of ZrOx-$MnCO_3$/Graphene Oxide (GRO) Nanocomposites for the Oxidation of Alcohols using Molecular Oxygen under Base Free Conditions; Syed Farooq Adil, Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Nawaf M. AlOtaibi, Mujeeb Khan, Muhammad Sharif, M. Mujahid Alam, Abdulrahman Al-Warthan, Jabair Ali Mohammed, Mohammed Rafiq H Siddiqui and Muhammad Nawaz Tahir, Catalysts, September 2019.

29- Synthesis, Characterization and Relative Catalytic Study of ZrOx–MnCO3, –$MnO_2$ Or –$Mn_2O_3$ Deposited on Highly Reduced Graphene Oxide Nanocomposites for Aerobic Oxidation of Secondary Alcohols; Mohamed E. Assal, Mohammed Rafi Shaik, Mufsir Kuniyil, Mujeeb Khan, Abdulrahman Al–Warthan, M. Rafiq H. Siddiqui, J. P. Labis, Ravi Varala, Syed Farooq Adil, Indian Journal of Chemical Technology, September 2019.

30- Preparation of a carboxymethylcellulose-iron composite for uptake of atorvastatin in water; Ali, I., Alharbi, O.M.L., ALOthman, Z.A., Alwarthan, A., Al-Mohaimeed, A.M. International Journal of Biological Macromolecules, July 2019.

31- One-pot synthesized Pd@N-Doped graphene: An efficient catalyst for suzuki–miyaura couplings; Kuniyil, M., Shanmukha Kumar, J.V., Adil, S.F., Shaik, M.R., Khan, M., Assal, M.E., Siddiqui, M.R.H., Al-Warthan, A., Catalysts, May 2019.

32- Modeling of fenuron pesticide adsorption on CNTs for mechanistic insight and removal in water; Ali, I., Alharbi, O.M.L., ALOthman, Z.A., Al-Mohaimeed, A.M., Alwarthan, A., Environmental Research, March 2019.

33- Solvothermal preparation and electrochemical characterization of Cubic $ZrO_2$ Nanoparticles/Highly Reduced Graphene (HRG) based nanocomposites; Shaik, M.R., Alam, M., Adil, S.F., Kuniyil, M., Al-Warthan, A., Siddiqui, M.R.H., Tahir, M.N., Labis, J.P., Khan, M., Materials, March 2019.

34- $Ag_2O$ nanoparticles/$MnCO_3$, –$MnO_2$ or –$Mn_2O_3$/highly reduced graphene oxide composites as an efficient and recyclable oxidation catalyst; Assal, M.E., Shaik, M.R., Kuniyil, M., Khan, M., Al-Warthan, A., Alharthi, A.I., Varala, R., Siddiqui, M.R.H., Adil, S.F., Arabian Journal of Chemistry, January 2019.

35- Facile and eco-friendly synthesis of functionalized iron nanoparticles for cyanazine removal in water; Ali, I., Alharbi, O.M.L., Alothman, Z.A., Alwarthan, A., Colloids and Surfaces B: Biointerfaces, November 2018.

36- $Ag_2O$ nanoparticles-doped manganese immobilized on graphene nanocomposites for aerial oxidation of secondary alcohols; Assal, M.E., Shaik, M.R., Kuniyil, M., Khan, M., Al-Warthan, A., Siddiqui, M.R.H., Adil, S.F., Metals, June 2018.

37- Enantiomeric resolution and modeling of DL-alanine-DL-tryptophan dipeptide on amylose stationary phase; Ali, I., Khattab, R.A., Alothman, Z.A., Badjah, A.Y., Alwarthan, A., Chirality, April 2018.

38- Plant-Extract-Assisted green synthesis of silver nanoparticles using Origanum vulgare L. Extract and their microbicidal activities; Shaik, M.R., Khan, M., Kuniyil, M., Al-Warthan, A., Alkhathlan, H.Z., Siddiqui, M.R.H., Shaik, J.P., Ahamed, A., Mahmood, A., Khan, M., Adil, S.F., Sustainability, March 2018.

