

# iz hrvatskih znanstvenih časopisa

## SADRŽAJI RECENTNIH BROJEVA

### PERIODICUM BIOLOGORUM

An Interdisciplinary International Journal of the Societas Scientiarum Naturalium Croatica established 1885

CONTENTS Vol. 111 No 1 P 1–149 Zagreb, February 2009

#### INTRODUCTION

1 Krunoslav Capak and Branimir Čvorišćec

#### OVERVIEWS

5 Trends and challenges in preventive medicine in European Union countries.

Comment on the state in Croatia

*Ljiljana Majnarić-Trtica, Branko Vitale, Luka Kovačić and Mladen Martinis*

13 Environmental health in Croatia – current status and perspectives

*Krunoslav Capak and Goranka Petrović*

21 European environment and health process and its impact on the environmental health policy in Croatia

*Krunoslav Capak and Goranka Petrović*

29 Survey on working conditions in the Republic of Croatia

*Ana Bogadi-Šare and Marija Zavalčić*

37 Indoor air pollution and effects on human health

*Eugenija Žuškin, E. Neil Schachter, Jadranka Mustajbegović, Jasna Pucarín-Cvetković, Jagoda Doko-Jelinić and Branka Mucić-Pucić*

#### SHORT REVIEWS

41 Significance of nutrition in respiratory allergic diseases: a review of scientific knowledge

*Ivana Sabolić Pipinić, Jelena Macan and Božica Kanceljak-Macan*

51 Nutrigenetics and colon cancer

*Mladen Jokić and Sanja Kapitanović*

55 Small molecule approaches to regulation of gene transcription

*Josipa Pešut, Branka Jeličić and Mary Sopta*

59 Molecular mechanism in  $\beta$ -cell development: the role of PDX1, Ngn3 and Pax4 proteins

*Marina Korolija Marijana, Popović Hadžija and Mirko Hadžija*

#### ORIGINAL SCIENTIFIC PAPERS

65 Estimation of biologically effective uv radiation in Croatia

*Gordana Pehneć, Leo Klasinc and Glenda Šorgo*

73 Environmental performance of industrial companies, sites, installations and production processes

*C. Block, J. Van Caneghem and C. Vandecasteele*

79 Sick building syndrome. Do we live and work in unhealthy environment?

*Milica Gomzi and Jasminka Bobić*

85 The alkaline comet assay as a biomarker of DNA-damage encountered in workers engaged in cigarette manufacturing

*Vera Garaj-Vrhovac, Goran Gajski and Vlatka Brumen*

91 Lead as an environmental cardiovascular risk factor

*A. Omelchenko*

99 How to set up a public health campaign: croatian example of environmental mercury exposure

*Nataša Janev and Ksenija Vitale*

107 Epidemiology of Norovirus in Croatia – Public Health Impact

*Andreja Barišin and Sunčica Ljubin Sternak*

113 Propolis and its flavonoid compounds cause cytotoxicity on human urinary bladder transitional cell carcinoma in primary culture

*Nada Oršolić, Damir Štajcar and Ivan Bašić*

123 Umbilical serum tumor necrosis factor- $\alpha$  and interleukin-6 in chorioamnionitis

*Darka Kordić, Vesna Košec and Josip Jukač*

129 Expression of serotonin receptor subtypes in rat brain and astrocyte cell cultures: an age- and tissue-dependent process

*David Osredkar and Mojca Kržan*

137 Better life and business based on the cell, brain, mind, sex laws: LIFE BIZ

*Branko Souček*

#### BOOK REVIEW

145 "Metode u molekularnoj biologiji" – *Methods in Molecular Biology*: a journey from the bench to a comprehensive textbook

*Maja Herak Bosnar*

#### CROATIAN SCIENTIFIC SOCIETIES

149 Bilješka o radu Hrvatskog društva za zdravstvenu ekologiju (HDZE) Hrvatskog liječničkog zbora (HLZ) u razdoblju od osnivanja 2000 do 2008 godine

