أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Thesis Title	The Effect Of Temperature On The Chromatographic Behaviour Of Polyesters (LAC-Series) As Stationary Liquid Phases In GLC Using Aliphatic Nitriles As Test Compounds
Year	1983
Abstract	The effect of temperature on the chromatographic behaviour for some aliphatic mononitriles was studied in this investigation, where a series of polyesters of type (LAC-series) were used as follow: LAC-935, LAC-860, LAC-886, LAC-772, LAC-841, LAC-745, LAC-446. The study clears an increase in the values of specific retention volumes for the phases (LAC-772, LAC-886, LAC-860 and LAC-935) at certain column temperatures nor the other phase, with an improvement in separation when temperature arises as in LAC-886. The study also investigate that LAC-772 has perversion chromatographic behaviour to other LAC-series, and with its exceptional improvement in separation with increasing temperatures, a different in order of elution of the components was followed. The application part of this work includes the analysis of automobile exhaust gases for low boiling carbonyl compounds. The investigation was concentrated on finding the optimum experimental conditions for collecting and analyzing these compounds in their free state without converting to 2,4-dinitrophenyl hydrazine derivatives. As a result, it was possible to determine 2.186×10^{-3} mg of n-valeroaldehyde, 5.315×10^{-3} mg of acrolein and 8.375×10^{-3} mg of propionaldehyde in 150-170 m^3 of exhaust gases collected from Iraqi Reem Bus with a recovery of 94.94% , 92.56% and 115.57% respectively.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	The Effect of Tannic Acid on Lipid Peroxidation and Lipid Profile in Ischemic Heart Disease Patients.
Year	2004
Abstract	The term ischemic heart disease(IHD) defines a disease spectrum of diverse etiology, with the common factor being an imbalance between myocardial oxygen supply and demand Clinical expression of ischemic heart disease(IHD)falls into the following groups: stable chronic angina , acute syndrome encompassing unstable angina , acute myocardial infarction(AMI),and sudden ischemic death. The production of free radicals and lipid peroxidation during the course of acute attack of ischemic heart disease may be a key feature , and hence important , of disease development . In this study an attempted is made to shed a light on the possible relationships between lipid peroxidation marker , serum malondialdehyde (MDA) , and the traditional biomarkers used for the diagnosis and evaluation of IHD serum level of the lipid profile, total cholesterol , triglycerides , HDLc , LDLc and VLDLc. Serum levels of the trace elements: zinc and calcium, zinc was evaluated and also correlated with the lipid peroxidation parameter, serum MDA and LDL. Serum level of Vitamin E (α–TOH) as antioxidant, was correlated with MDA . The results of the study indicate and confirm the role of lipid peroxidation , measured as MDA in serum in IHD patients which was found to be correlated very well with certain biomarker . Moreover, MDA was negatively correlated with (vit E) and zinc in serum of patients. At last serum level of MDA was decreased to the level of healthy subjects after the addition of (0.01M) of tannic acid to serum of patients with IHD.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Determination of trace elements and nucleosides in sera of some cancerous patients by using atomic absorption and high- performance liquid chromatography
Year	June,1996
Abstract	The present work is an attempt to study the level of trace elements and nucleosides in 69 patients suffering from various types of carcinoma and this has been compared with 48 normal sera by using atomic absorption spectrometry(AAS) AND high performance liquid chromatography. The instrumental conditions for the determination and separation of trace elements and nucleosides are studied and a good precision and detection limits has been achieved which is adequate for trace elements and nucleosides investigation for serum analysis.

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريحالدكتوراة **(اخر** شهادة **)**

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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	○ Master ○ PhD
Thesis Title	**Study of Photo Degradation, Molecular Fluorescence and Thermal Decomposition of the Industrially Important Polymer (Poly Para Methyl Styrene) PPMS**
Year	**2003**
Abstract	**This study of photodegradation, molecular fluorescnce and thermal decomposition of the industrially important polymer (Polypara Methyl Styrene) PPMS includes: the following findings:** **1. Thermo analytical investigations using such techniques as TG, DTG, DTA and DSC which proved that the polymer is stable over (270 – 275)C in air and nitrogen atmospheres .** **2. PPMS is soluble in toluene, Cyclohexane, benzene, xylene, carbon tetrachoride, acetone (Slightly Soluble), nontheles it is in soluble in methanol and ethanol.** **3. Careful examinations of the UV-Vis absorption spectra revealed:** **(a) The absorption spectra of PPMS in a variety of organic solvent solutions with λ_{max}: toluene (298), cyclohexane (220, 271), benzene (297), xylene (345) and CCl_4 (345) nm.** **(b) Both toluene and cyclohexane were chosen as solvents since they have highest absorptivity.** **(c) Effect of both temperature and time of photoirradiation on the absorptivity of the polymer in toluene was studied.** **(d) The effect of experimental condition on the absorbance of PPMS solution in toluene and cyclohexane were studied as well .** **1- Concentration of PPMS shows a hyposochronic shift in**

toluene. No shift has been observed in case of cyclohexane solution. In either case no calibration plot could be constructed showing the linear relationship between concentration and absorbance.

2- A temperature rise to 40 ºC increases absorbance. Afterwards it decreases and remains stable between 50 – 55 ºC . As for cyclohexane solution there is some sort of direct proportionality between temperature and absorbance. Almost similar behavior was also observed with toluene solution of polymer.

3- Toluene and Cyclohexane solutions remain stable for a period of 1 1/2 hr. the absorbances of these solutions increase after irradiation with UV for 100 min.

4- Generation of the first derivative curves for PPMS solution in toluene and cyclohexane in addition to PS solution of these two solvents. Unfortunately no clear distinctions of these derivatives were noticed that make them suitable for qualitative and quantitative analysis.

5. Generating the fluorescence spectra of PPMS in solvents such as: toluene, cyclohexane, benzene, xylene and CCl_4 to obtain:

(a) λ_{EX} and λ_{EM} for each solvent: toluene (λ_{EX}= 300 – 500, λ_{EM}=475)nm, benzene (λ_{EX}= 316, λ_{EM}=308)nm and xylene (λ_{EX}= 300, λ_{EM}=350)nm. No fluorescence spectra have been detected for each cyclohexane or CCl_4.

(b) λ_{EX} and λ_{EM} for each solutions: toluene (548, 552)nm, cyclohexane (344, 338)nm (308, 304)nm, benzene (400, 404)nm, xylene (542, 546)nm and CCl_4 (354, 350)nm.

(c) Effect of temperature and irradiation period on the fluorescence intensity of various solutions of studied polymer.

(d) A linear curve between concentration of PPMS and intensity of fluorescence couldnot be obtained:

Effect of temperature change of solutions and the formation of non radiation intercrossing systems.

Effect of irradiation periods which changes fluorescence intensity for the different solutions.

Dissolved free oxygen is a triplet metastable state that prohibits the electronic transfer from S_1 directly to S_0.

	Dissolved oxygen should be expelled by bulbing nitrogen gas through solutions for 3 – 4 min and in particular solutions of PPMS in toluene, xylene and CCl4. Dissolved oxygen in benzene has no effect on flourescence intensity. 6. For molecular and structural purposes the IR – abrospation spectra of PPMS and PS were run under optimal expermintal condition.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Determination of Cimetidine and Erythromycin ethylsuccinate Drugs Using Different Spectrophotometric Methods			
Year	2011			
Abstract	In this study, four different spectrophotometric methods were applied for determination of cimetidine and erythromycin ethylsuccinate drugs in pure form and in their pharmaceutical preparations. The suggested methods are simple, sensitive, accurate, not time consuming and inexpensive. The results showed the following: **The first method**: Based on the formation of ion pair complex of each drug with bromothymol blue (BTB) as a chromogenic reagent. The formed complexes were extracted with chloroform and their absorbance values were measured at 427.5 nm for cimetidine and 416.5nm for erythromycin ethylsuccinate; against their reagents blanks. Two different methods, univariate method and multivariate method, were used to obtain the optimum conditions for the spectrophotometric determination of the cited drugs via ion pair formation. The Multivariate method involves the simplex optimization in addition to design of experiment (DOE)for the case of cimetidine. The study shows that the optimum conditions for the instantaneous formation of the ion-pair complexes, in aqueous medium, were: solution pH is 5.5 and 4.0 for cimetidine and erythromycin ethylsuccinate respectively, when 0.5 ml of phthalate buffer is used followed by the addition of 1 ml of 0.038% (for cimetidine) and 0.020% (for erythromycin ethylsuccinate)of BTB reagent. Moreover, the influence of different factors affecting the chloroformic extraction of the formed complexes				

was studied in each case. It was found that 6 min (for the case cimetidine complex) and 3 min (for the case erythromycin ethylsuccinate) shaking with one portion of 5 mL of chloroform was enough for quantitative extraction of the mentioned complexes.

The calibration graphs are linear in the ranges of (0.5-15.0) µg.mL^{-1} with detection limit 0.222 µg.mL^{-1} for cimetidine and (0.5-50.0) µg.mL^{-1} with detection limit 0.286 µg.mL^{-1} for erythromycin ethylsuccinate. The molar absorptivities were 13172 and 18103 L.mol^{-1}.cm^{-1}for the two complexes respectively.

The results showed that 1:1 complexes were formed with BTB through the electrostatic attraction between the positive protonated cimetidine and erythromycin ethylsuccinate with the anion of BTB.

Finally no interferences from the studied excipients on the determination of these drugs were found. The proposed methods have been successfully applied for the determination of cimetidine and erythromycin ethylsuccinate (with two of its derivatives) in some pharmaceutical compounds.

The second method: Based on the formation of charge transfer complexes between the studied drugs, as n-donors, and 2,3-dichloro-5,6-dicyano-p-benzoquinone (DDQ), as π acceptors.

The colored products were measured spectrophotometrically and exhibit absorption maxima at 587nm for cimetidine complex and 585.5nm for erythromycin ethylsuccinate complex in acetonitrile against the reagent blanks.

The optimum conditions found by following the univariate i.e. one - factor – a time method and the simplex multivariate method. It was found that, at room temperature, 0.3 ml of 0.1% DDQ solution was sufficient for the quantitative formation of cimetidine-DDQ complex while, 0.2mL of the reagent is sufficient to form the erythromycin complex; using acetonitrile as organic solvent.

Beer's law is obeyed in a concentration range of; (5.0-70.0) µg.mL^{-1} for cimetidine with a detection limit of 0.268µg.mL^{-1} and (10.0-110.0) µg.mL^{-1} with detection limit of 0.351 µg.mL^{-1} for erythromycin ethylsuccinate. The molar absorptivities were found to be (4794.4 L.mol^{-1}.cm^{-1}) for cimetidine and (4568.9 L.mol^{-1}.cm^{-1}) for erythromycin ethylsuccinate. The results showed that both complexes were formed with a ratio of 1:1 drug:DDQ. No interferences from the studied excipients on the determination of these drugs were found therefore, the proposed methods were applied successfully for the determination of the cimetidine and erythromycin ethylsuccinatein dosage form.

The third method: H-point standard addition method (HPSAM) has been applied for simultaneous spectrophotometric determination of cimetidine and erythromycin ethylsuccinate in their mixture.

Depending on the results obtained from the first method (i.e. ion-pair formation), it was observed that a substantial convergence between the absorption maxima of cimetidine-BTB complex (nm 427.5) and erythromycin ethylsuccinate-BTB complex (416.5nm). Therefore, attempts were carried out to adopt the HPSAM in estimating cimetidine in the presence of erythromycin ethylsuccinate (as interferent) and to estimate erythromycin ethylsuccinate in the presence of cimetidine (as interferent), with the possibility of simultaneous estimation of the interferent at each time.

It was found that the method is able to accurately determine cimetidine in the presence of erythromycin at 370nm and 460 nm in different ratios of analyte to interference (with best ratio of 1:4) in mixed samples containing (1–5 µg.ml^{-1}) of cimetidine. On the other hand, the determination of erythromycin ethylsuccinate in the presence of cimetidine was carried at 400 and 460 nm in different ratios of analyte to interference (with best ratio of 4:1) in mixed samples containing (2-10 µg.ml^{-1}) of erythromycin.

The results show the absence of interferences from the studied excipients on the determination these drugs, limits of detection were calculated in each case and were found to be (0.282µg.ml^{-1}) and (0.431µg.ml^{-1}) for cimetidine and erythromycin ethylsuccinate respectively. The proposed method has ben successfully applied for the simultaneous determination of cimetidine and erythromycin ethylsuccinate in pharmaceutical compounds.

The fourth method: Derivative spectrophotometry**,** this method based on the first and second derivative spectra of absorption for simultaneous determination of cimetidine and erythromycin ethylsuccinate in their mixtures in the ultraviolet region. The method offers an advantage of getting rid of the resulting error in the values of absorption because of the presence of each drug with other or the presence of interferences from the excipients recognized during the determination

	of these drugs in pharmaceutical compounds. It was possible to estimate cimetidine in the range of (2-10) μg.mL^{-1}; in mixtures containing different concentrations of erythromycin ethylsuccinate (0, 10, 20, 30) μg.mL-^{1}, as (interferent), by using the first derivative of the spectrum at 188.7 nm, 191.1 nm and 230.9 nm (peak to base line & zero cross measurements), and at 191.1-192.5 nm and 193.5- 194.9 nm (peak to peak measurements), and at 183.7-206.6 nm and 218.3-255.7 nm (peak area measurements), while the adopted wavelengths at 187.1 nm 189.1 nm, 191.3 nm, 192.4 nm, 193.5 nm and 194.7 nm (peak to base line & zero cross measurements) and wavelengths at 191.1 -192.4 nm, 192.4-193.5 nm and 193.5-194.7 nm (peak to peak measurements) and wavelengths at 188.0-190.0 nm, 190.0-192.3 nm, 191.2-193.5 nm, 192.3-194.6 nm and 193.5-195.8 nm (peak area measurements) were used for determination of cemitidine depended on second derivative spectrum. Erythromycin ethylsuccinate was determined for the range of (10-50) μg.mL^{-1}; in a mixture containing different concentrations of cimetidine (0, 2, 4, 8) μg.mL^{-1} as (interferent). It was found that the wavelengths at 189.1 nm, 191.2 nm and 195.1 nm (peak to base line & zero cross) and wavelengths at 184.1-191.8 nm and 192.1- 247.3 nm (peak area), were useful for determination of erythromycin ethylsuccinate depending on its first derivative spectrum. On the other hand, the wavelengths at 184.2 nm, 186.9 nm, 188.6 nm, 189.8 nm, 191.9 nm and 194.5 nm were found useful for peak to base line & zero cross determinations and wavelengths at 188.6 nm - 189.8 nm were used for peak to peak measurements and wavelength at 184.0–189.0 nm, 189.0–191.0 nm and 189.0-192.5 nm are used for measuring the area under the peak for the determination of erythromycin ethylsuccinate depending on its second derivative spectrum. The results obtained, by applying this method using the mentioned measurements, show the absence of interferences from the excipients on the determination of these drugs, therefore; it was possible to be applied them for the determination of the cited drugs in dosage form.