39- Silver-doped manganese based nanocomposites for aerial oxidation of alcohols; Assal, M.E., Shaik, M.R., Kuniyil, M., Khan, M., Shanmukha Kumar, J.V., Alzahrani, A.Y., Al-Warthan, A., Al-Tamrah, S.A., Siddiqui, M.R.H., Hashmi, S.A., Adil, S.F., Materials Express, February 2018.

40- Recent advances in syntheses, properties and applications of $TiO_2$ nanostructures; Ali, I., Suhail, M., Alothman, Z.A., Alwarthan, A., RSC Advances, February 2018.

41- Enantio-selective molecular dynamics of (±)-o,p-DDT uptake and degradation in water-sediment system; Ali, I., Alharbi, O.M.L., Alothman, Z.A., Alwarthan, A., Environmental Research, January 2018.

42- Facile synthesis of indole heterocyclic compounds based micellar nano anti-cancer drugs; Ali, I., Mukhtar, S.D., Hsieh, M.F., Alothman, Z.A., Alwarthan, A., RSC Advances, January 2018.

43- Artificial neural network modelling of amido black dye sorption on iron composite nano material: Kinetics and thermodynamics studies; Ali, I., Alharbi, O.M.L., Alothman, Z.A., Badjah, A.Y., Alwarthan, A., Basheer, A.A, Journal of Molecular Liquids, January 2018.

44- ZnOx–$MnCO_3$, –$MnO_2$ OR –$Mn_2O_3$ deposited on highly reduced graphene oxide nanocomposites as an efficient catalyst for aerial oxidation of different types of alcohols; Assal, M.E., Shaik, M.R., Kuniyil, M., Khan, M., Al-Warthan, A., Siddiqui, M.R.H., Adil, S.F., Oxidation Communications, January 2018.

45- Plant extracts as green reductants for the synthesis of silver nanoparticles: lessons from chemical synthesis; Khan, M., Shaik, M.R., Adil, S.F., Khan, S.T., Al-Warthan, A., Siddiqui, M.R.H., Tahir, M.N., Tremel, W., Dalton Transactions, January 2018.

46- A.A.Alwarthan, A.J.H.Khalil and A.Townshend, "Flow Injection Ion-Exchange Preconcentration for the Determination of Iron(II) with Chemiluminescen Detection", Fresenius J.Anal. Chem., 337, 848 (1990).

47- A.A.Alwarthan, S.Abdel Fattah and N.M.Zahran, "Spectrophotometric Determination of 7-Aminocephalosporanic Acid with Imidazole Reagent", Anal.Lett., 24 (2), 249 (1991).

48- A.A.Alwarthan, S.A.Al-Tamrah and S.M.Sultan, "Spectrophotometric Determination of Oxytetracycline by Flow Injection", Analyst, 116 (2), 183 (1991).

49- A.A.Alwarthan, A.Almuaibed and A.Townshend, "Chemiluminescence Determination of Titanium(IV) by Flow Injection Analysis using A Jones Reductor Column On-Line", Anal.Sci., 7 (8), 623 (1991).

50- A.A.Alwarthan, "Spectrophotometic Determination of Cephalexin in Pharmaceutical Formulations Using Coppr(II) Acetate as Analytical Reagent", Oriental J.Chem., 7 (3), 158 (1991).

51- A.A.Alwarthan, S.Abdel-Fattah and N.M.Zahran, "Spectrophotometric Determination of Cephalexin in Dosage Forms with Imidazole Reagent", Talanta, 39(6), 703 (1992).

52- A.A.Alwarthan, and M.A.Abdalla, "Flow-Injection Amperometric Determination of Chlorate and Hypochlorite Ions in Aqueous Acidic Solutions"., International Jour. Chem., 3 (3), 105 (1992).

53- S.A.Al-Tamrah and A.A.Alwarthan, "Determination of Some Tetracyclines Spectrophotometrically by Flow Injection Analysis", Anal. Lett., 25 (10), 1865 (1992).

54- A.A.Alwarthan, S.S.Al-Showiman, S.A.Al-Tamrah and A.A.BaOsman, "Spectrophotometric Determination of Boron in Dates of Some Cultivars Grown in Saudi Arabia", J.AOAC Inter., 76 (3), 601 (1993).

55- A.A.Alwarthan, "Determination of Ascorbic Acid by Flow Injection With Chemiluminescence Detection", Analyst, 118, 639 (1993).