*Branimir Čvorišćec, Berislav Skupnjak and Krunoslav Capak*

## Food Technology and Biotechnology

Journal of the Faculty of Food Technology and Biotechnology, University of Zagreb, Zagreb, Croatia

---

Food Technol. Biotechnol.      Vol. 47      No. 1      1–106      Zagreb, January–March 2009

---

### ORIGINAL SCIENTIFIC PAPERS

- Anita Rywińska, Waldemar Rymowicz, Barbara Żarowska and Maria Wojtatowicz*  
 Biosynthesis of Citric Acid from Glycerol by Acetate Mutants of *Yarrowia lipolytica* in Fed-Batch Fermentation ..... 1
- Bhasker C. Behera, Neeraj Verma, Anjali Sonone and Urmila Makhija*  
 Optimization of Culture Conditions for Lichen *Usnea ghattensis* G. Awasthi to Increase Biomass and Antioxidant Metabolite Production ..... 7
- Annapurna Kumari, Paramita Mahapatra, Vijay Kumar Garlapati, Rintu Banerjee and Swagata Dasgupta*  
 Lipase Mediated Isoamyl Acetate Synthesis in Solvent Free System Using Vinyl Acetate as Acyl Donor ..... 13
- Oscar M. Portilla-Rivera, Simón J. Téllez-Luis, José A. Ramírez de León and Manuel Vázquez*  
 Production of Microbial Transglutaminase on Media Made from Sugar Cane Molasses and Glycerol..... 19
- Guohong Gong, Zhiming Zheng, Hua Chen, Chengling Yuan, Peng Wang, Liming Yao and Zengliang Yu*  
 Enhanced Production of Surfactin by *Bacillus subtilis* E8 Mutant Obtained by Ion Beam Implantation ..... 27
- Lucrezia Sergio, Angela Cardinali, Angela De Paola and Donato Di Venere*  
 Biochemical Properties of Soluble and Bound Peroxidases from Artichoke Heads and Leaves ..... 32
- Jing Wang, Xiaoping Yuan, Baoguo Sun, Yuan Tian and Yanping Cao*  
 Scavenging Activity of Enzymatic Hydrolysates from Wheat Bran ..... 39
- Kah Hui Wong, Vikineswary Sabaratnam, Noorlidah Abdullah, Umah Rani Kuppusamy and Murali Naidu*  
 Effects of Cultivation Techniques and Processing on Antimicrobial and Antioxidant Activities of Extracts of *Hericium erinaceus* (Bull.: Fr.) Pers. Extracts ..... 47
- Eulalia J. Borowska, Barbara Mazur, Renata Gadzała Kopciuch and Bogusław Buszewski*  
 Polyphenol, Anthocyanin and Resveratrol Mass Fractions and Antioxidant Properties of Cranberry Cultivars..... 56
- Zhong-Hua Yang, Rong Zeng, Yu Wang, Xian-Ke Li, Zao-Sheng Lv, Bin Lai, Shu-Qin Yang and Jian-Guo Liao*  
 Tolerance of Immobilized Yeast Cells in Imidazolium-Based Ionic Liquids ..... 62
- Jelka Pleadin, Tihomira Gojmerac, Igor Bratoš, Zoran Lipej, Dinko Novosel and Ana Vulić*  
 Clenbuterol Residues in Plasma and Urine Samples of Food-Producing Pigs During and After Subchronic Exposure to a Growth-Promoting Dose ..... 67
- Eyjólfur Reynisson, Birna Guðbjörnsdóttir, Viggo Þór Marteinsson and Guðmundur Óli Hreggvðsson*  
 Decontamination Efficiency of Fish Bacterial Flora from Processing Surfaces..... 75