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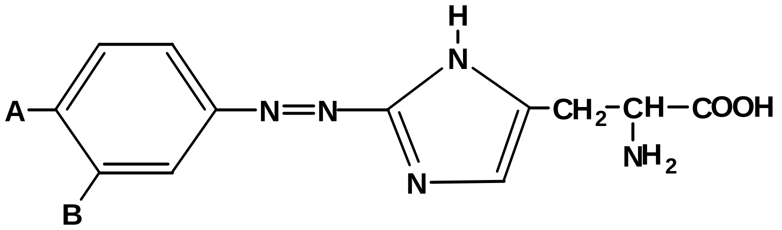
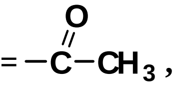
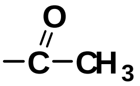
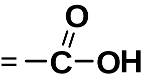
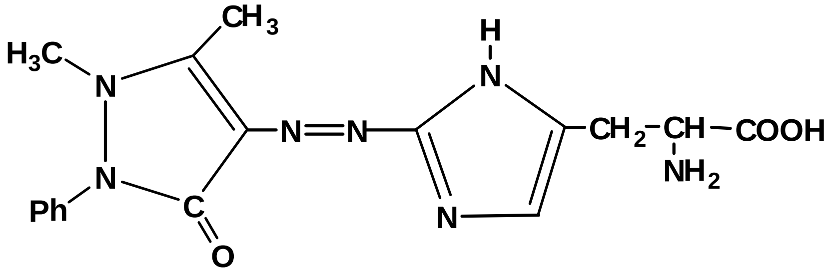
Thesis Title	*Synthesis and Characterization of Some Transition Metal Complexes With New Azo Ligands.*			
Year	2007			
Abstract	Azo compound are among the most profoundly explored classes of organic reagent both from the theoretical and practical view points. Azo compounds are characterized by the presence of azo group (-N=N-) which links two sp^2 hybridized carbon atoms. often, these carbon are part of an extended delocalized electron system involving the aromatic ring, called a chromophore. The presence of an azo linkage in aromatic compounds makes them highly important in dyestuff industry, pharmacy and dosimetry. Interested have been concentrated on the azo compounds having two or more donor atoms. However, in our laboratory a study has been made to prepare different kind of azo compounds. Also their tendency to coordinate with many metal ions has been reported. Five new azo compounds (ligands) L_1-L_5 have been prepared all rest on the (L-Histidine) as a back-bone of the prepared ligands. These polydentate ligands contain nitrogen and oxygen donor atoms having the following structures.			

L_5



L_1, (A=  $-\overset{\overset{O}{\|}}{C}-CH_3$ **, B= H)**　　**L_3, (A= H , B=**  $-\overset{\overset{O}{\|}}{C}-CH_3$ **)**

L_2, (A=  $-\overset{\overset{O}{\|}}{C}-OH$ **, B= H)**　　**L_4, (A= H , B= -OH)**



The prepared ligands were characterized by melting points measurements, IR, ^{1}HNMR and UV-Vis spectra.

The other part of this project refer to the synthesis of thirty complexes of the ions Co(II), Ni(II) Cu(II), Zn(II), Cd(II) and Hg (II) with all prepared ligands.

All preparation were performed after fixing the optimum pH and molar concentration that obeyed Lambert- Beer's law in the studies pH

ranges.

The structure of these complexes were deduced according to the molar ratio and Job methods depending on the spectroscopic studies of the complex solution of the above ions. However, ration of 1:2 M:L for all ions were obtained.

The prepared complexes were characterized using IR,UV-Vis, ^{1}HNMR spectra, molar conductivity magnetic susceptibility and melting points measurements.

The percentage of the metals in the complexes have been measured by flameless atomic absorption technique. Percentage of chloride ion has been found using “Mohr method”. Micro elemental analysis (C.H.N.) were also found, the results are in agreement with the calculated values. All the complexes are quite stable and could be stored for months without any appreciable change.

According to the results obtained by elemental and spectral analysis, an octahedral structure suggested for the prepared complexes.

In addition the dyeing performance of the prepared ligands and some of the prepared complexes was assessed. The dyes were tested for light and detergent fastness. fixed orange, brown, red and finally pink colour were obtained.

Study of biological activities of the ligands and their complexes has also been performed. The study was carried out using Escherichia Coli, Staphylococcus aurous and Psedomonas aeruginosa in agar medium. Some of the complexes exhibit good bacterial activities.

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

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Thesis Title	Synthesis of new heterocyclic compounds derived from D-Galactose and evaluation of their biological activity of these derivatives.
Year	2008
Abstract	In this, new derivatives of D- galactose have been synthesized .These derivatives are oxadiazole,1,2,4-triazole ,1,3,4-triazole , spiro and barbituric acid derivatives at position 6. Reaction of D- galactose (free sugar) containing the free hydroxyl group with dry acetone in the presence of zinc chloride and conic. Sulfuric acid led to the formation of 1.2:3,4-di-*O*-isopropylidene-α-D-galactopyranose (1). Where the isopropylidene groups was acted as a protecting groups for hydroxyl groups at C-1, C-2, C-3 and C-4 and leaving the hydroxyl group at C-6 free for doing reactions in it . Treatment of (1) with ethylchlorol acetate produces the ester (2), which on reaction with hydrazine hydrate give the hydrazide (3). This hydrazide (3) undergoes mainly two reactions. So when reacted with CS_2 and KOH gave the oxadiazole derivative (5) and subsequent alkylated to give derivative (6) , but when reacted with hydrazine hydrate , it gave 1,2,4-triazole(7). Oxidation of (1) by using a mixture of dimethyl sulphoxide (DMSO) and acetic anhydride give 1,2:3,4-di-*O*-isopropylidene-6deoxy carboxyaldehyde -α.- D-galactopyranose (13) . Treatment of(13) with diethyl malonate , it gave the derivative (14) 6-C-Dicthyl -1,2:3,4-di-*O*-isopropylidene -6-α-D-galactopyranose which reacted then with nitromethane to produce (15)and finally reacted with urea and thiourea to give derivatives of barbituric acid (16,17). The react ion of (1) with $C_6H_5SO_2CL$ / Pyridine give the compound (9) subsequent reactions with 3- and 4- amino pyridines give derivatives (10,11). Reaction of (10) with maleic anhydride gives spiro compound (12) Reaction of (9) with sodium azide, it gave (18) azidosugar, it was useful in the ynthesis of 1,2,3-triazoline derivatives (19-23) when reacted with cinnamic acid ethyl methacrylic acid, acrylonitrile maleic anhydride and p-benzoquinon in 1,4-ioxane respectively .

Compound (22) then treatment with acetic acid using stirrer give compound 24).

Treatment of the hydrazide compound (3) with (p-methyl,bromo) benzaldehyde in absolute ethanol or dry benzene gave Schiff's base (25)-6-deoxy- -(p-substituted benzylidene methyl hydrazide –*O*-methyl 1,2:3,4-di-O - sopropylidene-α- D-galactopyranose and then this derivatives reacted with 2,3- imethyl maleic anhydride to give (26) 6deoxy-2-[2-(4-substitutedphenyl)-4,7-dione 2,3-dimethyl-l, 3oxazepin- 3(2H)-yl]-methylhydrazide -*O*-methyl -1,2:3,4-di-*O*-- sopropylidene -a-D-galactopyranose and with sodium azide (NaN_3) in THF to roduce derivatives (27).

The reaction of aldehydic derivative (13),with 5- (p- iodophenyl)-2amino-1,3,4- hiadiazole gave the Schiff's base compounds (28) , which reacted with maleic nhydride to give (29)and then with sodium azide to give tetrazolo derivative (30) n order to give four and seven 1ilembered ring with carbohydrate system.

Derivative (31) was synthesized from the reaction of starting material (1) With -amino -1,3,4- thiadiazole (31)which then reacted with *p*- methyl benzaldehyde to ive the imine's compound (32).

The effect of these derivatives were tested a (against two kinds of bacteria *(E. Coli and Staphylococcus aureus)* to evaluate their biological activity.

Different concentrations (10^{-1}- 10^{-4} M) of the derivatives showed different range f activity toward (*E. Coli and Staphylococcus aureus*) was directly proportional with oncentration and kind of heterocyclic ring .

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Thesis Title	Polymer Liquid Crystal
Year	1984
Abstract	**Ph.D.** in Physical polymer Chemistry awarded from University of Sussex, Brighton, England, on 23th August 1984. Thesis entitled "Polymer Liquid Crystal" work under the supervision of Prof. Aubery D. Jenkins and Dr. David R. M. Walton. The project consists of preparation and characterization of three novel series of liquid-crystalline polymers. The liquid crystalline Properties of these polymers have studied using differential scanning calorimetry (DSC), x-ray diffraction patterns, hot-stage polarizing microscopy, and electron microscopy.

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Thesis Title	Viscometric Study Of Polyoxy Ethylene (23) Lauryl Ether in Wate, Ethanol and Ethnol –Water Mixture at Different Tempratures			
Year	2008			
Abstract	This study concerns with the polymer solvent interaction of Polyoxyethylene lauryl ether (POELE) in water , ethanol and mixture of ethanol-water (25%W\w) as solvents. Kinematic viscosities ν and relative viscosities (η_r) of polymeric solution of (POELE) in the above solvents have been determined over concentrations from 0.013 to 0.47 g\dL, at three temperatures in the range 298.15 to 318.15K. The variation of (ν) and (η_r) values with the concentration of the polymer solution and temperature have been interpreted in accordance of the energy of interaction and frictional forces between the polymer and solvent molecules . Intrinsic viscosity$[\eta]$ for polymer solutions studied here were obtained by extrapolating the plot $\eta_{sp/c}$ versus the concentration (c) to zero concentration . The equivalent hydrodynamic volumes (V_e) have been calculated using Flory equation . It was found that each$[\eta]$ an (V_e) follow the order : $[\eta]_{Eth} > [\eta]_{Mix} > [\eta]_{water}$ $(Ve)_{Eth} > (Ve)_{Mix} > (Ve)_{water}$			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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	○ Master * * • ○ PhD
Thesis Title	Study on the effect of some new pyrazole derivatives &Schiff bases on the activity of Acetylcholinesterase in human serum.
Year	2001

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

Abstract	1-The inhibitory effect of new organic compounds (pyrazole& Schiff bases)on the activity of Cholinesterase in human have been studied invitro.These compounds were included: 1,3,5-Triphenyl pyrazoline 1,5-Diphenyl-3-(2`-chloro phenyl)pyrazoline 1,5-Diphenyl-3-(4`-chloro phenel)pyrazoline 1,3-diphenyl-5-(4`-methylphenyl)pyrazoline 2-phenyl-3-(4`-chlorophenyl)-3,3a,4,5-tetrahydrobenzo{5,6}hexacyclic(1,2-C)pyrazole 2-phenyl-3-(2`,4`-dichlorophenyl)-3,3a,4,5-tetrahydrobenzo{5,6}hexacyclic(1,2-C)pyrazole N-4-Hydroxy benzylidene benzilyl hydrazone. N-4-Methoxy benzylidene benzilyl hydrazone. N-3,4-Dimethoxy benzylidene benzilyl hydrazine.. 3-Chloro-2-[N-4`-chloro benzylidene hydrazinyl]benzo[b]thiophene. 3-Chloro-5-bromo-2-[N-4`-chloro benzylidene hydrazinyl benzo[b]thiophene. 3-Chloro-2-[N-istinal hydrazinyl]benzo[b]thiophene. 3-Chloro -5-bromo-2-[α-methyl-N-3-Nitro benzylidene hydrazinyl bezo[b]thiophene. 2-Different concentrations of these compounds were used to study the type of inhibition.The results from Lineweaver-Burk plot indicated that the inhibitor type was noncompetitive with arrange (39.44-87.16),from the same relationship Ki from inhibited enzyme was determined &its values arranged between (1.44x10^{-8}-6.95x10^{-8} M).Vmapp was also equal to(0.4545-1.0526)µmol/ml/min. 3-The effect of two oximes (α-benzoin oxime,acetooxime)on activity of the inhibited enzyme have been studied .The results showed that both oximes behaved as reactivation of inhibited enzyme.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتورة (اخر شهادة)

University of Baghdad

College Name	College of Education / Ibn - Al - Haitham			
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Career	○ Assistant Lecturer	○ Lecturer	○ Assistant Professor	○ [✓ Professor]
	○ Master	○ [✓ PhD]		
Thesis Title	Synthesis and activity studies of selective amino acids derivatives and their metal complexes on chosen bacterial and fungal species.			
Year	1996			
Abstract	Three of amino acids derivatives have been prepared and used as ligands namely:- 1. Leucine-N-acetic acid (LLe), the reaction of leucine (1 Mole) with the chloro acetic acid (1 Mole) in basic medium has shown to give compound of formula ($C_8H_{15}NO_4$). The latter compound is reacted with the appropriate metal salts gave the new complexes of a general formula ($C_8H_{15}NO_4$).2MSO_4.nH_2O, where M = Zn^{++}, Co^{++}, Fe^{++}, Ni^{++} and n being 0, 0, 1, 2 for these complexes respectively and with Mn^{++} gave ($C_8H_{15}NO_4$).3$MnSO_4$.2H_2O complex and with Cr^{+++}, Pb^{++} gave complexes of formula ($C_8H_{15}NO_4$).2$Cr(NO_3)_3$.8H_2O, ($C_8H_{15}NO_4$).4$Pb(NO_3)_2$.4H_2O and with copper, tin and mercury gave complexes of formula ($C_8H_{15}NO_4$).2$CuCl_2$, ($C_8H_{15}NO_4$).2$SnCl_2$.2H_2O, ($C_8H_{15}NO_4$).4$HgCl_2$.3H_2O. Above metal ions forms octahedral complexes. 2. Prolinyl phenyl thiocyanate (Lpre) was prepared from proline (1 Mole) and phenyl thiocyanate (1 Mole) to give a compound of formula ($C_{12}H_{14}N_2O_2S$). The later compound reacted with Sn^{++}, Mn^{++}, Co^{++}, Zn^{++}, Cu^{++}, Cd^{++}, Fe^{++} ions giving complexes of the following formula: ($C_{12}H_{12}N_2O_2S$).M Where M = Sn^{++}, Mn^{++}, Cd^{++} and with Cu^{++}, Co^{++} gave complexes of formula: ($C_{12}H_{12}N_2O_2S$).M.H_2O and with Fe^{++}, Zn^{++} gave complexes of formula: $(C_{12}H_{13}N_2O_2S)_2M$ Suggesting octahedral complexes with Fe, Zn, ions and tetrahedral with Cu, Cd, Co, Mn, Sn. 3. Cysteinyl phenyl thiocyanate (Lcys) was prepared from cystein (1 Mole) and phenyl thiocyanate (1 Mole) to give a compound of formula ($C_{10}H_{12}N_2O_2S_2$). The latter compound then reacted with Pb^{++}, Mn^{++}, Zn^{++},			

Cu^{++} ions to give complexes of the type: $(C_{10}H_{12}N_2O_2S_2)_3Mn.2H_2O$, $(C_{10}H_{12}N_2O_2S_2)_3Zn.2C_2H_2OH$ with lead gave $(C_{10}H_{12}N_2O_2S_2)Pb(NO_3)_2.3H_2O$ and with copper $(C_{10}H_{12}N_2O_2S_2).3CuSO_4.2H_2O$. All ligands and complexes were fully characterized by appropriate physical measurements. i.e.; C.H.N analysis, i.r, uv-vis, electrical conductivity, mass spectra for three amino acids derivatives only and some magnetic measurements.

The biological effects of certain amino acids derivative and their complexes have been investigated on two types of bacterial species i.e. Staphylococcus aureas a gram positive and on E. coli a gram negative ones.

The activation and inhibitory effects of these complexes on the growth-rate of the two types of the isolated bacteria were found to depend on the type of amino acid and its derivatives. Leucine derivative found to activate the growth on both types of bacteria; however Ni complex showed no effects on E. coli.

Proline derivative and their complexes showed a noticeable effect on both species save those of Mn and Fe complexes which showed no effects on E. coli.

Surprisingly cystein derivative and its complexes exert the highest effects on both species.

Similar studies were also conducted on different species of fungi namely: Aspergillus flavus and Aspergillus niger.

Complexes of Hg with leucine-N-acetic acid showed very clearly the killing effects on both species. While Cr, Mn, Zn complexes showed less effects, however the leucine derivatives and their complexes showed no effect on both species of fungi.

Similarly proline derivative and its complexes showed no effects apart from iron complexes which showed a very clear effect.

