



ROMÂNIA  
UNIVERSITATEA BABEŞ-BOLYAI CLUJ-NAPOCA

Str. Mihail Kogălniceanu, nr. 1, 400084 Cluj-Napoca  
Tel. (00) 40 - 264 - 40.53.00\*; 40.53.01; 40.53.02 ; 40.53.22  
Fax: 40 - 264 - 59.19.06  
E-mail: [staff@staff.ubbcluj.ro](mailto:staff@staff.ubbcluj.ro)

RECTORATUL

## Universitatea Babeş-Bolyai Competiția Excelenței 2010

### Dosar individual

**Notă: Toate datele se referă la perioada 2005-2009**

Nume, prenume, grad did.	CONF. DR. ING. PAIZS CSABA
Facultatea, Catedra	Chimie si inginerie chimica, Catedra de biochimie si inginerie biochimica
Domeniul științific	Inginerie chimica
Adresa paginii web personale	<a href="http://www.chem.ubbcluj.ro/catedre/biochimie-inginerie.html">http://www.chem.ubbcluj.ro/catedre/biochimie-inginerie.html</a>
Adresa e-mail	<a href="mailto:paizs@chem.ubbcluj.ro">paizs@chem.ubbcluj.ro</a>

### Criteriaul I – Output

**1. Articole științifice publicate în reviste indexate ISI (cu menționare factorului de impact în cazul celor cotate)**

Titlu	Autori	Revista	Factor impact
NIR surface enhanced Raman spectroscopy and bands assignment by DFT calculations of non-natural $\beta$ -amino acids	Iliescu, T., Maniu, D., Chiș, V., Irimie, F. D., Paizs, Cs., Toșa, M.	Chemical Physics <b>2005</b> , 310, 189-199.	1.961
Inhibition of Histidine Ammonia-Lyase by Heteroaryl-alanines and Acrylates.	Katona, A., Toșa, M. I., Paizs, Cs., Rétey, J	Chemistry and Biodiversity <b>2006</b> , 3, 502-508.	1.659
The interaction of heteroaryl-acrylates and alanines with phenylalanine ammonia-lyase from parsley	Paizs, C., Katona, A., Rétey, J.	<i>Chemistry - A European Journal</i> <b>2006</b> , 12 (10), pp. 2739-2744	5.454
Chemoenzymatic one-pot synthesis of enantiopure L-arylalanines from arylaldehydes	Paizs, C., Katona, A., Rétey, J.	<i>European Journal of Organic Chemistry</i> <b>2006</b> , (5), pp. 1113-1116	3.016
Mechanistic aspects and biocatalytic implications of the mio-containing ammonia-lyase / aminomutase family	László Poppe, Sarolta Pilbák, Csaba Paizs, János Rétey	<i>Studia Univ. "Babeş-Bolyai", Chemia</i> , <b>2008</b> , 53(4/2), 15-18	0
Investigation of the mechanism of action of pyrogallol-phloroglucinol transhydroxylase by using putative intermediates.	Paizs, C., Bartlewski-Hof, U., Rétey, J.	<i>Chemistry - A European Journal</i> <b>2007</b> , 13 (10), pp. 2805-2811	3.016
Chemoenzymatic preparation of enantiopure L-benzofuranyl- and L-benzo[b]thiophenyl alanines	Podea, P., Toșa, M. I., Paizs, Cs., Irimie, F. D.	<i>Tetrahedron: Asymmetry</i> <b>2008</b> , 19, 500-511.	2.796
Lipase-catalyzed kinetic resolution of racemic 1-heteroarylethanol—experimental and QM/MM study	Toșa, M. I., Pilbák, S., Moldovan, P., Paizs, Cs., Szatzker, G., Szakács, Gy., Novák, L., Irimie, F. D.,	<i>Tetrahedron: Asymmetry</i> <b>2008</b> , 19, 1844-1852.	2.796

Chemoenzymatic synthesis of (R)- and (S)-1-heteroarylethanol.	Poppe, L. Toşa, M. I., Podea, P., Paizs, Cs., Irimie, F. D	Tetrahedron: Asymmetry	2.796
Baker's yeast-mediated synthesis of (R)- and (S)-heteroaryl-ethane-1,2-diols	Podea, P., Paizs, Cs., Toşa, M. I., Irimie, F.	Tetrahedron: Asymmetry	2.796
The putative coenzyme B12-dependent methylmalonyl-CoA mutase from potatoes is a phosphatase	Paizs, C., Diemer, T., Rétey, J.	<i>Bioorganic Chemistry</i>	1.958
Enzyme-catalyzed synthesis of (R)- and (S)-3-heteroaryl-3-hydroxy-propanoic acids and their derivatives.	Brem J., Paizs Cs., Toşa M. I., Vass E., Irimie F. D	Tetrahedron: Asymmetry	2.796
New ways for old structures	Irimie, F.D., Paizs, C., Tosa, M., Podea, P.	<i>Studia Universitatis Babes-Bolyai Chemia</i>	0
The effect of electromagnetic fields on baker's yeast population dynamics, biocatalytic activity and selectivity	Sandu, D., Lingvay, I., Lányi, S., Micu, D.D., Popescu, C.L., Brem, J., Bencze, L.C., Paizs, C.	<i>Studia Universitatis Babes-Bolyai Chemia</i>	0