### PRELIMINARY COMMUNICATION

- Svetlana Nikolic, Ljiljana Mojovic, Dušanka Pejin, Marica Rakin and Vesna Vucurovic*  
 Improvement of Ethanol Fermentation of Corn Semolina Hydrolyzates with Immobilized Yeast by Medium Supplementation ..... 83

### SCIENTIFIC NOTES

- Chenyan Zhou, Yongtao Wang, Minchen Wu, Wu Wang and Dongfeng Li*  
 Heterologous Expression of Xylanase II from *Aspergillus usarii* in *Pichia pastoris* ..... 90
- Joanna Berłowska, Dorota Kregiel and Wojciech Ambroziak*  
 Pyruvate Decarboxylase Activity Assay *in situ* of Different Industrial Yeast Strains ..... 96

BOOK REVIEW .....101

INSTRUCTIONS TO AUTHORS.....102

**CROATICA CHEMICA ACTA**

Published by the Croatian Chemical Society

Croat. Chem. Acta

Vol. 82 No. 1, 2009

Zagreb, April 2009

- Acidity Enhancement of the Cyclopentadiene Cycle by  $\text{PH}_2$  and  $\text{AsH}_2$  Substitution  
... Marcela Hurtado, Otilia Mo, Manuel Yanez, Jean-Claude Guillemin
- Gaseous  $[\text{C}_n\text{H}_{2n+1}]^+$  1,3-Diphenylpropane Ion/Neutral Complexes Containing Alkyl Cations  
of Different Acidity and Hydride Ion Affinity  
... Carsten Matthias, Dietmar Kuck
- Predicting the Acidities of Substituted Phenols using Electrostatic Potential at Nuclei  
... Maria Dimitrova, Boris Galabov
- Acidifying Effect of an N-Oxide Group – A Useful Motif in Enhancing Acidity towards Superacidic Values  
... Robert Vianello
- Neutral Intramolecular Hydrogen-Bonded Bases  
... Zhixin Tian, Alireza Fattahi, Lev Lis, Steven R. Kass
- Gas-phase basicity of glycine today  
... Guy Bouchoux, Ru Xuan Chia
- Proton affinities of didehydroporphyrin and subporphyrin in ground and excited states obtained  
by quantum chemical calculations  
... Zoran Glasovac, Mario Vazdar, Davor Margetić
- Proton and lithium cation binding to some beta-diketones. A theoretical study.  
... Peeter Burk, Kristo Taul, Jaana Tammiku-Taul
- Assembling screws Large preference for the homochiral combination in the proton-bound  
dimers of 1-aza[6]helicene in the gas phase  
... Jiri Misek, Milos Tichy, Irena G. Stara, Ivo Stary, Jana Roithova, Detlef Schroeder
- Proton transfer chemistry in the gas phase. Is a spontaneous “neutralization” reaction a myth or a reality?  
... Ewa D. Raczynska, Jean-Francois Gal, Pierre-Charles Maria, Malgorzata Szelag
- Ultrafast excited-state proton transfer processes energy surfaces and on-the-fly dynamics simulations  
... Adelia J. A. Aquino, F. Plasser, M. Barbatti, H. Lischka
- DFT Studies on Molecular and Electronic Structures of Cationic Carbene Complexes  
 $[\text{L}_2(\text{n}5\text{-C}_5\text{H}_5)\text{Fe}=\text{CR}_2] + (\text{L} = \text{CO}, \text{PH}_3, \text{dhpe}, \text{PPh}_3; \text{R} = \text{H}, \text{F}, \text{CH}_3)$   
... Isabella Hyla-Kryspin, Christian Muck-Lichtenfeld, Stefan Grimme
- Theoretical study of doubly charged  $\text{X-H}_2\text{O}$  and  $\text{X-NH}_3$  ( $\text{X} = \text{Si}, \text{Ge}, \text{Sn}, \text{Pb}$ ) molecular ions  
... Pablo Lopez-Tarifa, Fernando Martin, Manuel Yanez, Manuel Alcami
- Substituent Constants of the Rotated Nitro Group. The Interplay Between the Substituent Effect  
of a Rotated  $-\text{NO}_2$  Group and H-Bonds Affecting  $\pi$ -Electron Delocalization in 4-Nitrophenol  
and 4-Nitrophenolate Complexes a B3LYP/6-311+G\*\* Study  
... Michal A. Dobrowolski, Tadeusz M. Krygowski, Michal K. Cyranski
- Substituent effects on B–N bonding and coupling constants in five-membered rings  
 $\text{N}_3\text{B}_2\text{H}_4\text{X}$  and  $\text{N}_2\text{B}_3\text{H}_4\text{X}$ , for  $\text{X} = \text{H}, \text{F}$ , and  $\text{Li}$   
... Janet E. Del Bene, Otilia Mo, Manuel Yanez
- Reformulating the Woodward-Hoffmann Rules in a Conceptual Density Functional Theory Context:  
the Case of Sigmatropic Reactions  
... Nick Sablon, Frank de Proft, Paul Geerlings