Cystein derivative exert a very effective rate of killing (100%) on both types of fungi while its complexes showed a gradual rate of killing (18-100%). It is very clear from this summery that these complexes and their derivatives could be selected as pesticides having an economical importance.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Career	○ **Assistant Lecturer** ○ **Lecturer** ○ **Assistant Professor** ○ **Professor**
	○ Master ○ PhD
Thesis Title	Clay-polymer Nanocomposites as Adsorbent for Some Organic Pollutants
Year	16/11/2011
Abstract	The presence of chlorophenols in the aquatic environment has been a big deal to scientists due to their increased discharge, toxic nature, and other adverse effects on receiving waters. Even a very low concentration of Chlorophenols in water is very toxic to aquatic life. The main sources of chlorophenols in water are the effluents of processing industries. Due to the fact that chlorophenols poisoning in human causes severe damage to the kidney, liver, and brain causes sickness or death. The present work was aimed at the development of clay-based composite as an adsorbent that it can be used in the removal of chlorophenols by adsorption to obtain equilibrium, kinetics and thermodynamic parameters. The locally available clay namely, bentonite were sampled and characterized by XRD, XRF, FTIR spectroscopy, SEM and EDS which are carried out in University of Jordan . The nanobentonite and polymethylacrylate-bentonite nanocomposite were used to study their ability to scavenge chlorophenols from aqueous solutions. Equilibration time, pH effect and initial chlorophenols concentration preceded the detailed extraction study. The experimental results show that the equilibrium contact time was obtained in with 120 min on nanobentonite and 60 min on polymethylacrylate-bentonite nanocomposite. The dynamic data fitted to the pseudo-second-order kinetic model well. The experimental data at three temperatures (25, 35 and 45 ±0.1 ^{o}C) for the nanobentonite and polymethylacrylate-bentonite nanocomposite for the removal of chlorophenols were obtained. The Freundlich isotherm model

	agrees well with the equilibrium experimental data. The thermodynamic values of ΔG^o are Positives in each system; indicating a nonspontaneous process. Positive value of ΔH^o and ΔS^o for clay unmodified indicates an endothermic process and an increase of disorder (decrease of order) of the process. And negative value of ΔH^o and ΔS^o for polymethylacrylate-bentonite nanocomposite indicates an exothermic process and decrease of disorder (increase of order) of the process. The adsorption capacity for chlorophenols increase with the decrease of pH and increase in the amount of chlorophenols adsorbed on nanobentonite with increasing electrolyte concentration but it's decreased on polymethylacrylate-bentonite nanocomposite in the presence of electrolyte. The results show that the maximum adsorption capacity for chlorophenols by polymethylacrylate-bentonite nanocomposite is found to be approximately twice that adsorbed by unmodified bentonite.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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	○ Master	● PhD		
Thesis Title	**SYNTHESIS AND CHARACTERISATION OF NEW MACROCYCLE COMPOUNDS DERIVED FROM PHOSPHINIC ACID AND ITS ADSORPTION ABILITY FOR SOME PHENOLS AND** METAL IONS			
Year	2007			
Abstract	The project covers the preparation and characterisation a new series of macrocycle compounds derived from phosphinic acid. (1)-*Bis*-[1,5-diphenylcarbazide-dimethyl phosphinic acid] (9).(2)-*Bis*-[1,5-diphenylthiocarbazide-dimethyl phosphinic acid] (10). (3)-*Bis*-[1,6-diphenyl-oxaloyldihaydrazine dimethyl phosphinic acid (11). The compounds (9, 10, 11) were prepared from the reaction of paraformaldehyde, phosphinic acid with (1, 5-diphenylcarbazide),(1, 5-diphenylthiocarbazide) and (1, 6-diphenyloxoloyldihydrazine) respectively, at the reflux temperature in presence of 6N HCl. The prepared compounds were characterised by elemental microanalysis C.H.N, melting point, FTIR, ^{1}H, ^{13}C, ^{31}P, 2D ^{1}H-^{1}H, NMR, and Mass spectroscopy. The prepared compounds were used for adsorption from solution of phenol, p-chlorophenol, copper (II), and nickel (II) at different conditions of temperature and ionic strengths.Shapes of the isotherms obtained from the adsorption studies of phenol, p-chlorophenol, copper (II), and nickel (II) on surfaces of compounds [9, 10, 11] were found to be combatable to the Freundlish equation and were similar to (**S** Type) according to Giles classification.The adsorption phenomena on these compounds were studied at different temperatures and the results indicated that the process was an exothermic. The thermodynamic functions (ΔG, ΔH, and ΔS) were calculated. Study of ionic			

	strength effect on the adsorption of phenol, p-chlorophenol was also study. The results showed an increase in the adsorption with increasing ionic strength

أنموذج (أ) الخاص برسائل الماجستير واطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Career	○ Assistant Lecturer ● Lecturer ○ AssistantProfessor ○ Professor
	● Master ○ PhD
Thesis Title	Synthesis of some new imidazole derivatives via Schiff bases
Year	2001
Abstract	This work involves synthesis of a number of imidazole derivatives starting with Schiff base.N-benzylideneareneamines synthesized by condensation of primary aromatic amines with aromatic aldehydes in boiling ethanol.Benzenesulphonylchloride reacts with these Schiff bases in dry benzene to give N-(α-chlorobenzyl) benzenesulfonanilides.The latter undergo a nucleophilic substitution reaction with thiourea in basic medium to give the corresponding iso-thiourea derivatives which were condensed with benzoin in DMF to offer imidazole derivatives. Some of the imidazole derivatives have biological activity.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

<table>
<tr><th colspan="5">University of Baghdad</th></tr>
<tr><td>College Name</td><td colspan="4">College of Education Ibn Al-Haitham</td></tr>
<tr><td>Department</td><td colspan="4">Chemistry Department</td></tr>
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<tr><td>Career</td><td>○ [✓ Assistant Lecturer]</td><td>○ Lecturer</td><td>○ Assistant Professor</td><td>○ Professor</td></tr>
<tr><td></td><td colspan="2">○ [✓ Master]</td><td colspan="2">○ PhD</td></tr>
<tr><td>Thesis Title</td><td colspan="4">Study of the Mechanical and Electrical Properties of Modified Unsaturated Polyester Blends</td></tr>
<tr><td>Year</td><td colspan="4">2009</td></tr>
<tr><td>Abstract</td><td colspan="4">In this study, three sets of blends were prepared and their mechanical properties (Impact strength, Hardness, and Bending) and dielectric behavior was investigated. The blends are prepared by mixing different weight percentages of three different natural polymers; they are cellulose, ethyl cellulose and natural rubber, with modified unsaturated polyester of molecular weight to (2230). Each set contains one of these natural polymers. Methyl Ethyl Keton peroxide is used as a hardener for each blend before the curing process takes place at curing temperature ranging from 25-40°C.</td></tr>
</table>

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

c University of Baghdad

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Career	○ **Assistant Lecturer** ● **Lecturer** ○ **Assistant Professor** ○ **Professor**
	○ Master ● PhD
Thesis Title	Synthesis of 3/-*C*-alkyl nucleoside analogues of possible biological activity
Year	2001
Abstract	In this work, two types of nucleoside analogues have been synthesized and characterized: The first type: 3/-*C*-(2-hydroxy-2-p-tolyl ethyl) nucleoside analogue [scheme27]. The second type: 3/-*C*-(4,6-dimethyl pyrimidin-2-on) nucleoside analogue[scheme 31].Oxidation of the diacetone glucose 98(containing free hydroxyl group at(C-3) with dimethyl sulphoxide and acetic anhydride gave the corresponding 3-ulose derivative99.Condensation of 99 with p-methy –acetophenone under PTC condition or by the reaction of 99 with p-methylacetophenone in the presence of sodium metal and absolute ethanol yielded derivative 100 .To confirm that the hydroxyl group was present in compound 100 at (c-3): Compound 100 treated with acetyl chloride to give compound 101 .To obtain that first type of nucleoside analogues 107,109, the isopropylidene acetal at 5,6-position was removed with acetic acid followed by periodate oxidation and borohydride reduction ,ribo derivative was obtained 104.The 5-hydroxyl group protected with benzoyl group using benzoyl chloride to give the 5-benzoate derivative 105.Treatment with a mixtureof trifluoroacetic acid and acetic acid followed by the reaction with trifluoroacetic anhydride gave derivation 106.When 106 allowed to react with mercuric theophylline salt in dry xylene , the nucleoside analogue 107 was obtained .When 106 treated with silylated uracil derivative the nucleoside analogue 109 obtained.The free nucleoside 111 and 112 were obtaind when 107 and 109 were allowed to react sodium methoxide in ethanol respectively.The second type of nucleoside analogues 122 and 123 were obtaind from the condensation of acetylacetone with 3-ulose gave the acetylacetone derivative 113.To confirm that the hydroxyl group was present in compound 113,compound 113 was treated with benzoyl chloride and acetyl chloride to give the derivatives 114 and 115 respectivly.Compound 113 condensed with urea to give the barbiturate pyrimidine derivative 116.Deprotection of the isopropylidene derivative at 5,6-position followed by periodate oxidation and borohydride reduction in situ gave the ribo derivative

	119.Benzoylation of the ribo derivative 119 with benzoyl chloride in pyridine affected the benzoylation of the 5-hydroxyl group to give 120.Treatment of 120 with a mixture of acetic acid and trifluoroacetic acid followed by the reaction with trifluoroacetic anhydride gave 121, then condensation with mercuric theophylline salt yielded the nucleoside analogue 122. Similarly, when 121 treated with silylated uracil derivative the nucloside analogue 123 obtained. The free nucleoside 124 and 125 were obtained when 122 and 123 allowed to react with sodium methoxide in ethanol.Compunds,111,112,124 and 125 were exhibited a biological activity against E-coli bacteria. Compound 124 exhibited higher degree of activity than the others.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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	○ Master ⊖ PhD
Thesis Title	POLARIZATION BEHAVIOUR OF SOME METALS AND ALLOYS IN WATER
Year	2004

Abstract

The subject of this thesis involved the investigation of the polarization behaviours of a number of metals and alloys in several types of water, which have been collected from various parts of Iraq, at four temperatures in the range 298-313 K in the absence and presence of dissolved oxygen under both static and dynamic conditions.

The metals and alloys which have been used in the investigation involved iron, copper, zinc, lead and aluminum in addition to two copper-base alloys (Brass and Tumbac) and one iron-base alloy (Stainless steel 304 L). The water specimens have been collected from different sources and involved distilled water, tap water, well water, water from certain lakes, dams and rivers and also water from Shat Al-Arab.

The polarization behaviours of each metal or alloy covered several regions of the potentiostatic polarization curves including

diffusion-and activated-controlled cathodic and anodic regions, in addition to the passive and transpassive regions. Data have been derived regarding the Tafel slopes, corrosion potentials and corrosion current densities, transfer coefficients, the equilibrium exchange current densities, polarization resistances and the passive and transpassive potentials and current densities.

The water specimens have been subjected to careful chemical analysis and to certain specific physical measurements before being used in the research. These included measurements of density, pH and conductivity in addition to the determination of alkalinity, salinity, concentrations of Cl^-, SO_4^{2-} and Ca^{2+}, Mg^{2+} ions and total hardness. Analysis also involved the concentrations of such ions as Fe^{2+}, Cu^{2+}, Zn^{2+}, Pb^{2+} and Al^{3+}. Such analysis have been done on water specimens before and after polarization experiments.

The polarization experiments have been done on deaerated water and also on water, which was saturated with oxygen. The experiments have been performed under static condition first and then when the water specimen was steadily stirred. The temperature dependencies of the polarization have been measured in order to obtain quantitative data concerning the thermodynamic and kinetic aspects of corrosion.

The water specimens have been numbered from 1 to 14 as presented in table 3.2. Various types of symbols have also been adopted to refer to the various corrosion environments and these involved: M/O_2 for the polarization of the metal M in water specimen which was saturated with oxygen and M/O_2 stir. For the polarization of the metal M in well-stirred water specimen which was saturated with pure oxygen. When no $/O_2$ or $/O_2$ stir. Symbols were mentioned at the right of the symbol M, it is meant the polarization of the metal in deaerated water.

The value of the corrosion potential (E_c) represents the thermodynamic tendency of the metal or the alloy for corrosion in water under the specified experimental condition. Sequences for the variations of such tendencies for the corrosion of the various metals and alloys in each type of water, and also for each metal or alloy in the different water specimens, have been established. These enabled corrosion tendency comparison to be made for the metals in each water and also for each metal or alloy in different waters. The Gibbs free energy changes (ΔG) for the corrosion could be calculated from the values of the corrosion potentials. Other thermodynamic quantities of corrosion (ΔS and ΔH) could be obtained from the investigation of the temperature dependencies of ΔG values.

The rates of corrosion could be judged from the values of the corrosion current densities (i_c) as i_c represents the rate of corrosion at a constant temperature. Thus, the corrosion rates of the various metals and alloys in a given water specimen, and also for each metal or alloy in the different water specimens, could be compared at a given temperature and be arranged in a number of sequences. The kinetic parameters could be derived from temperature dependencies of i_c values according to an Arrhenius-type equation. Thus, linear relationships have been obtained by plotting of logi_c values versus the reciprocal of temperatures (1/T). Activation energies of corrosion (E_a) and the pre-exponential factors of corrosion (A) have been obtained from the slopes and intercepts of such plots. A linear relationship existed between the experimental values of E_a and logA suggested the operation of a compensation effect in the corrosion of the metals and alloys in the different types of water.

Several other aspects of metal polarization corrosion and passivation in a large number of water specimens have been disclosed in this research. The bulk of the experimental results is huge enough and cannot easily be summarized in few pages.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

<table>
<tr><th colspan="5">University of Baghdad</th></tr>
<tr><td>College Name</td><td colspan="4">Ibn-Al-Haitham Education College</td></tr>
<tr><td>Department</td><td colspan="4">Chemistry</td></tr>
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<tr><td></td><td colspan="2">M Sc</td><td colspan="2"></td></tr>
<tr><td>Thesis Title</td><td colspan="4">Synthesis and study of the mixed ligand (alanine and anthranilic acid) with some transition Ions</td></tr>
<tr><td>Year</td><td colspan="4">2007</td></tr>
<tr><td>Abstract</td><td colspan="4">
<p>The research includes the synthesis and identification of two types complexes of the Ligand (L – alanine), symbolized (Ala) , and Ligand (anthranilic acid) , symolized (A) with some metal ions.</p>
<p>1- The mixed Ligand complexes of composition , $M(Ala_{-H}) (A_{-H}). nH_2O$</p>
<p>Where Ala = $C_3H_7NO_2$, A=$C_7H_7NO_2$ and [M(II) = Mn(II) , Fe(II) , Co(II) , Ni(II) , Cu(II) , Zn(II) and Cd(II)] (n=0 or 2).</p>
<p>Were obtained by mixing a queous solution of metal Chloride and aqueous solution of the depronated Ligands (by using NaOH) in 1:1:1 molar ratio (Metal:Ala_{-H} : A_{-H}).</p>
</td></tr>
</table>

2- The mono Ligand Complexes of composition , $[M^{+n} (Ala_{-H})_m]$.

Where [M=Ag (I) , pt (IV) , pd(II) , Cr (III) , Fe (III) , La (III) , Ce (III) and Nd (III)]

$+n = +1 , +2 , +3 , +4$

$m=1-3$

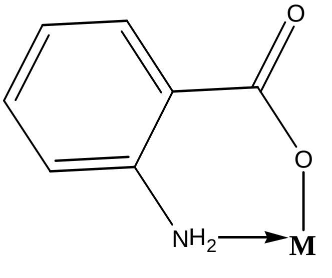
The reaction required the following molar ratios :

a- 1:1 = $(M:Ala_{-H})$ where M=Ag (I) and pt (IV).

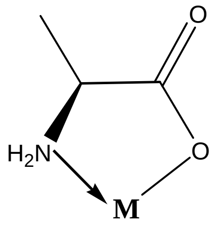
b- 1:2 = $(M:2Ala_{-H})$ where M= pd(II).

c- 1:3 = $(M:3Ala_{-H})$ where M= Cr (III) , Fe (III), La (III) , Ce (III) , Nd (III).

Two Ligands coordinated to the metal ion as uninagative bidentate Ligands through the oxygen atom in the carboxyl group ($-COO^-$) and the nitrogen atom of the ($-NH_2$) , as shown below :



Metal -anthranilate



Metal- alaninate

Products were found to be solid crystalline complexes, which have been Characterized through the followings :-

1- Thermal stability.

