Regular Article

ROS dependent antitumour activity of photo-activated iron(III) complexes of amino acids

S Binuta Chanu, Md Kausar Raza, Samya Banerjee, Pooja Rani Mina, Dulal Musib and Mithun Roy ............................................ 9

Monomeric iron(III) complexes are explored for photo-activated antitumour activity. Photocarboxylation or photo-induced charge transfer of phenolate- O→Fe(III) has led to the generation of hydroxyl radicals causing apoptotic cell death.

Regular Article

A novel benzophenone-based colorimetric chemosensor for detecting Cu²⁺ and F⁻

Dongju Yun, Ju Byeong Chae and Cheal Kim ......................... 10

A novel selective colorimetric chemosensor ANBP, based on the combination of benzophenone group and julolidine chromophore, was designed and synthesized. Sensor ANBP showed rapid colorimetric responses toward Cu²⁺ (pale orange to pink) and F⁻ (orange to blue).

Regular Article

Determination of gallic acid using poly(glutamic acid): graphene modified electrode

J Jency Feminus, R Manikandan, S Sriman Narayanan and P N Deepa ............................................................... 11

This work describes a rapid and cost-effective analytical procedure for the determination of gallic acid. Poly-Glu/rGO electrode was fabricated by electro-polymerisation of glutamic acid on reduced graphene oxide (rGO) modified paraffin impregnated graphite electrode (PIGE). The electrode showed linear response towards gallic acid over the range of 0.03–480 µM with 0.01 µM as the detection limit for voltammetric technique and a linear range of 1–17 µM with 0.33 µM as the detection limit for amperometric technique. The proposed electrochemical sensor can be applied to detect GA in real samples with satisfactory results.

Regular Article

New organotin(IV) chlorides derived from N-(2-hydroxyphenyl) aryloxy sulfamates. Synthesis, characterization and DSC investigation

Ali Akremi and Adel Noubigh .................. 12

We synthesized three organotin complexes 3a-c and have investigated their thermal properties. The XRD powder analyses revealed tetragonal system for two complexes, whereas the third one crystallized in hexagonal system. The differential scanning calorimetric data demonstrate high stability of all the synthesized complexes.
Construction of metal oxide decorated g-C₃N₄ materials with enhanced photocatalytic performance under visible light irradiation

T Vinodkumar, P Subramanyam, K V Ashok Kumar, Benjaram M Reddy and CH Subrahmanyam. .......................... 13

The WMCN materials exhibited superior photocatalytic performance than CMCN and bare g-C₃N₄ materials due to the existence of synergism between WO₃ and g-C₃N₄.

An organometallic ruthenium nanocluster with conjugated aromatic ligand skeleton for explosive sensing

Pranav Dave, Bhavesh Agrawal, Jaydev Thakarda, Sagar Bhowmik and Prasenjit Maity ................................. 14

An organometallic ruthenium nanocluster with ~8.6 kDa mol. wt. was synthesized, where aromatic phenanthrene ligands were inter-molecularly conjugated through Ru core. The Ru nanocluster showed excellent sensing performance for detection of nitroaromatic explosive molecules through luminescence quenching strategy.

Quantum chemical studies of structures and spin Hamiltonian parameters of iron transferrin using isolated and embedded clusters models

Lokpati Mishra and Mahesh Sundararajan .......................... 15

Theoretical spectroscopic based calculations reveal that Tyr188 is bound to iron in transferrin at physiological pH.

Molecular dynamics based antimicrobial activity descriptors for synthetic cationic peptides

Malay Ranjan Biswal, Sandhya Rai and Meher K Prakash. .......................... 16

The dynamic properties of peptides calculated from molecular dynamics simulation are used as descriptors for the artificial neural network to predict the biological activity of the antimicrobial peptides.
Correction

Correction to: ROS dependent antitumour activity of photo-activated iron(III) complexes of amino acids

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For details, see the paper by S Binita Chanu, Md Kausar Raza, Samya Banerjee, Pooja Rani Mina, Dulal Musib and Mithun Roy (Article ID: 9)