- MANUSCRIPT TITLE: The Energetics of Halogenated Ethylenes (Ethyne)s and 1,3-Butadienes (Butadiynes)  
A Computational and Conceptual Study of Substituent Effects and "Dimerization"  
... Carol A. Deakynne, Lawrence H. Warfel IV, Haunani M. Thomas, Dhananjaya Nauduri,  
Toyosi Esther A. Ajibowo, Nicole J. Carbonaro, Alec G. Simpson, Joel F. Liebman
- Barriers about double carbon-nitrogen bond in imine derivatives (aldimines, oximes, hydrazones, azines)  
... Fernando Blanco, Ibon Alkorta, Jose Elguero
- Covalent Character of Hydrogen Bonds Enhanced by pi-Electron Delocalization  
... Slawomir J. Grabowski
- Bonding, reactivity and aromaticity in some beryllocene derivatives  
... Soma Duley, Puja Goyal, Santanab Giri, Pratim Kumar Chattaraj
- Heptacarbonyldiosmium and Hexacarbonyldiosmium Two Highly Unsaturated Binuclear Osmium Carbonyls  
... Bing Xu, Qian-Shu Li, Yaoming Xie, R. Bruce King, Henry F. Schaefer III
- The Effects of *N*-Heterocyclic Ligands on the Nature of the Ru-NO Bond in Ruthenium Tetraammine Nitrosyl Complexes  
... Giovanni F. Caramori, Gernot Frenking
- Comparison of gold bonding with mercury bonding  
... Elfi Kraka, Dieter Cremer
- Two Approximate Expressions for the Magnetic Exchange Parameter for an O–Cu–Cu–O  
Component of Cu(II) Carboxylate Dimers  
... Richard D. Harcourt
- Dipole polarizabilities of fluorinated hydrocarbons  
... Ladislav Ehn, Ivan Cernusak, Pavel Neogrady
- On the Angular Independence of Sets of Atomic Orbitals  
... Joel F. Liebman, Zelek S. Herman
- Molecular Surfaces, van der Waals Radii and Electrostatic Potentials in Relation to Noncovalent Interactions  
... Jane S. Murray, Peter Politzer
- Theoretical Aspects of Molecular Recognition  
... Veronika Harmat, Gabor Naray-Szabo
- The Importance of Step Control in Optimization Methods  
... Jorge M. del Campo, Andreas M. Koster
- Solvent effects on the Stereoselectivity of Methyl Acrylate, Methyl Methacrylate and Methyl *trans*-Crotonate  
with Cyclopentadiene A Computational Study  
... Manoj K. Kesharwani, Bishwajit Ganguly
- Amlodipine benzenesulfonate A mechanistic investigation of its industrial preparation via detritylation  
of *N*-tritylamlopidine and related NMR studies  
... Borut Furlan, Simona Golic Grdadolnik, Stanko Hocevar, Darko Kocjan, Janez Levec,  
Howard Maskill, Hana Navratilova, Jiri Pospisil, Milan Potacek, Uros Urleb, Janko Zmitek
- Predictions of toxicity to *Chlorella vulgaris* and the use of momentum-space descriptors  
... Jabir H.A. Al-Fahemi, David L. Cooper, Neil L. Allan
- Carcinogenicity of Styrene Oxide Calculation of Chemical Reactivity  
... Mojca Krzan, Janez Mavri
- High Resistance Compensation Method for Measurement of Surface Potential  
... Nikola Kallay, Tajana Preocanin, Atidja Selmani, Filip Supljika
- Analysis of summer 2006 ozone pollution in Zagreb  
... Gordana Pehneć, Leo Klasinc, Glenda Šorgo, Vladimira Vadjjić

