Ground and excited-state ionization behavior of 9-aminocamptothecin: An absorption and fluorescence spectral study

Introduction of amino group at the 9-position of camptothecin changes the absorption and fluorescence spectral properties of the parent drug. The results suggest that the basicity of the quinolonic nitrogen increases upon excitation.

Ashis Biswas & Joykrishna Dey*  

Hydrogen absorption and desorption reaction on the platinum electrode

Hydrogen adsorption and evolution on the platinum electrode follows two different routes giving rise to over potential deposited hydrogen and under potential deposited hydrogen. In low alkali concentration resistance is partly due to resistance of the solution and largely due to accumulation of hydrogen atoms on the surface.

M Jafarian*, M G Mahjani, M Hoseini & F Gobal  

Thermochemical and topological investigations of ternary mixtures containing ether

Molar excess volumes and ultrasonic speed of 1,3-dioxolone (i) + benzene (j) or toluene or + α- and + p-xyylene (k) ternary mixtures have been measured by dilatometer and quartz-crystal interferometer as a function of composition at 298.15K. The observed data have been analysed in terms of Graph theory and Flory theory.

V K Sharma* & Romi  

A study on partial molar volumes of some mineral salts in binary aqueous solutions of urea at various temperatures

Partial molar volumes of sodium sulphate, potassium sulphate, ammonium sulphate and magnesium sulphate have been determined in binary aqueous solutions of urea at different temperatures and salt concentrations using solution density measurements. The results reveal that ammonium sulphate and magnesium sulphate act as structure breakers while sodium sulphate and potassium sulphate act as structure makers/promoters in the present system.

M L Parmar* & D K Dhiman  

Synthesis and spectral studies of some oxovanadium(IV) and vanadium(IV) complexes

Complexes of oxovanadium(IV) with N,N'-ethylene-bis-(2-aminobenzamide), N,N'-propylene-bis-(2-aminobenzamide), N,N'-(β-phenylene)-bis-(2-aminobenzamide), N,N'-ethylene-bis-(3-carboxypropenamide), N,N'-propylene-bis-(3-carboxypropenamide) and 1,2'-hydroxy-phenyl-3-phenyl-1,3-propanedione have been prepared and characterized; oxovanadium(IV) complexes are square pyramidal while the vanadium(IV) complexes are octahedral.

S J Swamy*, A Dharma Reddy & K Bhaskar
Kinetics and mechanism of the dehydration of $\text{HCO}_3^-$ catalyzed by Zn(II) and Cu(II) complexes of novel tripod ligand

Huakuan Lin*, Xu Wang, Shourong Zhu & Yunti Chen

Soluble rhodium catalyst for carbonylation reaction: Kinetics and mechanism of diphenylurea formation

Deb Kumar Mukherjee

Kinetics and mechanism of the oxidation of some unsaturated acids by 2,2'-bipyridinium chlorochromate

Shashi Vyas, Pradeep K Sharma & Kalyan K Banerji

Kinetic and mechanistic studies on the interaction of DL-methionine with di-$\mu$-hydroxybis(bipyridyl)dipalladium(II) ion

S C Moi, A K Ghosh* & G S De

Kinetics and mechanism of oxidation of hydroxylamine hydrochloride by vanadium (V) in the presence of sodium lauryl sulphate

Rajendra Swain & G P Panigrahi*

Kinetics of oxidation of hydroxylamine hydrochloride in aqueous HClO$_4$ medium has been studied at different temperatures both in the presence and absence of SLS. Moderate binding constant value suggests that the precursor complex is bound to the micellar surface through hydrophilic binding.

Kinetics and mechanism of chlorination of phenol and substituted phenols by sodium hypochlorite in aqueous alkaline medium

B Thimme Gowda* & M C Mary
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**Notes**

Nanosecond laser flash photolysis and pulse radiolysis have been used to characterise the excited state and radical anion of di-benzyloxyisopropyl-porphyrindiol. Its interaction with DNA in aerated solution indicates that DBOIP can be used in photodynamic therapy.

Nanometer-sized ZnFe$_2$O$_4$ particles have been prepared by using polyvinyl alcohol gel method without any intermediate phase formation. The quantitative EPR measurement shows that the line width and the intensity of the Fe$^{3+}$ signals depend on the calcination temperature and the particle size.

Viscosity of multicomponent mixtures of non-electrolyte liquids have been computed using Sutherland- Wassiljewa relation. This relation yields better results than the other liquid viscosity models.

The viscosity B-coefficients for the amino acids valine, threonine, serine and glycine have been evaluated in urea-water-mixture in the temperature range 298.15 K to 318.15 K. A positive sign of both B-coefficient and its temperature derivative, i.e., $\Delta B/\Delta T$ indicates a structure-breaking ion or molecule and negative sign, a structure-making one.

The possibility of improving the quality of polyaniline films prepared under galvanostatic control in the presence and absence of sodium dodecyl sulphate has been explored using cyclic voltammetric, chronoamperometric and coulometric studies. A distinct improvement in the electrochemical characteristics of the electrodeposited polyaniline films upon immobilization of the surfactant has been observed.
1226 Synthesis and characterization of heterobimetallic isopropoxides of bismuth (III)

Maneesh K Sharma, Malti Sharma, Anirudh Singh* & Ram C Mehrotra*

1229 Synthesis and properties of mixed chelates of ruthenium containing 1,2-diimine, 1,2-iminquinone and dioxolene ligands

Kunal K Kamar, Amrita Saha, Sreebrata Goswami* & Shie-Ming Peng

1233 Synthesis, characterization and reactivity of some oxoperoxomolybdenum(VI) and oxoperoxotungsten(VI) complexes of hexamethylenetetramine

Arvind Kumar

1237 Synthesis and characterization of heterobimetallic complexes of 1,8-dihydro-1,3, 6,8, 10,13-hexaazaacyclocotadecane with Cu(II), Ni(II), Si(IV), Ge(IV) and Sn(IV) chlorides

S Tabassum *, S H Rafiqi, N Nishat, F Arjmand & S Srivastava

1240 Formation constants and molecular modeling studies on interaction of metal ions with 6-fluoro-7-(5-nonyl-1,3, 4-oxadiazol-2-yl-sulphanyl)-4-quinolone-3-carboxylic acid [QDA]

Chemical speciation and molecular mechanics calculations confirm the strong complexation behaviour of the ligand with Mg and thus support the antibacterial mechanism which involves the complexation of the ligand with Mg of bacterial DNA.

R K Sharma*, Shilpa Chopra & M Kidwai

1243 The extraction chromatographic separation of beryllium from aluminium with trioctylphosphine oxide.

A simple and rapid extraction method is described for the separation of beryllium (II) and aluminium (III) from aqueous chloride media with trioctylphosphine oxide.

M D Rokade & P M Dhadke*

Authors for correspondence are indicated by (*)