2. Solubility .
3. Molar conductivity.
4. Chlorid content.
5. Megentic properties.
6. Determination the percentage of the metal in the complexes by (AAS).
7. Spectroscopic Method [FT-IR and UV-Vis].
8. Program [Chem office – CS. Chem – 3D pro 2003].

From the above investigation and the mole ratio (M:L) by continuos variation method (Job's method) for the [pt (IV) , Ag(I), pd(II) complexes . The results showed that Ag(I) and pt(IV) complexes were found in (1:1) ratio but pd(II) in (1:2) ratio . The stability of these three complexes in solution were investigation by evalution of (stability formation constans (K_f) by electronic spectrm and Gib's free energy (ΔG).

The following geometrical shapes have been suggested for the synthesized complexes :

1. Five membered ring shape for the complex of ion : Ag(I).
2. The tetrahedral shapes for the complexes of the iones : Fe(II) , Co(II) , Ni(II) , Zn(II) , Cd(II).

	3- The square planer for the complex of the ion : pd(II). 4- The octahedral shape for the complexes of the iones: Mn(II) , Cu(II) , pt(IV) , Cr(III) , Fe(III) , La(III) , Ce(III) and Nd(III).

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Thesis Title	SYNTHESIS AND STUDIES OF NEW ORGANOTELLURIUM COMPOUNDS			
Year	1978			
Abstract	The syntheses of a new range of compounds in which azobenzene is metallated with tellurium(IV)or tellurium(II) are reported. The compounds include $(C_{12}H_9N_2)TeXY_2$(X=Cl,Y=Br) and the tellurium(II) compounds $(C_{12}H_9N_2)TeCl$ (phenylazophenyl-2C,N)TELLURENYL Chloride and $(C_{12}H_9N_2)Te-(C_6H_4-OEt-p)$.The reaction of $(C_{12}H_9N_2)TeCl$ with sodium borohydride afford di(o-aminophenyl)ditelluride which is shown to form coordination compounds with copper(I)and copper(II).Physical data,including infra-red spectra, are presented and discussed. It is concluded that the new tellurium(IV) derivatives are five co-ordinate monomers The synthesis of the first diorganotellurium diisothiocyanates is reported. Tow structural classes are noted;(a)$R_2Te(NCS)_2$ (R=Ph,p-$CH_3O-C_6H_4$) in which the interaction of tellurium with the two NCS groups is equal and in which intermolecular association via long Te-S			

University of Baghdad

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Career	**Assistant Lecturer** ↗	**Lecturer**	**Assistant Professor**	**Professor**
	Master →		PhD	
Thesis Title	A Study of Some Physical Properties for Aqueous Solutions of Ethylene Glycol and Some of its Polymers with and without Surface Active Material			
Year	2011			

Abstract	In this study, the density and viscosity of aqueous solutions of ethylene glycol (EG), polyethylene glycol 200 (PEG 200), polyethylene glycol 1500 (PEG 1500) and polyethylene glycol 4000 (PEG 4000) have been measured with hexadecyltrimethylammonium bromide (HDTMAB) surfactant aqueous solution and without it above its critical micelle concentration CMC. It is observed that the apparent molal volume of these solutions is changed in a non-linear manner with the molal concentration of the solute. From this dependence, the limited apparent molal volume had been calculated for all solutes. It is found that limited apparent molal volume oscillates with increasing temperature. This was explained on the conversion of molecular conformations of the solutes with increasing temperature. From the volumetric measurements, it's found the features of limited apparent molal volumes and their thermal derivatives are inverted by transition from water to the surfactant solution. The limited partial molar volume of the solutes was normalized with degree of polymerization of the solute molecule and obtained a linear relation. From this relation, the contributions of terminal Hydroxymethyl group and internal Dimethylenoxide were estimated in addition to their effect on the volumetric behaviour. The limited apparent molal expansibility at the same thermal range was calculated and found that its value in surfactant is larger than that in water, so all solutes act as a structure-breaker in the water. This feature decreases with increasing temperature. In surfactant solution the effect of all solutes is vice versa. The coefficient (B) was calculated from practical viscosity measurements; it was found it has a larger value, and these values used to calculate the effective rigid molar volume (Ve). It is found these values are related to solute particle that

attached with number of solvent particles, except EG where its effective rigid molar volume is less than its limited apparent molal volume. This was explained by proposing a spatial kind of movement that the EG molecule translates according to its aqueous solutions.

The structure-making and structure-breaking ability of solutes were re-calculated according to dB/dT values where it is found it does not agree with that from density to EG and PEG 4000, partially agree for PEG 200 and agree for PEG 1500. This was explained by returning to the basic principles that both .methods are based on

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

University of Baghdad

College Name	Ibn Al-Haitham Education college.			
Department	Chemistry			
Full Name as written in Passport	Dr. Hamid Ghaffoori Hasan.			
e-mail	gaforiiq@yahoo.co.uk			
Career	○ **Assistant Lecturer**	○ **Lecturer**	○ **Assistant Professor**	○ **Professor** √
	○ Master		○ √ PhD	
Thesis Title	Cytidine-3',5'-Cyclic monophosphate:Radioimmunoassay and Related Studies.			
Year	July 1990			
Abstract	A specific and sensitive radioimmunoassay procedure of cytidine-3',5'-cyclic monophosphate (cCMP) has been developed and applied. Experimentation has include developing means of separating cyclic CMP in biological extracts from other immunoreactive materials. The method adopted involves freez-killing in liquid nitrogen followed by extraction with perchloric acid, neutralization, freez-drying then partial purification by chromatography through a three layered column of Dowex-1, alumina and QAE-Sephadex eluted with 0.03 M HCl. This method was rapid and reproducible and gave a recovery of 88-97% of added radiolabelled cyclic CMP. The synthesis of 2'-O-Succinyl cyclic CMP (ScCMP), its tyrosinyl methyl ester and the iodinated form of the latter (ScCMP-TME and I-ScCMP-TME respectively) were developed as modifications of previous reported methods. During the course of these synthesis fast atom bombardment mass spectrometry (FABMS) followed by collisionally onduced dissociation and mass analysed ion kinetic energy spectrum scanning (CID/MIKES) was used to analyse these putative cyclicCMP derivatives and provided the first means of unambiguous identification of the position of substitution in ScCMP, ScCMP-TME and I-ScCMP. The technique was further used to determine the optimum reaction time for the iodination reaction. Antisera raised against ScCMP-Protein conjugates were screened for their ability to bind radiolabelled cyclic CMP, and appropriate antisera used in developing standard binding curves for both tritiated and radiolabelled antigen in the presence of unlabelled cyclic CMP. Conditions were optimized in terms of PH, reaction time, ionic strength and separation of bound and free antigen; comparison of [^{3}H]-and [^{125}I]-labelled antigen indicated thye latter was more effective in terms of standard curve linearity, sensitivity and range. Application of this assay has found cyclic CMP to be present in all mammalian tissue examined, and also in ***Euglena gracilis, focus spiralis*** and ***phaseolus vulgaris***; the most significant observations appear to be the secretion of cyclic CMP into the culture medium by the bacterium Corynebacterium murisepticum and the elevated levels of cyclic CMP in rapidly proliferating cells including tumor cell lines.			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	Ibn-Al-Haitham Education College			
Department	Chemistry			
Full Name as written in Passport	Taghreed Hashim Jassim Al-Noor			
e-mail	drtaghreed@yahoo. com			
Career	**Professor**			◌
	PhD			
Thesis Title	**Synthesis and Study complexes of some lanthanide using crown ether (DCH18-crown-6) and extraction**			
Year	1996			
Abstract	**Synthesis and Study complexes of some lanthanide nitrate using crown ether (DCH18-crown-6) and extraction** The **complexes** have general formulas of (Ln(NO3)3.C20H36O6.nH2O Were C20H36O6 , L n presents (Ln(III) = La(III), Ce(III),Pr(III),Nd(III),Sm(III),Eu(III),Gd(III),Lu (III) and Y(III). The Study involved ,colour,.Solubility, Melting points, Molar Conductance elemental analyses, UV, IR,. The radiation stabilities of the prepared complexes are investigated through the interaction of gamma radiation with the complexes Using (Co ^{60})gamma cell.			

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	Ibn-AL-Haithem College of Education			
Department	Chemistry			
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e-mail	hudallgh@yahoo .com			
Career	○ Assistant Lecturer	● Lecturer	○ Assistant Professor	○ Professor
	● Master		○ PhD	
Thesis Title	Synthesis of Heterocyclic Compounds derived from Quinoline			
Year	2005			
Abstract	This work comprises the synthesis of twenty six new chemical compounds derived from quinoline and containing heterocyclic moieties . These compounds were characterized by spectroscopic means normely infrared and ultraviolet and nuclear magnetic resonance (for two compounds) . Some physical properties such as melting points , solubility , colour and retardation factors (Rf) were also determined . Two groups of heterocyclic compounds were synthesized , the first group includes thirteen compounds which were prepared from 2- hydrazino quinoline (A_1) comprising heterocyclic rings such as triazole (A_2,A_3,A_4) , pyrazole (A_5,A_6) and tetrazole (A_7) in addition to six Schiff's bases .(A_8-A_{13}) . The second group of compounds (thirteen compounds) are derived from 2-mercapto quinoline (A) which was converted into the thioaceto hydrazide (A_{14}) . followed by ring closure to pyrazole (A_{17}) , pyrazolone (A_{16}) , oxadiazole (A_{18}) and triazole (A_{21}) derivatives . Five Schiff's bases were also prepared . All prepared compounds are Shown in schemes I and II .				

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	Ibn AL-Haitham Education
Department	Chemistry
Full Name as written in Passport	Husham Bahjat Abdul-Kareem AL-Samarrae
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Career	○ Assistant Lecturer ○ Lecturer ○ Assistant Professor ○ Professor
	○ Master ○ PhD
Thesis Title	Synthesis and reaction of lignans
Year	1978
Abstract	Lignans are an important group of naturally occurring compounds found widely distributed in nature, and consequently they have inspired an enormous amount of work on their synthesis,structural elucidation and reactions.The present thesis deals with some attemped new methods for the synthesis of 3,7-dioxabicyclo(3.3.0)octane derivatives.Chapter 1 describes in some detail the relevant background to the work and outlines some of the major problems encountered in this field.Chapters 2 and 3 desribe the attempted synthesis of lignans by two different routes.Finally in chapter 4 the successful synthesis of a series of 3-benzoyl chromanones and 3-benzoyl dihydro coumarins is described and their H1 and C13 n.m.r. spectra correlated with those of an unknown compound

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

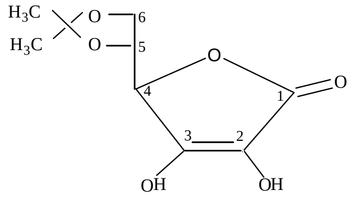
University of Baghdad				
College Name	College of Education for Pure Sciences/ Ibn Al-Haitham			
Department	Chemistry department			
Full Name as written in Passport	ISRAA SHAKIB ABDULRAZZAK			
e-mail	Israa_alkadi@yahoo.com			
Career	● Assistant Lecturer	○ Lecturer	○ Assistant Professor	○ Professor
	● Master		○ PhD	
Thesis Title	Synthesis & characterisation of the ligand 5,6–*o*–isopropylidene–L–ascorbic acid and its complexes with some metal ions			
Year	2005			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

Abstract

This work covers the synthesis of bidentate ligand type (O_2) (derived from vitamin C) 5,6–*o*–isopropylidene L–ascorbic acid $[H_2L]$.

The ligand $[H_2L]$ was prepared in a high yield (91%) from the reaction of L–ascorbic acid with acetone in acidic media.



The ligand has been characterised by thin layer chromatography (TLC) using ether–methanol mixure with (9:1) (v/v), (C.H.N), (I.R), (U.V–Vis) spectroscopies, and melting point measurements were carried out in our laboratories.

The bidentate ligand was reacted with some metal ions under reflux in methanol in presence of triethylamine (Et_3N) with (1L:1M) mole ratio to give complexes of the general formula $Z[M(HL)(X)_2(Y)(X^-)]$ and $Z[M^*(HL)(X)(X^-)]$.

Where $M=Cr^{III}$, $X=X^- = Cl$, $Y=H_2O$, $Z = Et_3N^+H$, n = –1, $(Et_3NH)[Cr(HL)(Cl_3)(H_2O)]$; Fe^{II}, X = Cl, $Y=X^- = H_2O$, $Z=Et_3N^+H$, n = –1, $(Et_3NH)[Fe(HL)(Cl_2)(H_2O)_2]$; Co^{II}, $X=X^- = Cl$, $Y = H_2O$, $Z = Et_3N^+H$, n = –2, $(Et_3NH)_2[Co(HL)(Cl_3)(H_2O)]$; Ni^{II}, X = Cl, $Y=X^- =H_2O$, $Z = Et_3N^+H$, n = –1, $(Et_3NH) [Ni(HL)(Cl_2)(H_2O)_2]$; and Cu^{II}, X=Cl, $Y=X^- = H_2O$, $Z=Et_3N^+H$, n = –1, $(Et_3NH) [Cu(HL)(Cl_2) (H_2O)_2]$, and $M^* = Mn^{II}$, $X=X^- = Cl$, $Z = Et_3N^+H$, n = –1, $(Et_3NH)[Mn(HL)Cl_2]$; Zn^{II}, X = Cl, $X^- = H_2O$, n = 0, $[Zn(HL)(Cl)(H_2O)]$; Cd^{II}, X = Cl, $X^- = H_2O$, n = 0, $[Cd(HL)(Cl) (H_2O)]$, and with (2L:1M) mole ratio to give complexes of the general formula $Z[M(HL)_2(X)(X^-)]$ and $[M^*(HL)_2]$.

Where $M = Fe^{II}$, $X=X^- = H_2O$, n = 0, $[Fe(HL)_2(H_2O)_2]$;
Co^{II}, X = Cl, $X^- = H_2O$, $Z = Et_3N^+H$, n = –1, $(Et_3NH)[Co(HL)_2 (Cl)(H_2O)]$; Ni^{II}, $X=X^- = Cl$, $Z = Et_3N^+H$, n = –2, $(Et_3NH)_2[Ni (HL)_2Cl_2]$, and Cu^{II} $X = X^- = H_2O$, n = 0, $[Cu(HL)_2(H_2O)_2]$, and $M^*=Mn^{II}$, n = 0, $[Mn(HL)_2]H_2O$; Zn^{II}, n=0, $[Zn(HL)_2]H_2O$; and Cd^{II}, n = 0, $[Cd(HL)_2]H_2O$

No complexes were obtained from the reaction of Hg^{II} ion with the ligand in both ratio, and only mercury metal Hg was precipitate out of the

reaction as a dark gray colour compound.

These complexes were characterised by elemental analysis [(C.H.N), (A.A) and chloride contents], (I.R) (U.V–Vis) spectroscopies, molar conductance, and melting point

The (I.R) spectra of the complexes show that, the ligand behaves as a mononegitve species (−1) upon coordination with metal ions, and this is presumably due to loosing of a proton at (C_3–OH) and a hydrogen bonding (O–H…O) is formed between
(C_2–OH) and (C_1=O).

Also the spectra of the complexes with (1L:1M) and (2L:1M) mole ratio exhibited two bands in the range (516–400) cm^{-1} and (505–400) cm^{-1} respectively. These bands were assigned to υ(M–O), indicating the involevement of metal ion in coordination with the ligand [H_2L].

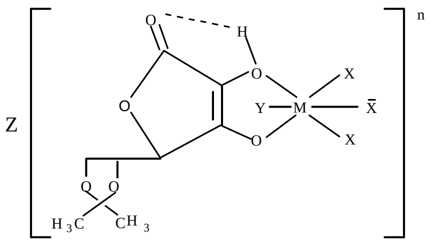
The (U.V–Vis) spectra of the ligand and their complexes were studied in order to elucidate the spatial arrangement of the ligand around the central metal ion.

The molar conductivity measurements for these complexes in (DMSO) were indicated (1:1), (1:2) ratio and neutral behaviour.

On the basis of elemental analysis [(C.H.N), (A.A)] which gave a good result in comparison with the calculated value, and the chloride contents, molar conductance, (I.R) and (U.V–Vis) spectra.