56- A.A.Alwarthan, S.A.Al-Tamrah and A.A.Akel, "Determination of Promethazine by Its Inhibition of the Chmiluminescence of the Luminol- Hydrogen Peroxide-Chromiun(III) System" Anal. Chim. Acta., 282, 169, (1993).

57- A.A.Alwarthan, F.H.Metwally and S.A.Al-Tamimi, "Spectrophotometric Assay of Certain Cephalosporins Based on Formation of Ethylene Blue". Anal. Lett., 26 (12), 2619 (1993).

58- A.A.Alwarthan, and H.A.Al-Lohedan, "Kinetic Determination of Cephalexin in Drug Formulations", Talanta, 41 (2) 225 (1994).

59- A.A.Alwarthan, S.A.Al-Tamrah and A.A.Akel, "Flow-Injection Determination of Kanamycin by Inhibition of the Lucigenin-H2O2-Co2+ System", Anal. Chem. Acta, 292, 201 (1994).

60- A.A.Alwarthan, S.A.Al-Tamrah and A.A.Akel, "Determination of Isoprenaline With Lucigenin Chemiluminescence Using Flow-Injection Analysis". Anal. Sci., 10 (3) 449 (1994).

61- A.A.Alwarthan, "Chemiluminescence Detection of Sodium Nitroprusside Using Flow Injection Analysis", Talanta, 41 (10), 1683 (1994).

62- A.A.Alwarthan, "Determination of Sodium Nitroprusside by Flow Injection With Spectrophotometric Detection", Anal.Lett., 28 (2), 295 (1995).

63- B.younes, A.Al-Meshari, A.Al-Hakeem, S.Al-Saleh, F.Al-Zamel, F.Al-Shammari and A.A.Alwarthan, "Lead Concentration in Breast Milk of Nursing Mothers Living In Riyadh", Ann. Saudi Med., 15 (3) 249 (1995).

64- A.A.Alwarthan, "Flow Injection Chemiluminometric Determination of Folic Acid in Pharmaceutical Formulations", Anal. Sci. 10 (6), 919 (1994).

65- A.A.Alwarthan, and H.A.Al-Lohedan, "Direct Kinetic Determination of sodium Nitroprusside in Pharmaceutical Formulations", Anal.Lett., 28 (3), 485 (1995).

66- A.A.Alwarthan, "Chemiluminescent Determination of Tryptophan in a Flow Injection System", Anal. Chim. Acta, 317, 233 (1995).

67- A.A.Alwarthan, and A.M.Al-Obaid, "Colorimetric Determination of Astemizole in Bulk and in Its Pharmaceutical Dosage Forms Using Flow Injection", J.Pharm.Biomed. Anal., 14, 579 (1995).

68- A.A.Alwarthan, F.H.Metwally and S.A.Al-Tamimi, "Spectrophotometric Determination of Cefotaxime and ‘Cefadroxil by Alkaline Degradation to Hydrogen Sulphide and Formation of Violet Colour", Arab Gulf J.Scient Res., 13 (2), 213 (1995).

69- A.A.Alwarthan, and H.M.Al-Swaidan, "Determination of Trace Elements in Saudi Arabian Dates by Inductively Coupled Plasma Mass Spectrometry", Arab Gulf J.Scient. Res., 13 (3), 453 (1995).

70- A.A.Alwarthan, H.A.Al-Lohedan and Z.A.Issa, "Micellar Effect Upon the Lucigenin Chemiluminescent Reaction System With Isoprenaline", Anal. Lett., 29 (9), 1589 (1996).

71- A.A.Alwarthan, and A.M.Al-Obaid, "Spectrophotometric Determination of Methoxamine Using Cerium(IV) in Presence of Sodium Lauryl Sulphate and Rhodamine-B", J.Pharm. Biomed. Anal., 15, 911 (1997).

72- S.A.Al-Tamarah, and A.A.Alwarthan and A.S.Al-Amri, "Flow injection Chemiluminescence Determination of Isoprenaline", J.Saudi Chem. Soc., 1(1), 1 (1997).

73- A.A.Alwarthan, and F. A.Aly, "Chemiluminescent Determination of Pyridoxine. HCI in Pharmaceutical Samples Using Flow Injection", Talanta, 45, 1131 (1998).

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