## 6. Cărți științifice publicate în edituri naționale acreditate

1. Toşa Monica-Ioana, Paizs Csaba, Irimie Florin-Dan, *Bioprocese pentru obținerea medicamentelor și intermediarilor*. Editura Napoca Star, Cluj-Napoca 2007, ISBN 978-973-647-531-5, 215 pag
2. Irimie Florin Dan, Paizs Csaba, Toşa Monica *Biotransformări în sinteza organică. Aspecte Fundamentale*. Editura Napoca Star, Cluj-Napoca 2006, ISBN 978-973-647-467-5, 180 pag
3. Moldovan Paula, Toşa Monica Ioana, Leţ Daniela, Majdik Cornelia, Paizs Csaba, Irimie Florin Dan *Aplicații pentru laboratorul de biochimie* Editura Napoca Star, Cluj Napoca 2006, ISBN 978-973-647-464-4, 153 pag.

## Criteriaul II – Prestigiu profesional

### 1. Citări ale articolelor ISI listate la Criteriaul I

Enzyme-catalyzed synthesis of (R)- and (S)-3-heteroaryl-3-hydroxy-propanoic acids and their derivatives, *Tetrahedron Asymmetry* 2009, 20 (4), pp. 489-496

1. Synthesis of a core carbon framework of cyanosporasides A and B, Aburano, D., Inagaki, F., Tomonaga, S., Mukai, C., *Journal of Organic Chemistry* 2009, 74 (15), pp. 5590-5594

Chemoenzymatic synthesis of (R)- and (S)-1-heteroarylethanol, *Tetrahedron Asymmetry* 2008, 19 (17), pp. 2068-2071

1. Chiral spiroaminoborate ester as a highly enantioselective and efficient catalyst for the borane reduction of furyl, thiophene, chroman, and thiochroman-containing ketones, Stepanenko, V., De Jesús, M., Correa, W., Bermúdez, L., Vázquez, C., Guzmán, I., Ortiz-Marciales, M. *Tetrahedron Asymmetry* 2009, 20 (23), pp. 2659-2665
2. Stereoselective chemoenzymatic synthesis of enantiopure 1-(Heteroaryl)ethanamines by lipase-Catalysed kinetic resolutions, Alatorre-Santamaria, S., Gotor-Fernandez, V., Gotor, V. *European Journal of Organic Chemistry* 2009, (15), pp. 2533-2538

Baker's yeast-mediated synthesis of (R)- and (S)-heteroaryl-ethane-1,2-diols, *Tetrahedron Asymmetry* 2008, 19 (16), pp. 1959-1964

1. New ways for old structures, Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16
2. Enantioselective Rh-catalyzed transfer hydrogenation of  $\alpha$ -sulfonyloxy heteroaryl ketones; asymmetric synthesis of (S)-bufuralol, Kwak, S.H., Lee, D.-M., Lee, K.-I. *Tetrahedron Asymmetry* 2009, 20 (22), pp. 2639-2645

Lipase-catalyzed kinetic resolution of racemic 1-heteroarylethanol-experimental and QM/MM study, *Tetrahedron Asymmetry* 2008, 19 (15), pp. 1844-1852

1. Chiral spiroaminoborate ester as a highly enantioselective and efficient catalyst for the borane reduction of furyl, thiophene, chroman, and thiochroman-containing ketones, Stepanenko, V., De Jesús, M., Correa, W., Bermúdez, L., Vázquez, C., Guzmán, I., Ortiz-Marciales, M. *Tetrahedron Asymmetry* 2009, 20 (23), pp. 2659-2665