The following structures are proposed for the complexes with (1L:1M) mole ratio:

1. An octahedral structure is proposed for Cr^{III}, Fe^{II}, Co^{II}, Ni^{II} and Cu^{II} complexes of the general formula $Z[M(HL)(X)_2(Y)(X^-)]$



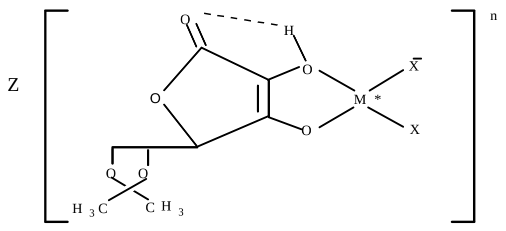
M=Cr^{III},X=X^- =Cl, Y=H_2O, Z=Et_3N^+H,n=−1,(Et_3NH)[Cr(HL)(Cl_3)(H_2O)]
^{II},X=Cl,Y=X^-=H_2O, Z=Et_3N^+H,n=−1,(Et_3NH)[Fe(HL)(Cl_2)(H_2O)$_2$];

^{II},X=X^{-}=Cl, Y=H_2O, Z=Et_3N^+H,n=–2,$(Et_3NH)_2[Co(HL)(Cl_3)(H_2O)]$;

^{II},X=Cl,Y=X^{-}=H_2O, Z=Et_3N^+H,n=–1,$(Et_3NH)[Ni(HL)(Cl_2)(H_2O)_2]$;

dCu^{II},X=Cl,Y=X^{-}=H_2O,Z=Et_3N^+H,n=–1,$(Et_3NH)[Cu(HL)(Cl_2)(H_2O)_2]$

2. A distorted tetrahedral geometry is proposed for Mn^{II} complex and a tetrahedral geometry is proposed for Zn^{II} and Cd^{II} complexes of the general formula Z[M*(HL)XX^{-}].



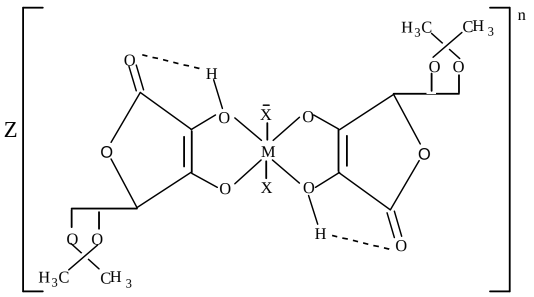
M*=Mn^{II}, X=X^{-} =Cl, Z=Et_3N^+H, n = –1, $(Et_3NH)[Mn(HL)Cl_2]$;

Zn^{II}, X = Cl, X^{-} = H_2O, n = 0, $[Zn(HL)(Cl)(H_2O)]$;

Cd^{II}, X = Cl, X^{-} = H_2O, n = 0, $[Cd(HL)(Cl)(H_2O)]$

The following structures are proposed for the complexes with (2L:1M) mole ratio:

1. An octahedral structure is proposed for Fe^{II}, Co^{II}, Ni^{II} and Cu^{II} complexes of the general formula Z[M$(HL)_2$(X)(X^{-})]



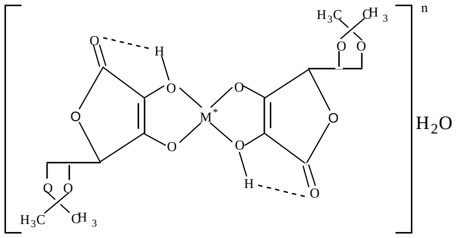
M = Fe^{II}, X =X^{-} =H_2O, n = 0, $[Fe(HL)_2(H_2O)_2]$;

Co^{II}, X =Cl,X^{-}=H_2O,Z=Et_3N^+H,n=–1, $(Et_3NH)[Co(HL)_2(Cl)(H_2O)]$;

Ni^{II}, X =X^{-} =Cl, Z = Et_3N^+H, n = –2, $(Et_3NH)_2[Ni(HL)_2Cl_2]$,

and Cu^{II} X =X^{-} =H_2O, n = 0, $[Cu(HL)_2(H_2O)_2]$

2. A distorted tetrahedral geometry is proposed for Mn^{II} complex and a tetrahedral geometry is proposed for Zn^{II} and Cd^{II} complexes of the general formula $[M^*(HL)_2]H_2O$.



M^* = Mn^{II}, n= 0, $[Mn(HL)_2]H_2O$; Zn^{II}, n= 0, $[Zn(HL)_2]H_2O$; and Cd^{II}, n = 0, $[Cd(HL)_2]H_2O$

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

<table>
<tr><th colspan="5">University of Baghdad</th></tr>
<tr><td>College Name</td><td colspan="4">College of Education Ibn AL- Haitham</td></tr>
<tr><td>Department</td><td colspan="4">Chemistry</td></tr>
<tr><td>Full Name as written in Passport</td><td colspan="4">Jasim Dawood Salman</td></tr>
<tr><td>e-mail</td><td colspan="4">Jasim_dawood2yahoo.com</td></tr>
<tr><td>Career</td><td>**○ Assistant Lecturer**</td><td>**○ Lecturer**</td><td>**● Assistant Professor**</td><td>**○ Professor**</td></tr>
<tr><td></td><td colspan="2">● Master</td><td colspan="2">○ PhD</td></tr>
<tr><td>Thesis Title</td><td colspan="4">A Study of Pollutants in Atmospheres of Some Industrial District in Baghdad City "Russafa Side"</td></tr>
<tr><td>Year</td><td colspan="4">1990</td></tr>
<tr><td>Abstract</td><td colspan="4">The logarithmic development and the open economical situation for the most sectors in Iraq created an increase of air pollutants sources in most cities of Iraq. In urban atmospheres enhanced concentrations of heavy metals and toxic gasses are due to the presence of Industrial activities, burning of fussil fuels, dense traffic and motor vehicles using gasoline and diesel fuel.
In this study, nine stations were chosen in Sheikh Omar street and two stations in Palestine street where almost no industrial activities exist.
The concentrations of total suspended particulates, heavy metals (including Pb , Cd , Bi , Mn , Fe, Co , Ni , Cu ,Zn, K and Na) in airborne particulates and blood were measured in the area of Sheikh Omer and Palestine streets during November (1989) and February (1990). Also, measurements have been made for the concentration’ of gaseous Pollutants such as CO, Cl$^-$, Cl$_2$, S^{-2}, SO$_2$, NO$_2$ and total oxidations. The meteorological factors temperature degree, relative humidity, wind speed and direction and the number of raining days were recorded, through the period of study, and the number of traffic flow per hour were also recorded.
The data included in this study have shown that the concentrations of all elements and total suspended particulates are higher in sheikh Omer Street (Industrial area) than in Palestine street during the two study periods.
As for concentrations of total suspended particulates in comparison with values recorded for other studies in Baghdad city, our values are still showing lower figures. The gaseous concentrations measured in this study are not high in comparison with the maximum accepted levels.
It is to be concluded that the main source of Mn, Fe, Zn ,Na and K are mainly soil dust as well as the accomulations on the street surface and pavement, and the main source of Cd,Bi,Co,Ni and Cu was the emissions of industrial activities . Positive correlation was observed between traffic flow and Lead concentration as well as the carbon monoxide at the stations studied.
According to this investigation, it is necessary to daily wash up the surface area of the Sheikh Omer Street as a first step, and all the industrial and business activities should be transferred away from Baghdad, to keep this city clean.</td></tr>
</table>

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	College of Education / Ibn - Al - Haitham
Department	Chemistry department
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Career	○ Assistant Lecturer ○ [✓ Lecturer] ○ Assistant Professor ○ Professor
	○ Master ○ [✓ PhD]
Thesis Title	ynthesis and Characterization of Some L-ascorbic Derivatives and their omplexes.
Year	2010

Abstract

The current research work includes three parts:

The First one refers to synthesis of a new three ligands L_1, L_2, L_3. The ligand (L_1) 2,3,5,6-tetra-o-methylene carboxyl-L-ascorbic was performed by reaction of L- ascorbic acid and chloro acetic acid in ethanolic potassium hydroxide.

The ligand (L_2) 2,3-di-o-methylene carboxyl-5,6-iso propylidene- L-ascorbic acid and L_3 methylidene carboxyl-5,6,-iso propylidene-L-ascorbic acid were prepared by the reaction of 5,6-iso propylidene-L-ascorbic acid with chloro acetic acid or dichloro acetic acid in ethanolic potassium hydroxide.

The ligands L_1, L_2, L_3 were characterized by infrared spectra, ^{1}H-NMR, ^{13}C- NMR, Mass spectra and elemental analysis (C, H).

The structural formula of them were concluded

$$L_1 = (C_{14}H_{16}O_{14})3H_2O.\frac{1}{2}EtOH.4KCl.$$

$$L_2 = (C_{13}H_{16}O_{10})3H_2O.\frac{1}{2}EtOH.4KCl.$$

$$L_3 = (C_{11}H_{12}O_8)2H_2O.\frac{1}{2}EtOH.4KCl.$$

Part two refers to employ of ligands L_1, L_2 and L_3 to synthesize of 24 complexes with bivalent metals (Co^{II}, Ni^{II}, Cu^{II}, Cd^{II}, Pb^{II}, Hg^{II}, Ca^{II}, and Mg^{II}) and characterized using IR, electronic spectra, molar conductivity, melting point, atomic absorption and molar ratio for complexes (Co^{+2}, Ni^{+2},

Cd^{+2}).

They have been concluded that these complexes have an octahedral geometries.

In part three the study of biological activities of three ligands which are:

L_1, L_2, L_3 and their complexes with (Cu^{+2}, Cd^{+2}, Ca^{+2}).

The study was carried out using staphylococcus aureu and Escherichia coli in a neutrien agar medium.

The results exhibited most all the compounds (except Ca-complexes) have variety antibacterial activities.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	College of Education – Ibn Al-Haitham			
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Career	**Assistant Lecturer**	**Lecturer**	**Assistant Professor**	**Professor** ○
	○ Master ○		● PhD	
Thesis Title	Synthesis , Characterization and Investigation of the Effect of Chemical Constitution of Liquid Crystalline Monomers , dimmers and Polymers Containing 1,3,4-Oxadiazole Unit.'			
Year	2001			
Abstract	Synthesis and characterization of new series of model compounds , dimers and polymers containing 1,3,4- oxadiazole unit are described. The materials are characterized by elemental analysis and IR, UV, mass and ^{1}HNMR spectroscopy. The influence of molecular structure on the mesomorphic properties has been studied , liquid- crystalline properties and phase transitions have been determined by using polarizing hot-stage microscopy and differential scanning calorimetry (DSC).			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

College Name	College of Education for Pure Sciences – Ibn Al-Haitham			
Department	Chemistry dept			
Full Name as written in Passport	Khalid Waleed Salih Al-Janabi			
e-mail	Khalid.janabi@gmail.com			
Career	○ Assistant Lecturer	● Lecturer	○ Assistant Professor	○ Professor
	○ Master		● PhD	
Thesis Title	**Determination The Concentrations Of Some Phenolic Pollutants In Drinking And River Water In Iraq**			
Year	**2011**			
Abstract	Different water samples were investigated for the determination of chlorophenol pollutants as considered among the most dangerous contaminants present in the environment and harmful to the public health. Real river water samples were collected from the Tigris river in Baghdad from spots close to industrial units located on the river banks suspected to release drainage wastewater to the river without enough treatment, while other samples were collected from tap and bottled drinking water distributed throughout Iraq. The study demonstrated that drinking water treatment plants aren't being capable of riddance of chlorophenols. Results have revealed the existence of some chlorophenol pollutants in Tigris river coming from the direct discharge of polluted wastewater to the river without enough treatment, as well as it has been observed the increase of the concentration for some chlorophenols in drinking water after the sterilization with chlorine during the production of tap water. Analyses have performed with a preliminary isolation and enrichment of chlorophenols in the aqueous samples by solid phase extraction SPE which has raised the sensitivity and selectivity of the method followed by High Performance Liquid Chromatography (HPLC) attached to Diode Array Detector (DAD). The method of determination developed in this work was validated experimentally by calculating important analytical parameters like the number of theoretical plates (efficiency) for the chromatographic separation column, capacity factor, resolutions, relative standard deviation (precision), limit of detection and linearity; all factors exhibited excellent results and indications. Measurements taken place in the labs of the Department of Chemical and			

Process Engineering/ Faculty of Engineering and Built Environment/ Universiti Kebangsaan Malaysia UKM for the period of June – Nov 2010. Samples transported after get extracted by SPE from Baghdad to Kuala Lumpur.

The following phenolic pollutants (2-Chlorophenol; 2,4-Dichlorophenol; 2,4,6-Trichlorophenol; 2,3,4,6-Tetrachlorophenol and Pentachlorophenol) were isolated and enriched from water samples understudy by using SPE of the sorbent Polystyrene-divinylbenzene (PS-DVB) then determined by HPLC/DAD. Upon the optimized conditions of the method, the limits of detection LOD were in the range of (0.007-0.012 $mg.L^{-1}$), linearity of the calibration curves were upon the range of 0.01-50 $mg.L^{-1}$ for all the CPs except for PCP which was in the range of 0.02-50 $mg.L^{-1}$, relative standard deviation RSD% for the spiked water samples with 0.4 $mg.L^{-1}$ of each chlorophenol ranged from 2.4 to 5.59% (n=5). While relative recoveries for the water samples spiked with 0.4 $mg.L^{-1}$ of each chlorophenol CPs were in the range from 51.06 to 104.07%.

The improved method suggested in this study was fast, sensitive and easy to operate which can be applied for routine analyses and monitoring of the chlorophenols as well as other phenolic pollutants in environmental water specimens and shall help in preserving the public health and the environment.

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Thesis Title	Determination of Diphenhydramin-HCl and Doxycycline Drugs Using Different Spectrophotometric methods			
Year	2011			

Abstract

Summary

In this Thesis study, four different spectrophotometric methods were developed for determination of Diphenhydramine-HCl and Doxycycline drugs in pure form and in their pharmaceutical preparations. The suggested methods are simple, sensitive, accurate, not time consuming and inexpensive. The results showed the following:

The first method: Based on the formation of ion pair complex of each drug with bromophenol blue (BPB) as a chromogenic reagent. The formed complexes were extracted with chloroform and their absorbance values were measured at 410 nm for Diphenhydramine-HCl and 386 nm for Doxycycline against their reagents blanks.

Two different methods, univariate method and multivariate method, were used to obtain the optimum conditions for the spectrophotometric determination of the cited drugs via ion pair formation. The Multivariate method involves the simplex optimization in addition to design of experiment (DOE) for the case of Diphenhydramine-HCl.

The study shows that the optimum conditions for the instantaneous formation of the ion-pair complexes, in aqueous medium, were: solution pH is 3.0 and 2.5 for Diphenhydramine-HCl and Doxycycline respectively, when 2 ml of phthalate buffer is used followed by the addition of 1 ml of 0.05% (for Diphenhydramine-HCl) and 0.08% (for Doxycycline) of BPB reagent. Moreover, the influence of different factors affecting the chloroform extraction of the formed complexes was studied in each case. It was found that 1.0 min. (for the case Diphenhydramine-HCl complex) and 3.0 min. (for the case Doxycycline) shaking time with one portion of 5 mL of chloroform was enough for quantitative extraction of the mentioned complexes.

The calibration graphs are linear in the ranges of 0.2-25.0 µg.mL^{-1} with detection limit 0.155 µg.mL^{-1} for Diphenhydramine-HCl and 0.2-18.0µg.mL^{-1} with detection limit 0.286 µg.mL^{-1} for Doxycycline. The molar absorptivities were 2.416x10^{4} and 12023 L.mol^{-1}.cm^{-1}for the two complexes respectively.

The results showed that 1:1 complexes were formed with BPB through the electrostatic attraction between the positive protonated Diphenhydramine-HCl and Doxycycline with the anion of BPB.

Finally no interferences from the studied excipients on the determination of these drugs were found. The

proposed methods have been successfully applied for the determination of Diphenhydramine-HCl and Doxycycline (with two of its derivatives) in some pharmaceutical compounds.

