MODERN UNSTANDARDIZED METHODS USED TO EVALUATE THE LIPID OXIDATION

- Review -

METODE MODERNE NESTANDARDIZATE FOLOSITE PENTRU EVALUAREA OXIDĂRII LIPIDELOR

- Recenzie -

SZABO Maria-Raluca*, IDIȚOIU Cornelia*, LUPEA Alfa-Xenia**

* "Aurel Vlaicu" University, Bd. Revoluției nr. 81, Arad
** "Politehnica" University, Timişoara

Abstract

This paper continues our previous article[1] and it is a review of the main unstandardized methods used to pursuit the food autooxidation process.

A large number of new, modern and faster methods than the standardized ones are presented, such as: chromatographic, spectrophotometric, electrochemical, thermal analysis methods, etc.

Especially important are the methods which can be applied « in situ » because many times processes are evolving different *in vivo* versus *in vitro* conditions.

THE CATALYST PROPERTIES INFLUENCE ON SUCROSE HYDROLYSIS KINETIC STUDYED BY MEANS DSC METHOD

INFLUENȚA PROPRIETĂȚILOR CATALIZATORILOR ASUPRA CINETICII REACȚIEI DE HIDROLIZĂ A ZAHAROZEI INVESTIGATĂ PRIN METODA DSC

CHAMBRE Dorina , IDIȚOIU Cornelia, SZABO Maria –Raluca

"Aurel Vlaicu" University, Bd. Revoluției Nr.81, Arad

Abstract

This paper presents the influence of the catalysts properties (cross-linking degree, gravimetric exchange capacity, granulation, porous nature of the polymeric matrix, swelling time) on the kinetic of sucrose acid hydrolysis of heterogeneous catalyses with a series of carboxylic cationites of Purolite type. The values of the afferent kinetic catalytic constants, k_{cat}, were evaluated from DSC measurements.

Keywords: carboxylic cationites, heterogeneous catalysts, sucrose hydrolysis, kinetic catalytic constants, reaction DSC.

KINETIC ESTIMATION METHODS FOR NON-ISOTHERMAL DEHYDRATION OF CARBOXYLIC CATIONITES
Review

METODE DE EVALUARE A PARAMETRILOR CINETICI NEIZOTERMI PENTRU DESHIDRATAREA CATIONIȚILOR CARBOXILICI
Recenzie

CHAMBRE Dorina , IDIȚOIU Cornelia, SZABO Maria –Raluca

"Aurel Vlaicu" University, Bd. Revoluției Nr.81, Arad

Abstract

The main methods for the evaluation of the kinetic parameters (E – activation energy, A – pre-exponential factor and n- reaction order) from curves recorded in heterogeneous carboxilic cationites dehydration experiments (TG, DTG) under nonisothermal conditions are summarised.

CUANTOCHEMICAL STUDIES ON THE STABILITY OF THE IONS FORMED IN THE MASS SPECTROMETER. I. TETRACHLOROBIPHENYLS IONS

STUDIUL STABILITATII IONILOR FORMATI IN SPECTROMETRUL DE MASA PRIN METODE CUANTOCHIMICE I. IONI AI TETRACLOROBIFENILILOR

DINCA Nicolae [*], SISU Eugen [**], GROSU Viorica [***]

[*] "Aurel Vlaicu" University of Arad, Bd. Revolutiei No.81, RO-310130 Arad, Romania, <dincanicolae@yahoo.com>
[**] Institute of Chemistry Timisoara, Bv.Mihai Viteazul No.24, RO-300223 Timisoara
[***] "Gheorghe Lazar" Pedagogical National College, Cluj-Napoca

Abstract

In this paper, the semi empirical methods AM1 and PM3 are used to calculate the heats of formation for different tetra-CBs ions resulted in the mass spectrometer, and the values are correlated with their differential mass spectrum. The calculus methodologies for the heat of formation and for the ions stability are also presented.