## Chemical and Biochemical Engineering Quarterly

Chem. Bio. Eng. Q.

Vol. 23

No 1

P 1–126

Zagreb, March 2009

**Editorial****ORIGINAL SCIENTIFIC PAPERS**

Experimental Determination of Surface Stress Changes in Electrochemical Systems – Possibilities and Pitfalls .....	1
<i>G. G. Láng, N. S. Sas, and S. Vesztergom</i>	
Differential Capacity of Bromide Anions Adsorption onto Ag(100) in the Absence, and onto Ag(poly) in the Presence of NaClO <sub>4</sub> .....	11
<i>V. D. Jović</i>	
The Study of Capacitance Change during Electrolyte Penetration through Carbon-Supported Hydrous Ruthenium Oxide Prepared by the Sol-Gel Procedure .....	23
<i>V. V. Panić, A. B. Dekanski, V. B. Mišković-Stanković, and B. Ž. Nikolić</i>	
The Advantages of Using an Electrochemical Quartz Nanobalance to Study the Electrochemical Conversions of Solid Microparticles .....	31
<i>G. Inzelt and A. Róka</i>	
Corrosion Behavior of Composite Coatings Obtained by Electrolytic Codeposition of Copper with Al <sub>2</sub> O <sub>3</sub> Nanoparticles .....	43
<i>I. Zamblau, S. Varvara, C. Bulea, and L. M. Muresan</i>	
Electrochemical and Spectroscopic Study of Benzotriazole Films Formed on Copper, Copper-zinc Alloys and Zinc in Chloride Solution .....	53
<i>I. Milošev and T. Kosec</i>	
Electrochemical and AFM Study of Corrosion Inhibition with Respect to Application Method .....	61
<i>H. Otmačić Čurković, K. Marušić, E. Stupnišek-Lisac, and J. Telegdi</i>	
Modeling of Biochemical Nitrate Reduction in Constant Electric Field .....	67
<i>Ts. Parvanova-Mancheva, V. Beschkov, and Ts. Sapundzhiev</i>	
Glucose Electrooxidation for Biofuel Cell Applications .....	77
<i>I. Ivanov, T. R. Vidaković, and K. Sundmacher</i>	
Amperometric Adhesion Signals of Liposomes, Cells and Droplets .....	87
<i>N. Ivošević DeNardis, V. Žutić, V. Svetličić, and R. Frkanec</i>	
A Simple But Highly Selective Electrochemical Sensor for Dopamine .....	93
<i>R. Doyle, C. B. Breslin, and A. D. Rooney</i>	
Electrochemical and STM Study of $\alpha,\omega$ -alkanedithiols Self-assembled Monolayers .....	99
<i>V. C. Ferreira, F. Silva, and L. M. Abrantes</i>	
Electrolytes Based on Primary Ammonium Salts as Ionic Liquids for PEMFC-membranes .....	107
<i>Maha Hanna, J.-C. Lepretre, and J.-Y. Sanchez</i>	