The second method: Based on the formation of charge transfer complexes between the studied drugs, as n-donors, and 2,3-dichloro-5,6-dicyano-p-benzoquinone (DDQ), as π acceptors.

The colored products were measured spectrophotometrically and exhibit absorption maxima at 456nm for Diphenhydramine-HCl complex and 383.8nm for Doxycycline complex in acetonitrile against the reagent blanks.

The optimum conditions found by following the univariate i.e. One - factor – a time method and the simplex multivariate method. It was found that, at room temperature, 0.1 mL of 0.2% DDQ solution was sufficient for the quantitative formation of Diphenhydramine-HCl-DDQ complex while, 0.2mL of 0.2% DDQ of the reagent is sufficient to form the Doxycycline-DDQ complex; using acetonitrile as organic solvent.

Beer's law is obeyed in a concentration range of; 2.5-40.0 $\mu g.mL^{-1}$ for Diphenhydramine-HCl with a detection limit of 0.0156$\mu g.mL^{-1}$ and 2.5-45.0 $\mu g.mL^{-1}$ with detection limit of 1.2301 $x10^{2}$ $\mu g.mL^{-1}$ for Doxycycline. The molar absorptivities were found to be1.138 $x10^{4}$L. $mol^{-1}.cm^{-1}$ for Diphenhydramine-HCl and 1.202 $x10^{4}$ $L.mol^{-1}.cm^{-1}$ for Doxycycline. The results showed that both complexes were formed with a ratio of 1:1 drug: DDQ. No interferences from the studied excipients on the determination of these drugs were found therefore, the proposed methods were applied successfully for the determination of the Diphenhydramine-HCl and Doxycycline dosage form.

The third method: H-point standard addition method (HPSAM) has been applied for simultaneous spectrophotometric determination of Diphenhydramine-HCl and Doxycycline in their mixture.

Depending on the results obtained from the first method (i.e. ion-pair formation), it was observed that a substantial convergence between the absorption maxima of Diphenhydramine-HCl-BPB complex (410 nm) and Doxycycline-BPB complex (386nm). Therefore, attempts were carried out to adopt the HPSAM in estimating Diphenhydramine-HCl in the presence of Doxycycline as interferent and to estimate Doxycycline in the presence of Diphenhydramine-HCl as interferent, with the possibility of simultaneous estimation of the interferent at each time.

It was found that the method is able to accurately determine Diphenhydramine-HCl in the presence of Doxycycline at 410nm and 314 nm in different ratios of analyte to interference (with best ratio of 5: 8) in mixed samples .On the other hand, the determination of Doxycycline in the presence of Diphenhydramine-HCl was carried at 462.2 and 350.5 nm in different ratios of analyte to interference (with best ratio of 4:1) in mixed samples .

The results show the absence of interferences from the studied excipients on the determination these drugs, limits of detection were calculated in each case and were found to be 0.436$\mu g.ml^{-1}$ and 0.225$\mu g.ml^{-1}$for Diphenhydramine-HCl and Doxycycline respectively. The proposed method has been successfully applied for the simultaneous determination of Diphenhydramine-HCl and Doxycycline in pharmaceutical compounds.

The forth method: Derivative spectrophotometry**,** this method based on the first and second derivative spectra of absorption for determination of Diphenhydramine-HCl and Doxycycline (separately and in their mixtures) in the ultraviolet region. The method offers an advantage of getting rid of the resulting error in the values of absorption because of the presence of each drug with other or the presence of interferences from the excipients recognized during the determination of these drugs in pharmaceutical compounds.

It was possible to estimate Diphenhydramine-HCl in the range of (5-50) $\mu g.mL^{-1}$; in mixtures containing different concentrations of Doxycycline (2,4,6) μg.mL-^{1}, as (interferent), by using the first derivative of the spectrum at 160.7 22nm (peak to base line measurements), and at 190.890&189.800 nm (peak area measurements), while the adopted wavelengths at 203.532 nm, 189.733 nm, and 190.888nm (peak to base line & zero cross measurements) and wavelengths at 189.800nm and 190.890 nm (peak to peak measurements) and wavelengths at 191.1-193.0 nm 193.9-195.0 nm &195.9-197.9 nm (peak area measurements) were used for determination of D Diphenhydramine-HCl upended on second derivative spectrum.

Doxycycline was determined for the range of (50-5) µg.mL^{-1}; in a mixture containing different concentrations of Diphenhydramine-HCl (0, 2, 4, 6) µg.mL^{-1} as interferent. It was found that the wavelengths at 242.465 nm, 265.754 nm , 283.231 nm,328.917nm 360.099nm,369.974 and 385.039nm (peak to base line & zero cross) and wavelengths at 226.32-242.23 nm and 266.31 -283.33nm (peak to peak measurements) and wavelengths at217.5-233.7 nm, 233.7-254.1 nm, 254.1-274.5 nm, 274.5-297.2 nm,319.9-345.3 nm and 317.5-405.4 nm(peak area measurements) were useful for determination of Doxycycline depending on its first derivative spectrum. On the other hand, the wavelengths at 369.099 nm, 193.780nm, 370.026 nm and 371.105 nm were found useful for (peak to base line & zero cross) determinations and wavelengths at 192.47-193.76 nm, 368.95-370.02 nm and370.01-371.11 nm were used for (peak to peak measurements) and wavelength at 360.6-359.4 nm, 368.1-369.4 nm, 369.4 -370.6 nm, 370.6 -371.9 nm and 192.6 -194.8nm are used for (measuring the area under the peak) for the determination of Doxycycline depending on its second derivative spectrum.

The results obtained, by applying this method using the mentioned measurements, show the absence of interferences from the excipients on the determination of these drugs, therefore; it was possible to be applied them for the determination of the cited drugs in dosage form

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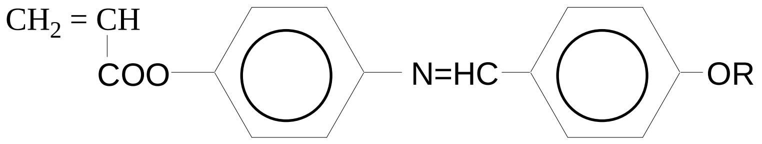
Thesis Title	**Chemical and thermal study of alumina grafted with acrylic acid monomer and it's polymeric liquid crystalline derivatives**			
Year	2007			

Abstract

In this work commercial ceramic material aluminum oxide (alumina, Al_2O_3) was grafted by acrylic acid monomer. The latter was extended with three different monomers using free radical polymerization:

1) Acrylic acid monomer.

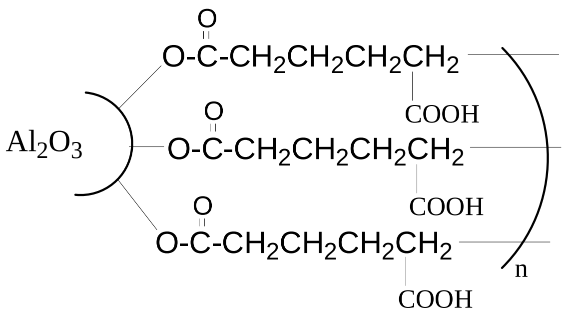
2) Two organic materials synthesized having the following structural formula:



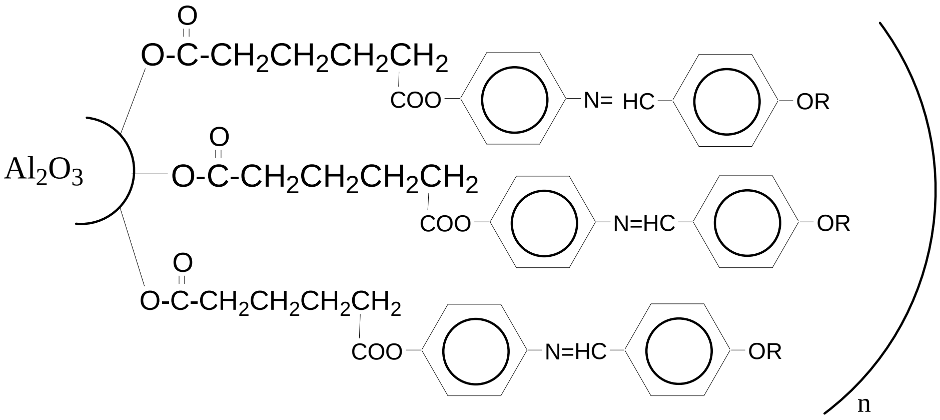
R= C_nH_{n+1}, n=4, 8

To produce three polymers (polymer A, polymer B and polymer C) having the following expected structural formula:

Polymer A:



Polymer (B, C)



$R=C_nH_{2n+1}$, n=4, 8

All the prepared materials were characterized by FTIR spectroscopy and some of those pure materials were characterized by ^{1}H-NMR and mass spectroscopy. The two organic compounds (n=4, 8) showed liquid crystalline properties (nematic phase). This was verified by using differential scanning calorimeter (DSC) and hot-stage optical polarizing microscopy (OPM). The thermal behavior of polymers A, B and C were examined by thermal gravimetric analysis (TGA).

The results of particle size measurements to the alumina particles grafted with acrylic acid monomer and polymer A were confirmed that real grafting was obtained through the increases in particle size especially for polymer A in relation to the particle size of standard ungrafted alumina.

The ability of different alumina-grafted particles was examined for adsorption of phenol and p-chlorophenol under different conditions (i.e. concentrations and temperatures). Dispersion stability of alumina in liquid medium (water) was studied first using settling under gravity technique, the result shows the settling initial rate of the alumina-grafted acrylic acid particles was faster than initial rate of settling when alumina-graft acrylic acid monomer adsorbed phenol and p-chlorophenol and vice versa to the polymer A.

Adsorption behavior for standard alumina, alumina-graft acrylic acid monomer and other three polymers (A, B, C) in relation to adsorption of phenol, p-chlorophenol showed that adsorption follows Freundlich equation for phenol and p-chlorophenol while substances behavior was different in this process as the standard alumina adsorbed phenol better than others while the adsorption of p-chlorophenol onto alumina-graft acrylic acid monomer and polymer A was better. Both polymers B and C showed a good adsorption for phenol and p-chlorophenol. Thermodynamic parameters values (ΔG, ΔS, ΔH) were calculated for adsorption processes of phenol and p-chlorophenol adsorbed onto different surfaces. The results revealed that positive and negative values were obtained implying that both endothermic and exothermic adsorption reactions may took place.

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Thesis Title	Removal of o-, m-, and p-Nitrophenol by Surfactant-modified Attapulgite			
Year	17/11/2011			
Abstract	This thesis concerns with the use of Iraqi Clay (attapulgite) for the removal of hazardous organic water pollutants, namely *o*-nitrophenol, *m*-nitrophenol and *p*-nitrophenol from their aqueous solutions. Attapulgite was modified by surfactant (hexadecyltrimethylammonium bromide (HDTMA)). Attapulgite and its modified form (A-HDTMA), were purified, sampled and characterized by X-ray diffraction (XRD), FTIR spectroscopy, scanning electron microscope (SEM) and energy dispersive X–ray spectroscopy (EDS) technique. Batch experiments were carried out at pre determined equilibration time, adsorbent amount, solution pH, adsorbent dosage, ionic strength, initial nitrphenols concentration and temperature. The results show that the maximum adsorption capacity for *o*-nitrophenol, *m*-nitrophenol and *p*-nitrophenol of the two clays are in the order: *p*-nitrophenol > *o*-nitrophenol > *m*-nitrophenol			

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Thesis Title	Synthesis of Substituted 1,3-Oxazepines and 1,3-Diazepines Via Schiff Bases			
Year	2005			
Abstract	Cinnamylideneareneamines(Schiff bases) were prepared by condensation of cinnamaldehyde with primary aromatic amines. These Schiff bases were found to react with maleic anhydride , phthalic anhydride , and 3-nitrophthalic anhydride to give 1,3- oxazepines , benz[1,2-e][1,3]-oxazepines , and 3-nitrobenz[1,2-e][1,3]-oxazepines respectively . the oxazepines were reacted with primary aromatic amine to give the corresponding 1,3- diazepine-4,7-diones , and with ammonia derivatives to give 1,2,3-trisubstituted – 1,3-diazepine 4,7-diones.			

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Thesis Title	**Utility of π-Acceptors and Acid Dyes for the Spectrophotometric Determination of Some Tricyclic Antidepressant Drugs**
Year	2006
Abstract	Tow simple, accurate, and sensitive spectrophotometric methods were developed for the determination of amitriptyline-HCl (I) and imipramine-HCl (II) in pure form and in pharmaceutical tablets. The first method is based on the formation of charge-transfer complexes between the drug base as (n-donor) and 2, 3-dichloro-5, 6-dicyano-p-benzoquinone (DDQ), p-chloranilic acid (p-CA) and p-choranil (p-CL) as (Π-acceptors). The colored products were measured spectrophotometrically and exhibit absorption maxima at (450nm, 510nm & 540nm) for (I) and at (450nm, 500nm, & 540nm) for (II) with DDQ, p-CA & p-CL, respectively. Beer's law is obeyed in a concentration range of ;(8-60 µg/ml) for the complex of (I) with DDQ and (10-40µg/ml) for both complexes of (I) with p-CA & p-CL, and in a concentration range of ; (8-70 µg/ml) for the complex of (II) with DDQ and (10-50µg/ml) for both complexes of (II) with p-CA & p-CL. The molar absorpitivites were found to be (3.9017x10^{3}, 1.2242x10^{3} & 0.4237x10^{3}l.mol^{-1} cm^{-1}) for (I) and (3.9454 x10^{3}, 1.6795x10^{3} & 0.3237x10^{3}l.mol^{-1} cm^{-1}) for (II) with DDQ, p-CA and p-CL, respectively. The second method is based on the extraction of the formed ion -association complexes of the drugs with either thymol blue or bromophenol blue at pH values (3.6 & 4.18) for (I) and at pH values (3.6 & 4.16) for (II), respectively. Both complexes of (I) have absorption maxima at 410nm, the complexes of (II) exhibit absorption maxima at 415nm, 410nm for thymol blue and bromophenol blue, respectively. Beer's law is obeyed in a concentration range of; (10-40µg/ml) & (50-150µg/ml) with molar absorpitivites of (1.1928x10^{3} & 2.3542x10^{3} l.mol^{-1}cm^{-1}) for (I) and in concentration range of ; (20-60µg/ml) & (50-250µg/ml) with molar absorpitivites of (1.7429x10^{3} & 0.7795x10^{3} l.mol^{-1}cm^{-1}) for (II) with bromophenol blue and thymol blue, respectively. The methods hold the accuracy and precision well when applied to the determination of the cited drugs in dosage form.

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Thesis Title	Synthesis of New Heterocyclic Derivatives of D-Erythroascorbic acid
Year	2011
Abstract	The synthesis of new D-erythroascorbic acid derivatives containing heterocyclic unit, five, six and seven member ring such as imidazole, thiazoldin-4-one, pyrimidine and oxazepine. The new Schiff bases [IX], [X] and [XI] were derived from D-erythroascorbic acid [IV] with aromatic amine 4-methoxy benzoyl hydrazine [VI], 2-(4′-aminophenyl)-5-(4″-methoxy phenyl)-1,3,4- oxadiazole [VII], 2-amino-5-(4′-tolyl) -1,3,4-thiadiazole [VIII] in dry benzene using glacial acetic acid as a catalyst. The primary aromatic amine which is containing 1,3,4-oxadiazole [VII] or1,3,4-thiadiazole [VIII] synthesized by the reaction of 4-methoxy benzoyl hydrazine [VI] with 4-amino benzoic acid or by the reaction of tuloic acid with thiosemicarbazide , respectively in the presence of $POCl_3$. The new imidazole derivatives were synthesized by three-steps reactions starting the corresponding Schiff bases [IX], [X] and [IX]. The new thiazolidin-4-one [XVIII], [XIX] and [XX] derivatives were synthesized by the reaction of schiff bases [IX], [X] or [XI] with thioglycolic acid in dry benzene, respectively.