GC/MS METHOD FOR QUANTIFICATION OF PYRAZINES GENERATED BY MAILLARD SYSTEMS IN MILD CONDITIONS

CUANTIFICAREA PIRAZINELOR GENERATE ÎN SISTEME MAILLARD ÎN CONDIȚII BLÂNDE CU AJUTORUL METODEI CG/SM

ELISEI Alina-Mihaela*, LEONTE Mircea*

*"Dunărea de Jos" University, Galati

Abstract

This study uses the GC/MS method to determine whether cysteine (amino acid) reacts with methylglyoxal (a dicarbonyl compound, from sugar degradation) in a primarily aqueous medium, at low temperature and low pH (~pH 3.5) leading to the formation of alkylpyrazines. In particular, 2-methylpyrazine, 2,5-dimethylpyrazine and 2,3,5-trimethylpyrazine are examined.

THE STUDY OF THE INFLUENCE OF ENZYMATIC PRETREATMENT ON THE COTTON DYEING

STUDIUL INFLUENTEI PRETRATARII ENZIMATICE ASUPRA VOPSIRII BUMBACULUI

FOGORASI Magdalena, STANESCU Michaela Dina, DOCHIA Mihaela

"Aurel Vlaicu" University, Bd. Revoluției Nr. 81, Arad

Abstract

The action of a Cellulase on cotton knitted fabric was studied in order to obtain more information concerning the influence of the enzyme on the color of the fabric. The enzymatic treatments have been performed prior to the dyeing with a reactive dye. The experimental conditions were in agreement with the enzyme demands (pH, temperature).

The influence of the enzyme upon the color attributes, lightness, chroma and hue has been studied by measuring the light remission. The tristimulus value, the $L^*a^*b^*$ coordinates as well as the color differences using the CIELAB equation, have been calculated.

THE RELATION BETWEEN METALS, LIGANDS AND CANCER
- Review -

RELAȚIA DINTRE METALE, LIGANZI ŞI CANCER

GABRUŞ Iuliu Radu, BODESCU Adina Maria, RAȚ Mirabela Elena

„Aurel Vlaicu" University, Bd. Revoluției nr.81, Arad

Abstract

Although the human body is but 3% metals, life depends upon these elments far more than this figure suggests.For example, the transition series metals, even though some are present in only trace amounts, generally appear in the active centers of enzymes that catalyze substrates to form aggregate molecules, and so an understanding of the properties of multicomponent systems requires a knowledge not only of the metal complexes that marshall their conjoining.

BIOSYNTHESIS OF THE ATMOSPHERIC MOLECULAR NITROGEN BY SYMBIOTIC PROCESSES AND UNDER THE INFLUENCE OF NITROGEN FERTILIZERS

BIOSINTEZA AZOTULUI MOLECULAR ATMOSFERIC PRIN PROCESE SIMBIOTICE SUB INFLUENȚA ÎNGRĂȘĂMINTELOR CU AZOT

HĂLMĂGEAN Lucian, CANȚĂR Liliana

"Aurel Vlaicu" University, Bd. Revoluției Nr.81, Arad

Abstract

The scientific researches currently try to develop highly efficient nitrogen fixation systems and the maximization of the nitrogen entries in the agro-eco-systems by the global increase of the biologically fixed nitrogen. For this purpose in Arad agro-ecological area were carried a range of researches regarding nitrogen biosynthesis by symbiotic processes and under the influence of nitrogen fertilizers.

COMPARATIVE ANALYSIS BETWEEN REFRESHING BEVERAGES AND FRUIT JUICES

ANALIZĂ COMPARATIVĂ ÎNTRE BĂUTURILE RĂCORITOARE ŞI SUCURILE DE FRUCTE

IANCHICI Raul, ZDREMȚAN Monica

„Aurel Vlaicu" University, Bd. Revoluției nr. 81, Arad

Abstract

Many times refreshing beverages are mistaken with the fruit juices. The differences between the two are though fundamental, from both the point of view of the technological process of making and the point of view of the chemical composition and therefore its nutritional value.

In this paperwork we have tried to compare the nutritional value of several refreshing beverages, both with and without CO_2, with several fruit juices. The results show clearly that fruit juices can reach high levels for the nutritional values while refreshing beverages have low nutritional values, in spite of their similar sensorial properties.

