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GIANT BENZENOID HYDROCARBONS. SUPERNAPHTHALENE RESONANCE ENERGY*

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Abstract: We calculated molecular resonance energy for "supernaphthalene," a recently reported giant benzenoid which can be viewed as obtained from two fused "superbenzenes" (hexa-peri-hexabenzocoronenes). The results fully justify Clar's qualitative characterization of such benzenoids as composed from disjoint " π -sextets." Our approach supplements Clar's qualitative characterization of such molecule by giving it a quantitative characterization.

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MOLECULAR PATHOLOGY OF CYP21 GENES - ASSOCIATIONS WITH HLA ANTIGENS AND DISEASE PHENOTYPES

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Abstract. CYP21 gene and a highly similar pseudogene CYP21P are located within HLA class III region on chromosome 6p21.3. Due to high sequence similarity gene deletions, duplications and conversions are facilitated between adjacent CYP21 genes. Inherited defects of CYP21 gene cause various degrees of steroid 21-hydroxylase deficiency. Partial loss of 21-hydroxylase activity results in nonclassical CAH which is clinically indistinguishable from functional hyperandrogenism (FH). Characteristic HLA haplotypes were reported to be associated with CAH in different populations. The aims of our study were to characterise mutations in CYP21 gene in CAH patients and to find out if CYP21 gene mutations also contribute to the clinical phenotype in FH. We also wished to find out if any specific HLA antigens are associated with altered CYP21 genes. 6 CAH patients, 88 FH women and 58 healthy controls were included in the study. We found causative mutations in all CAH patients. ACTH stimulation, HLA typing and molecular analysis of CYP21 gene were used to define possible carriers of CAH in FH patients. High frequency of heterozygous CYP21 deletions (7/64 patients), CYP21P deletions (15/64) and CYP21P duplications (3/64) was observed in FH patients. The frequency of CYP21 point mutations carriers was significantly higher in FH patients (4/83) than in healthy controls (0/58, $p = 0,048$).

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PERFLUORO COMPOUNDS AS INHIBITORS OF THE CORROSION OF ZINC IN KOH SOLUTION

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Abstract

Environmental pollution with mercury resulting from waste batteries has stimulated numerous investigations aimed at eliminating this element from zinc anodes in zinc batteries. The main task of a mercury reduction programme is to replace mercury by a substance that conforms to environmental requirements and which reduces hydrogen gassing without impeding zinc dissolution. In the present study several perfluoro organic compounds were tested as possible candidates for inhibition of hydrogen evolution in zinc alkaline batteries. The addition of an organic compound was tested for four different types of zinc powder containing various minor elements. Gas evolution and electrochemical experiments were used in the study. Based on these experiments, the compound acting as the best inhibitor of hydrogen evolution was selected.

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IN-SITU FTIR SPECTROMETRY FOR THE SOLID/SOLUTION INTERFACE

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ABSTRACT

The use of infrared (IR) reflection measurements performed at near-grazing incidence angle conditions (NGIA IR) is presented. It enables the detection of vibrational spectra of (i) adsorbed species formed on the electrode/electrolyte interface after the application of potential and (ii) through the vibrational spectra changes of electrochromic films to bring knowledge about the structural modifications which accompany the insertion of ions from the electrolyte and electrons from the conductive electrode. Principles of the NGIA IR reflection spectroscopy, its benefits to make in-situ IR spectroelectrochemical measurement and drawbacks are discussed. Some examples of IR spectroelectrochemical measurements are given for organic and inorganic films with electrochromic properties.

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O NEKATERIH TEŽAVAH PRI UVELJAVLJANJU SLOVENSKE TEHNIŠKE TERMINOLOGIJE*

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V referatu so prikazane nekatere težave pri uveljavljanju slovenske tehniške terminologije. Ena teh je nenadzorovan vdor angleških izrazov v jezik zaradi naglega razvoja tehnike pa tudi zaradi podcenjevalnega odnosa do slovenskega jezika in njegovih izraznih možnosti, na kar pogosto naletimo med strokovnjaki. K uveljavljanju slovenske tehniške terminologije bi lahko veliko prispevala tudi država z ustrežnejšo znanstveno politiko, ki bi v nasprotju z današnjo priznala domačemu strokovnemu tisku mesto, ki mu gre. Da bi preprečili nastajanje vzporednih strokovnih izrazov za iste pojme v različnih raziskovalnih središčih, bi bila potrebna določena koordinacija terminološkega dela. Za to nalogo bi bila najprimernejša osrednja komisija za tehniško terminologijo pri ZRC SAZU.