4-Aminoacetophenone was reacted with (4-nitro, 4-chlor, 4-dimethyl amino or 3-nitro) benzaldehyde in basic medium giving chalcones $[XXI]_{a-d}$ by claisen-schemidt reactions. These chalcones $[XXI]_{a-d}$ were reacted with urea giving oxopyrimidines $[XXII]_{a-d}$ in acidic medium. They could also reacted with thiourea to give thioxopyrimidines $[XXIII]_{a-d}$ in basic medium. The novel Schiff bases $[XXIV]_{a-d}$ and $[XXV]_{a-d}$ were synthesized by condensation of D-erythroascorbic acid with aromatic amine (containing oxopyrimidine $[XXII]_{a-d}$ or thio- pyrimidine $[XXIII]_{a-d}$, respectively in dry benzene using few drops of glacial acetic acid as a catalyst.

The new 1,3-oxazepine $[XXVI]_{a-d}$, $[XXVII]_{a-d}$ and $[XXVIII]_{a-d}$ were synthesized by cycloaddition reaction of schiff bases [IX], [X] and [XI] with different acid anhydride (malic anhydride , phthalic anhydride, naphthalic anhydride and pyromallatic dianhydride) in dry benzene.

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Thesis Title	Construction and Characterization of New Europium and Indium Liquid Ion Selective Electrodes Based on Crown Ethers in PVC Matrix			
Year	2002			

Abstract

Several europium and indium ion selective electrodes were constructed based on 15-crown-5 (15C5), dicyclo hexano-18-crown-6 (DCH18C6) and dibenzo-24-crown-8 (DB24C8) as sensors and dioctyl phenyl phosphonate (DOPP), di-n-butyl phthalate (DBPH), tri-n-butyl phosphate (TBP), tri-n-amyl phosphate (TAP) and bis (2-ethyl hexyl) phosphate (BEHP) as plasticizers in PVC matrix membranes. Electrode parameters including linear range, detection limit, slope, response time and life time were evaluated for the electrodes. The effect of pH on the electrode response was also studied.

Europium electrode based on dicyclo hexano-18-crown-6 (DCH18C6) using dioctyl phenyl phosphonate (DOPP) as a plasticizer has given the best response for the measurements of the low concentration levels for Eu^{3+}, also the linear range for this electrode was ranged from (5.5×10^{-5} to 8.0×10^{-2}) M Eu^{3+} with correlation coefficient around one. The europium electrode gave a Nernstian slope of 19.9 mV/decade with detection limit 1.9×10^{-5} M and a working pH range of 3.9 – 6.7. The indium electrode based on 15-crown-5 (15C5) using dioctyl phenyl phosphonate (DOPP) as a plasticizer has proved the best response for low levels of In^{3+}. The linear range for this electrode was ranged from (3.8×10^{-5} to 5.0×10^{-2}) M with correlation coefficient ($r = 0.9997$) and the slope was 20.1 mV/decade with detection limit 1.2×10^{-5} M and the working pH range was 3.8 – 5.9 . Interferences of mono-, di- and tri-valent ions; Na^{+}, K^{+}, NH_4^{+}, Ca^{2+}, Ba^{2+}, Cd^{2+}, La^{3+} and Nd^{3+} on the electrode response have also been investigated using mixed solutions method. Mono- and di-valent cations were found to interfere less than the tri-valent cations.

The europium electrode based on DCH18C6 and the indium electrode based on 15C5 both using DOPP as a plasticizer showed the best selectivities for the determination of Eu^{3+} and In^{3+} respectively.

The concentrations of Eu^{3+} and In^{3+} in prepared standard solutions were determined by the electrodes using the potentiometric methods that include; direct, standard addition (SA), multiple standard addition (MSA) and titration techniques. The results were compared with those obtained by the atomic absorption

spectrophotometry. The precision and the accuracy for each method were calculated and expressed by the relative standard deviation and the relative error.

Optical measurements were also studied in this work by measuring the absorbance for each membrane after a steady intervals of immersion in a standard solution of its ions using UV/Vis. spectrophotometry. Each membrane has showed a rapid decrease in absorbance when it reaches the end of its life due to the leaching of the membrane contents to the external solution.

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Thesis Title	α-L-fucose as a possible diagnostic marker with other related parameters in thyroid dysfunction patients
Year	2005
Abstract	

Summary

α-L-fucose and other biochemical parameters in patients with thyroid dysfunction have been investigated to depict the possibility of using such parameters in diagnosis of hyperthyroidism and hypothyroidism patients compared to control.

Sera of (120) individual were used to estimate the α-L-fucose level and other related parameters, these parameters measured throughout the study are total protein (TP), total fucose (TF), $\frac{TF}{TP}$, protein bound fucose (PBF), protein bound hexose (PBHex), $\frac{PBF}{TP}$, $\frac{PBHex}{TP}$, total calcium (T.Ca) , thyroid stimulating hormone (TSH), free triiodothyronine (FT_3), free thyroxine (FT_4), cholesterol (Ch), Triglyceride (TG), high density lipoprotein (HDL) low density lipoprotein (LDL), Very low density lipoprotein (VLDL), immunoglobulines (IgM, IgG and IgA), ceruloplasmin (CP), α_1-antitrypsin, α_2-Macroglobulin, selenium (Se), Zinc (Zn), Copper (Cu), and $\frac{Zn}{Cu}$ ratio.

The levels of (PBHex, PBHex/TP, α1-antitrypsin, CP, IgM, LDL and

T,Ca) showed a significant elevation in sera of both hyperthyroidism and hypothyroidism compared to control, while (Ch) level shows a slight non significant elevation in both sera of hyperthyroidism and hypothyroidism compared to control.

The data obtained reveled a significant decrease in (TF, TF/TP, Se, Cu, IgG and HDL) levels in sera of both hyperthyroidism and hypothyroidism compared to control.

The TG and VLDL level in sera of both hyperthyroidism and hypothyroidism shows the same and near TG and VLDL for control group.

FT_3, FT_4, Zn, $\frac{Zn}{Cu}$ and IgA levels showed a significant elevation in hyperthyrodisim compared to control and a significant reduction in sera of hypothyroidism compared to control.

TSH level shows a significant decrease in hyperthyroidism and a significant increase in hypothyroidism compared to control.

PBF and α_2-macroglobulin levels showed a significant decrease in hyperthyroidism patients, while non significant increase in hypothyroidism patients was found compared to control.

The level of total protein was found to be within the normal value in sera of hyperthyroidism, and a slight increase in it's level in sera of hypothyroidism was found compared to control.

The ratio of $\frac{PBF}{TP}$ was found to be reduced significantly in sera of hyperthyroidism and was found to be similar to that of control in hypothyroidism.

Total fucose level (TF) in sera of hyperthyroidism and hypothyroidism compared to control are (5.8±2.54), (12.3±1.11), (14.9±0.5) respectively.

Protein bound fucose level (PBF) in sera of hyperthyroidism and hypothyroidism compared to control are (5.6±1.54), (9.6±1.49), (9.5±1.47) respectively, protein bound hexose (PBHex) level in sera of hyperthyroidism and hypothyroidism compared to control are (133.8±1.59), (141.9±1.9). (124.2±0.27) respectively, it was found that a significant and positive correlation between (TSH and TF) and (TSH and PBHex) and between (TF and PBF) in three studied groups under investigation, through which we can explain the significant reduction in TF and PBF could be necessary for the synthesis and folding of TSH.

The increase in PBHex being so to keep the protein bound to carbohydrate units (i.e. Mannos, Galactose, Fucose) in a balance way.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Thesis Title	Atomic absorption spectrophotometric determination of trace amounts of chromium,copper and manganese in samples of locally produced cements
Year	1984
Abstract	This research includes flame and electrothermal atomic absorption studies on quantitative determinations of manganese,copper and chromium in trace amounts samples of Iraqi cements produced in Kuffa and faluja factories.These three metals have poisonous effect when present in unusual levels in cements.In order to develop the best methods for their analysis,the effective factors such as sensitivity,detection limit and percent recovery have been investigated.Chromium and copper determined with flameless atomic absorption but manganese determined with flame atomic absorption.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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	○ **Master**		○ **PhD (chemistry)**	
Thesis Title	Solvent extraction ofTl(I), Cd(II) and Se(IV) using 2-mercaptobenzothiazole			
Year	1987			
Abstract	.solvent extraction occupies a unique status among the methods of separation . Neutron activation analysis technique is a special subject in that it is a scientific application of nuclear science which requires elaborate nuclear sources for activation and electronic instrumentation for measurements. The established methods of analysis were solvent extraction of thallium (I) , cadmium (II) and selenium (IV) with a chelating compound 2-mercaptobenzohiozole using different solvents. Also activating systems using Baba nuclear reactor , India , . We create a significant analysis process to separate theses three elements from different matrices to avoid any interfering effect between the three systems .The analysed samples were wheat flower V-2 oyster homogenate MA-MI , blood sample 6 , egg,water for selenium determination .Animal meusle blood samples 6 water samplefor the analysis of cadmium .Analysed samples were coper pyrite , gypsium and blood samples were used for thallium analysis,			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Effect of fractionation of milk clotting enzymes on protein recovery in chess
Year	1996
Abstract	This study was conducted to reduce nitrogen loss through whey by removing fractions with high proteolytic activity and louu clotting activity or no clotting activity in three different milk clotting preparations The results showed that the gel_filtration through sephadex G-75 improved the three enzymes preparations,clotting ability by excluding 44,25,30% of proteolytic fractions respectively,while ion-exchange chromatography excluded 53.8 ,75and85% of proteolytic fractions of the same enzyme preparations respectively. Electrophoretic patterens of chesse samples showed the fractionation through DEAE-sephacel contributed more effectively in excluding those fractions with high proteolytic activity and low or no clotting as compared with gel filtration.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Thesis Title	Synthesis of new malonate and barbiturate derivatives of D-erythroascorbic acid and their metal complexes.
Year	2010
Abstract	This work includes the synthesis of new derivatives of malonate of D-erythroascorbic acid and metal complexes of them, synthesis of new derivatives of barbiturate of D-erythroascorbic acid and metal complexes of them. To obtain these derivatives, the 5,6-O-isopropylidene-L-ascorbic acid (2) was chosen, which was prepared from the reaction of L-ascorbic acid (1) as a starting material with dry acetone in the presence of hydrogen chloride. The esterification of hydroxyl groups at C-2 and C-3 positions in excess of benzoyl chloride in the presence of dry pyridine was obtained compound (14). Hydrolysis for compound (14) in acetic acid (65%) gave the compound (15). Oxidation of the product (15) with sodium periodate result an Aldehyde (16), which was reacted with dimethyl malonate in the presence of potassium hydroxide to give the malonate (17). The cyclocondensation reaction for compound (17) with urea, thiourea and guanidine hydrochloride gave the following compounds (18), (19) and (20) respectively. All these compounds were characterized by Thin Layer Chromatography (TLC) and FTIR spectra and some were characterized by (U.V-Vis) spectra, ^{1}HNMR spectra and ^{13}CNMR spectra. The following compounds (17), (18), (19) and (20) were reacted with some of metal ions (Ca^{+2}, Co^{+2}, Ni^{+2}, Cu^{+2}, Zn^{+2}, Cd^{+2} and Hg^{+2}). All the complexes were characterized by FTIR spectra, (U.V-Vis) spectra, Atomic Absorption, Molar conductivity measurements; Solubility and Magnetic susceptibility measurements were conducted. From the above results, compared with the literatures for the similar complexes, the structure formula of prepared complexes we suggest: (1) 4-Coordinate complexes The general formula is $[ML_1Cl_2]$, where (M^{+2} = Ca, Co, Ni, Cu, Zn, Cd and Hg), L_1 = compound (17).

	The suggested structural formula: A- Tetrahedral for the complexes of (Ca^{+2}, Co^{+2}, Ni^{+2}, Zn^{+2}, Cd^{+2} and Hg^{+2}) ions with (L_1). B- Square planar for the complex of (Cu^{+2}) ion with (L_1). (2) 6-Coordinate complexes The octahedral with ligands (L_2, L_3 and L_4), which gave the general formula $[MLCl_2(H_2O)].XH_2O$, where (M^{+2} = Ca, Co, Ni, Cu, Zn, Cd and Hg), [L_2 = compound (18), L_3 = compound (19), L_4 = compound (20)], (X = 5 for the complex (Cd^{+2}) ion with L_2 and L_3). All the prepared metal complexes are crystalline, insoluble in water but soluble in some organic solvents and have good thermal stability.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح **الدكتورة** (اخر شهادة)

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Thesis Title	Kinetics & Mechanism studies of Reaction of some Amides with Cerium (IV) In Acid Medium.
Year	2000
Abstract	The UV-Vis spectrophotometry have been used to follow the reaction of Ce^{4+} and Amides compounds, the chosen wavelength was (λ=320 nm). The kinetics data showed that the reaction was a first order when Ce^{4+} reacts with the Amide compounds (Acetamid, N-phenyl acetamid, N-phenyl benzamide), whilt it was a consecutive first order when the Ce^{4+} reacts with the other Amide compounds such as (N- Ethyl acetamide and N-phenyl formamide) .The last reaction showed two steps (first one was fast while the second step was slow) , and in general the reaction seemed to be slow on comparison with the other amide compound , which show only one step. This was due to the presence of tautomerization and also to the effect of the active groups in these compounds. No effect was found on the rate of reaction when different concentration of amides compounds was used, and the order of reaction in all amides compounds used in this study was zero. The effect of using different concentrations of H_2SO_4 acid on the rate of reaction had been studied and no effect was observed . According to these results, the rate equation had been derived , which came in agreements with the experimental results. When high concentrations of reactants used , a precipitation had been formed. Organic tests and spectroscopic identification have been done , which showed that the final product was a complex. This complex formed as a result of linkage between Ce^{4+} with the amide carbonyl.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Effect of diyala river on the chemical and physical properties of Tigris river in southern Baghdad region			
Year	2003			
Abstract	In addition to the importance of water, it is the essential element for living. It is important as it is a solvent for gases, minerals, organic nutrients and the outputs of life processes. Water also play a good role in controlling temperature and it presents one of the media of biochemical reactions related to living in general. Water is used for many purposes. Water and its quality is determined according to the use. The aim of this study is to follow up the vvariations on water quality at the point of connection of Tigris and Diyala rivers. The environmental parameters ; temperature, specific electrical conductance, turbidity, pH, total alkalinity, total hardness, salinity, T.D.S., T.S.S., and the concentration of ions (Ca^{2+} , Mg^{2+} , Cl^{-} , SO_4^{2-} , PO_4^{3-} , NO_3^{-} , NO_2^{-}) and heavy elements (Fe, Cu, Pb, Co, Cr, Cd, and Ni) have been investigated. The study involves also, the determination of some organic compounds such as oils and greases (gravimetrically), total phenol and 2,4-dichlorophenol (spectrophotometrically), the pesticide dursban (by gas-chromatography) and herbicide glyphosphate (by high performance liquid chromatography). The study is performed during February (2001) to November (2001) for certain time intervals (around three months). The time of sampling was from 9.0 to 11.0 a.m. The sampling is performed for four stations, two of them at Diyala river (near Qargholia station), the second after sewage water treatment /Rusfaa/ Al-Rustimya, the third station at a distance of 3.0 Km after the two meet (Diyala and Tigris) and the forth at 10.0 Km distance from the third position. The sampling also is carried out for artesian Well used for drinking near the first position and for Tap waterfrom a house in Al-Madien during October.			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

University of Baghdad

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Thesis Title	**DETERMINATION OF TRACE ELEMENT THAT RESULT FROM INTERNAL FRICTION OF THE ENGINE IN USED LUBRICATING OIL**
Year	*2006*
Abstract	Spectrochemical methodswas employed for determination of wear metals (Fe, Cu, Pb and Al) that result from the internal friction between engine's component after using for a different distances in commercial fuchs lubricating oil. The samples were collected from the engine after running for 0 till 3000Km. Definitions of lubricating oils, oil additives, their physical and chemical properties of the lubricating oil and oil analyses were illustrated in chapter one in addition to some literature that concerning the determination of metal content in lubricating oil. The second chapter is concerning with the experimental part which included the kind of oil samples that analyzed in this work. The instruments and material as well as the analytical methods that employed for this task.