THE THERMAL DECOMPOSITION AND THE I.R. ANALYSIS OF SOME CYSTINE COMPLEXES OF NI (II) AND MN (II)

STUDIUL DESCOMPUNERII TERMICE SI ANALIZA IR A UNOR COMPLECŞI AI CISTINEI CU NI (II) ŞI MN (II)

PANCAN Ioan Bujor, GABRUŞ Iuliu-Radu

„Aurel Vlaicu" University, Bd. Revoluției nr. 81, Arad

Abstract

Nickel (II) and manganese (II) form with cystine 1:1complexes which were isolated in solid state. Infrared spectra suggest coordination of carboxylic and amino groups of cystine to the metal. Diffuse reflectance spectra and magnetic moments indicate tetrahedral coordination of the two metals. The thermal decomposition of the two complexes was investigated by means of TG and TDA techniques.

SALICYLAMIDE DERIVATIVES WITH ANTIMICROBIAL ACTIVITY

DERIVAȚI AI SALICILAMIDEI CU ACȚIUNE ANTIMICROBIANA

POPESCU Iuliana*, LUPEA Alfa Xenia**, HĂDĂRUGĂ I. Daniel**,
PADURE Mirabela**, HADARUGA G. Nicoleta***

* Banat's University of Agricultural Sciences and Veterinary Medicine, 119 C. Aradului, 300645 Timişoara, Romania, Faculty of Agriculture, Chemistry and Biochemistry Department
** "Politehnica" University of Timişoara, 2 P-ța Victoriei, 300006 Timişoara, Romania Faculty of Industrial Chemistry and Environmental Engineering, Organic Chemistry and Technology Department
*** Banat's University of Agricultural Sciences and Veterinary Medicine, 119 C. Aradului, 300645 Timişoara, Romania, Faculty of Food Processing Technology, Food Quality Department

Abstract:

In the present paper is followed the achievement of mathematical patterns which describe antimicrobial activity of new salicylamide derivatives (substituted) with structural variations at amidic group, hydroxilic group and on aromatic nucleus.

We analysed the importance of constitutional and steric parameters for antimicrobial activity.

STUDY OF A WALL PAINTING MICROBIOTA

STUDIUL MICROBIOTEI UNEI PICTURI MURALE

RADU Dana

"Aurel Vlaicu" University, Bd. Revoluției Nr. 81, Arad

Abstract

The present study refers to the microbiota of the interior walls of the Serbian Church from Arad as well as the identification of the most suitable substances to be used in controlling the development of the saprophytic microorganisms that alter the painted surface.

AMBIENT MEDIUM INFLUENCE ON THE FOOD DEGRADATION KINETICS

INFLUENȚA MEDIULUI ÎNCONJURĂTOR ASUPRA CINETICII DE DEGRADARE A ALIMENTELOR

SZABO Maria-Raluca, IDIȚOIU Cornelia, CHAMBRE Dorina

"Aurel Vlaicu" University of Arad, Bd. Revolutiei No.81

Abstract

Following our previous articles[1,2], in this paper we present the influence of some environmental factors on the food degradation processes and upon their kinetics.

CHEMICAL STANDARDIZED METHODS USED TO EVALUATE THE LIPID OXIDATION

METODE CHIMICE STANDARDIZATE UTILIZATE PENTRU EVALUAREA OXIDĂRII LIPIDELOR

SZABO Maria-Raluca*, IDIȚOIU Cornelia*, LUPEA Alfa-Xenia**

* "Aurel Vlaicu" University of Arad, Bd. Revolutiei No.81
** "Politehnica" University, Timişoara

Abstract

This paper describes the principles of the romanian standardized methods used to determine the lipid oxidation on national level (STAS 145/22-74, STAS 9065/10-75, STAS 145-67 and STAS 145/1-78) and on international level (ISO 3960:2001, ISO 6885:1998, ISO 6886:1996, ISO 3656:2002 and ISO 3961:1996) standardised.