Result and discussion are presented in chapter three. The wear metal were determined after digestion of the oil sample with HCl solution. FAAS techniques was employed to determined the extracted metal ions (Fe, Cu and Pb) directly, while UV-vis spectrophotometer was employed for determination of the extracted metal ions after separation of Fe^{+3} with diethyl ether. The violet complex of Cu^{+2} with dithizone was separated quantitatively at pH=3, while the red complex of lead with dithizone was separated at pH=8.5. finally Al^{+3} was treated with aluminon reagent at pH=4.25 and determined at 520nm.

The concentration of iron were increased from 1.47 to 136.470 ppm in sample A (first run), while the concentration of iron in sample B (second run) were increased from 1.420 to 155.397 ppm during operation from 0 to 3000Km.

The concentration of copper were ringed from 0.715 to 15.164 ppm in sample A (first run), while copper concentration in sample B (second run) were ringed from 0.743 to 19.469 ppm during operation from 0 to 3000Km.

The concentration of aluminum were ringed from 0 to 8.071 ppm in sample A (first run), while the concentration of aluminum in sample B (second run) were increased from 0 to 12.229 ppm during operation from 0 to 3000Km.

The concentration of lead were increased from 0.691 to 100.88 ppm in sample A (first run), while the concentration of lead in sample B (second run) were increased from 0.895 to 116.581 ppm during operation from 0 to 3000Km.

	The concentration of wear metals were found to increase directly with an increase of operating distance. The friction between engine's components was responsible for the increase of metal concentration especially Fe, Al and Cu. The tetraethyl lead may be responsible for high concentration of lead in the collected used oil samples.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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	Study Kinetics Adsorption of phenolic Compounds on Siliceous Rocks powder			
	2000			

ABSTRACT

The use of adsorption method to eliminate phenolic compounds from their solutions, by using powder of Iraqi siliceous rocks, is a good way to reduce the concentrations of these impurities in drinkable water, So, a study for the Paranitrophenol, -2,5 Dimethylphenol, Orthocresol, Orthonitrophenol and Paraaminophenol on siliceous rocks powder adsorption is made.

Adsorption isotherms for compounds mentioned above are defined by the ultraviolet spectrophotometer, the isotherms for 2,5- Dimethy phenol, Orthocresol and Paraaminophenol were similar to the isotherm of lankemer L-4 according to Giles specification. But the isotherms of Paraaminophenol and Orthonitrophenol differ with Giles specification because their shapes are similar to second shape of isotherms according to Brunauer specification.

The researchers used the group and rapid agitation of mixture to study the adsorption movement, Reaction mixture means the absorbed material and phenolic compounds solution in glass container, the research studied the influence of attachment time among mixture compounds at the time needed to reach saturation in adsorption procedure. Also the influence of initial concentrations of phenolic materials was studied and the influence of temperature change and material weight in corresponding time to reach saturation.

The adsorption movement of phenolic compounds on siliceous rocks powder was studied and the data obtained were treated by two methods: 1 st methods was by the use of Lagergren equation to plot the relation between the logarithm of concentration change and the time (t). By the use of lines obtained in the figure, the coefficient of adsorption k_{ad}

obtained in the figure, the coefficient of adsorption k_{ad} is defined. The use of this methods included 2,5- Dimethyl phenol, Orthocresol and Paraaminophenol. The adsorption coefficient values were as follows:

2,5- Dimethyl phenol, > Orthcresol > Paraaminophenol

In the two cases of Nitrophenol, the value of k_{ad} for the Paraaminophenol was higher the k_{ad} for the Orthocresol, Paraaminophenol and 2,5- Dimethyl phenol in question.

The influence of temperature change on the adsorption for the Orthcresol, 2,5- Dimethyl phenol and Paraaminophenol, then the activation energies for adsorption were calculated.

The second methods taken to study the experimental data depended on the intrapartical influence on the adsorption movement. The relation between the difference of concentration and the square $t^{1/2}$. From this relation the coefficient of intrapartical average diffusion k_p. Values of k_p were as shown below:

2,5- Dimethyl phenol, > Orthocresol > Paraaminophenol

The increase of intitial concentration for k_p of Paraaminophenol and 2,5- Dimethyl phenol leaded to the increase of k_p values. And the temperature change during adsorption procedure influence the value of kp for Orthocresol, Paraaminophenol and Dimethyl phenol. Then the values of activation energies were concluded.

The study included the level of adsorption and the parameter the most dominant in the average of adsorption.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	**Synthesis, Spectral and Thermal Studies of some Transition Metal Complexes with 4-(2-Pyridyl Azo)-Resorcinol**
Year	**1995**
Abstract	**New complexes of some transition metal ions with 4-(2-pyridylazo)-resorcinol (PAR)were prepared .These ions were Fe(II), Fe(III) , Co(II) , Ni(II) , Cu(II) and Zn(II) . The preparation were perfomed after fixing the optimum PH and molar concentrations . Wide range of pH and molar concentrations in the ranges obyed Lambert-Beers law were studied .** **The structure of these complexes were deduced according to the molar ratio method which were obtained from the spectroscopic studies of complexes solutions of the above ions . However , ratios of 1:1 or 1:2 metal:ligand were observed .** **UV-Vis spectra for the prepared complexes in methanol showed a bathochochromic Shift at $\lambda_{max} \approx 500^{\circ}\pm30$nm . Also IR spectra of these complexes gave different changes compared with that of free ligand – New bands were observed indicating that the ligand is coordinate to the metal ion as a bi- or tri- dentate . The expected coordination sites are through the oxygen of the ortho OH group of resorcinol ring , the nitrogen of the azo group near by the resorcinol ring and the nitrogen of pyridine ring in which two stable five membered rings were formed giving rise to highly stable complexes .** **Micro elemental analysis (C,H,N) for these complexes was made . The percentages of metal ions were determined using flame atomic absorption spectroscopy . Different analysis methods were used for the determination of sulphur and chloride ion .** **Good agreement were obtained between the found and calculated precent values .** **Conductivity measurement have shown non-Ionic character for the solutions of complexes in methanol or D.M.F.** **Thermal analysis TG and DTG for the free ligand and all prepared complexes have been measured . These analysis have shown the presence of one molecule of crystallization water in complex structures .** **The percentage of weight loss which was recorded by the thermal curves compared with theoretically calculated values confirmed that a general line of thermal analysis includes formation of free radicals of resorcinol and pyridine with the libration of nitrogen gas during analysis .** **The residues from these analysis were either metal or metal oxides of the specified complex .** **Fanally mass spectra measurements for the free ligand and the prepared complexes have proved the suggested molecular formulas . The last two studies (thermal analysis and mass spectrometry) were considered to be done for the first time for the PAR ligand and its coplexes .**

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	Master →		PhD	
Thesis Title	*A comparison Study-Removal of Cadmium (II) from it's aqueous Solution By Activated Carbon(Charcoal), Attapulgite Clay and Powder of Date Palm Leaves (Pinnae).*			
Year	2011			

Abstract

This research deals with a study of the adsorption of Cadmium ion from it's aqueous solution upon the surfaces (Charcoal , Attapulgite and Powder of data palm leaves).

The aim of research is to compare between three adsorbents surfaces through their activity to remove the Cd(II) from it's aqueous solution .

Many analytical techniques were used such as (UV-Visible Spectrophotometry and Atomic absorption spectrophotometry) to follow adsorption capacity and determine their isotherms.

The influential factors upon the adsorption process were studied which include the effect of temperature, pH , ionic strength , adsorbent weight, partical size of adsorbent and contact time for equilibrium.

The conclusion of this research can be summarized as follows:-

- The sequenance of the adsorption of Cd(II) from it's aqueous solution upon the three adsorbents follows the following sequence:

Charcoal > Attapulgite > Powder of date palm leaves

This sequence remains constant with the change of temperature at the rang (10.0 - 50.0 °C)

- The phenomina of the adsorption of Cd(II) from it's aqueous solution upon the above three surfaces was studied at different temperatures ranging between (10.0 – 50.0 °C) and the results showed the process of Cd(II) adsorption upon the surfaces of (Charcoal and Attapulgite) is endothermic while

the process of Cd(II) adsorption upon the surface of date palms leaf powder is an exothermic kind.

- The adsorption isotherms of Cd(II) upon the surfaces of (Charcoal and Attapulgite) fit for langmuir equation while the adsorption isotherms of Cd(II) upon the surface of date palms leaf powder fit for Langmuir and Freundich equation together. Fundamental thermodynamic functions of adsorption process were calculated (ΔH , ΔS and ΔG).

- The general form of Cd(II) isotherm upon the surfaces of (Charcoal and Date palms leaf powder) coordinates generally with the (L),(H) types from Giles classification while the general form of Cd(II) isotherm upon the surface of Attapulgite coordinates with (H) type from Giles classification.

- pH effect of Cd(II) adsorption upon the surfaces of (Charcoal , Attapulgite and Powder of date palm leaves) was studied and the best values of pH were generally at alkaline and neutral media of charcoal and at acidic media for each of (Attapulgite and Date palms leaf powder).

- Ionic strength effect of Cd(II) from it's aqueous solution upon the surfaces of (Charcoal , Attapulgite and Powder of date palm leaves) was studied by using (NaCl) solution and the results showed an increase in the adsorption capacity of Cd(II) upon the surfaces of (Charcoal , Attapulgite) with the increase of the ionic strength while the adsorption capacity upon the surface of Date palms leaf powder decreases with the increase of the ionic strength of the solution.

- The increase of adsorbent weight for (Charcoal , Attapulgite and Powder of date palm leaves) increases the percentage of

Cd(II) removal.

- The results of adsorbent partical size effect on the adsorption process showed that the increase in the partical size of adsorbent decreases the adsorption capacity of Cd(II) from it's aqueous solution upon the surfaces of (Attapulgite and Date palms leaf powder) .

- The mixing of different weights of the three adsorbents (Charcoal , Attapulgite and Powder of date palm leaves) would lead to adsorption at different percentages.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

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Thesis Title	Biochemicals Studies of Alanine Aminopeptidase Isoenzymes Partially PurifiedFrom Patient's Urinary Tract Cancer
Year	2006
Abstract	**1.** The activity of alanine aminopeptidase (AAP) was measured in Urine of (47) healthy subject ages (6-65) years, activity rate (7.49± 2.76) I.U/L and (76) patients, ages (2-74) years, activity rate (24.83± 9.66) I.U/L. Results showed that high significant ($P<0.05$) in alanine aminopeptidase (AAP) activity and AAP/ Creatinine excreted in urine were increased in 97% of the patients compared to healthy subjects. **2.** AAP was purified from urine patients with Urinary tract cancer and healthy subjects , by gel fillration on Sephadex G-50. **3.** Two isoenzymes of (AAP) I, II were separated from urine of patients with Urinary tract cancer, using DEAE-Sephadex A-50. **4.** The kinetics studies showed that both isoenzymes I and II obeyed Michaelis-Menton equation. The optimal concentration of alanine-4- nitroanilide for isoenzymes I , II were (2 ò 10^{-3}) mole / liter and their Km values were determined. **5.** The two isoenzymes obeyed Arrhenius equation up to 37^{o} C and their E_a and Q_{10} constants were determined. **6.** the binding of alanine-4-nitroanilide's by two isoenzymes I , II were studied and the thermodynamic parameters (K_{obs} , K_{+1} , K_{-1} , K_a , K_d) were indicated that the reaction was pseudo first order at 37 c. **7.** The thermodynamics of alanine-4-nitroanilide to isoenzymes I, II were studied by using Vant Hoff and Arrhenius equations. From these equations the thermodynamic parameters of the standard state (ΔG°, ΔH°, ΔS°) and the transition state (ΔG^*, ΔH^*, ΔS^*) were determined. **8.** Spectroscopic studies in the UV range (200-400) nm were determined for isoenzymes I, II. The UV spectrum of the two isoenzymes I, II was obtained. The Inhibition effect by using isoleucine on the complex of alanine-4-nitroanilide-AAP was also obtained.

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

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Thesis Title	Preparation and characterization of Aluminum hydroxide Amino acid compounds and the (ESR) study of defect states induced by γ-irradiation
Year	1992
Abstract	Aluminium (III) hydroxo-amino acid complexes (glycine , β-alanine, L-α-histidine , L-α-proline , DL-α-valine , DL-α-leucine , and DL-α-aspartic acid) of biological interest , were precipitated from $ALCL_3$ solutions. The new compounds thus obtained can be presented by the general formula $AL_p(OH)_q\,(\text{amino}-\text{acid})_r \times H_2O\ (p > r)$ The stable organic paramagnetic centers were detected in all the γ-irradiation aluminium hydroxide complexer with amino acids . Organic radicals were characteristic for each amino acid – aluminium hydroxide complex . In the complexes with leucine , valine and proline , amino acid radicals were found to be similar to those detected for the γ-irradiation pure amino acid radicals formed at 77 K were converted into secondary radicals by the deamination of the amino acids. In the aluminium hydroxide complexes with glycine, histidine, serine and aspartic acid, the primary radicals produced by γ-irradiation did not decay by the deamination reaction . We conclude that the radiation chemistry of these amino acids is altered in a $AL(OH)_3$ matrix . In the complex with β-alanine , the stable organic paramagnetic centers were detected only in the precipitates microcrystalline to X-ray diffraction .

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتورة (اخر شهادة)

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Thesis Title	Some thermodynamic properties of binary mixtures of alcohol isomers and sulfolane at 298.15 K
Year	November 1999
Abstract	This thesis is concerned with the study of the refractive indices , n_D, densities ρ, and viscosities η of binary mixture of sulfolane + , n-butanol+ , sec-butanol+, iso-butanol+, tert-butanol+, n-propanol and iso-propanol at 298.15K. From experimental data, excess molar volume V^E , excess molar refractivity ΔR, excess molar viscosity Δln η and excess molar Gibbs free energy of activation of viscous flow ΔG^{*E} were calculated. From n-propanol-sulfolane and iso-propanol-sulfolane mixtures showed negative ΔR, but for n-butanol-sulfolane, sec-butanol-sulfolane, iso-butanol-sulfolane and tert-butanol-sulfolane, ΔR was positive over the whole mole fraction range , while V^E , Δlnη and ΔG^{*E} show anagative deviation the results obtained for these binary mixtures suggest two types of molecular interaction. One is the formation of new stable complexes between the sulfolane group of sulfolane and the hydroxyl group of alcohols and the second is related to the participation in destroying the mixture structure and forming a new structure. Axcess molar quantities of these binary mixtures were found to be affected directly by the position of hydroxyl group and the steric associated with the metal group.

أنموذج (أ) الخاص برسائل الماجستير **و** اطاريح **الدكتوراة (اخر** شهادة)

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Thesis Title	Synthesis and characterization of novel homologous series and polymers of 2,5-BIS[(4-Alkoxy or 4-Alkylcarboxylate phenyl)]-1,3,4-Oxadiazoles and The study of their mesomorphic properties			
Year	2001			

أنموذج (أ) الخاص برسائل الماجستير و اطاريح الدكتوراة (اخر شهادة)

Abstract	The thesis consists of three chapters; the first of which contains a background about the structural conformation of 1,3,4-oxadiazol ring and the methods of synthesis of 2,5-disubstituted-1,3,4-oxadiazole derivatives. Also includes a historical review on liquid crystals , characteristics, classification, the relation of molecular structure with liquid crystalline properties, and some application . Literature survy of previous works on liquid crystalline properties of compounds with heterocyclic units especially 1,3,4-oxadiazole were also included . The second chapter deals with the experimental procedures techniques ,purification of starting materials and their sources The third chapters deals with the characterization of all synthesized compounds using spectroscopic methods , infrared (IR) , nuclear magnetic resonance (^{1}HNMR) and mass spectroscopy (MS) . These analyses were conforming the proposal structural formula of the synthesized compounds . Also this chapter includes the characterization of liquid crystalline properties using differential scanning calorimetery (DSC) and hot –stage polarizing microscopy.