- Enantioselective acylation of (RS)-phenylethylamine catalysed by lipases , Pilissão, C., Carvalho, P.d.O., Nascimento, M.d.G. *Process Biochemistry* 2009, 44 (12), pp. 1352-1357
  - New ways for old structures , Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16
  - Enantioselective acetylation of racemic alcohols by *Manihot esculenta* and *Passiflora edulis* preparations , Machado, L.L., de Gonzalo, G., Lemos, T.L.G., de Mattos, M.C., de Oliveira, M.d.C.F., Gotor-Fernández, V., Gotor, V. *Journal of Molecular Catalysis B: Enzymatic* 2009, 60 (3-4), pp. 157-162
  - Chemoenzymatic synthesis of (R)- and (S)-1-heteroarylethanol, Toşa, M.I., Podea, P.V., Paizs, C., Irimie, F.D. *Tetrahedron Asymmetry* 2008, 19 (17), pp. 2068-2071
- Chemoenzymatic preparation of enantiopure l-benzofuranyl- and l-benzo[b]thiophenyl alanines *Tetrahedron Asymmetry* 2008, 19 (4), pp. 500-511
- New ways for old structures , Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16
  - Biocatalytic routes to chiral amines and amino acids , Gotor-Fernández, V., Gotor, V. *Current Opinion in Drug Discovery and Development* 2009, 12 (6), pp. 784-797
  - A new and general route to 2-pyrrolylglycine, 2-pyrrolylalanine and homo-2-pyrrolylalanine derivatives, Sarkar, K., Singha, S.K., Chattopadhyay, S.K. *Tetrahedron Asymmetry* 2009, 20 (15), pp. 1719-1721
  - Highly diastereoselective approach to novel phenylindolizidinols via benzothieno analogues of tylophorine based on reductive desulfurization of benzo[b]thiophene, Šafář, P., Žúžiová, J., Marchalín, S., Tóthová, E., Prónayová, N., Švorc, L., Vrabel, V., Daïch, A. *Tetrahedron Asymmetry* 2009, 20 (5), pp. 626-634
  - Enzyme-catalyzed synthesis of (R)- and (S)-3-heteroaryl-3-hydroxy-propanoic acids and their derivatives, Brem, J., Paizs, C., Toşa, M.I., Vass, E., Irimie, F.D. *Tetrahedron Asymmetry* 2009, 20 (4), pp. 489-496
- Inhibition of histidine ammonia lyase by heteroaryl-alanines and acrylates, *Chemistry and Biodiversity* 2006, 3 (5), pp. 502-508
- Structure and chemistry of 4-methylideneimidazole-5-one containing enzymes , Cooke, H.A., Christianson, C.V., Bruner, S.D. *Current Opinion in Chemical Biology* 2009, 13 (4), pp. 453-461
  - Palladium-catalyzed sequential oxidative cyclization/coupling of 2-alkynylphenols and alkenes: A direct entry into 3-alkenylbenzofurans , Martínez, C., Álvarez, R., Aurrecochea, J.M. *Organic Letters* 2009, 11 (5), pp. 1083-1086
- Investigation of the mechanism of action of pyrogallol-phloroglucinol transhydroxylase by using putative intermediates Paizs, C., Bartlewski-Hof, U., Rétey, J. *Chemistry - A European Journal* 2007, 13 (10), pp. 2805-2811
- Evaluation of the pharmacophoric motif of the caged Garcinia xanthenes, Chantarasriwong, O., Cho, W.C., Batova, A., Chavasiri, W., Moore, C., Rheingold, A.L., Theodorakis, E.A. *Organic and Biomolecular Chemistry* 2009, 7 (23), pp. 4886-4894
- The interaction of heteroaryl-acrylates and alanines with phenylalanine ammonia-lyase from parsley Paizs, C., Katona, A., Rétey, J. *Chemistry - A European Journal* 12 (10), pp. 2739-2744
- Structure and chemistry of 4-methylideneimidazole-5-one containing enzymes **Cooke, H.A.**, Christianson, C.V., Bruner, S.D. *Current Opinion in Chemical Biology* 2009, 13 (4), pp. 453-461
  - Chemoenzymatic preparation of enantiopure l-benzofuranyl- and l-benzo[b]thiophenyl alanines , Podea, P.V., Toşa, M.I., Paizs, C., Irimie, F.D. *Tetrahedron Asymmetry* 2008, 19 (4), pp. 500-511
  - Biotransformations, Grogan, G. *Physical Chemistry Chemical Physics* 2007, 9 (26), pp. 223-249
  - Discovery of a Substrate Selectivity Switch in Tyrosine Ammonia-Lyase, a Member of the Aromatic Amino Acid Lyase Family , Watts, K.T., Mijts, B.N., Lee, P.C., Manning, A.J., Schmidt-Dannert, C. *Chemistry and Biology* 2006, 13 (12), pp. 1317-1326
  - Inhibition of histidine ammonia lyase by heteroaryl-alanines and acrylates , Katona, A., Toşa, M.I., Paizs, C., Rétey, J. *Chemistry and Biodiversity* 2006, 3 (5), pp. 502-508
- Chemoenzymatic one-pot synthesis of enantiopure L-arylalanines from arylaldehydes, Paizs, C., Katona, A., Rétey, J. *European Journal of Organic Chemistry* 2006, (5), pp. 1113-1116
- Chemo-enzymatic cascade oxidation in supercritical carbon dioxide/water biphasic media, Karmee, S.K., Roosen, C., Kohlmann, C., Lütz, S., Greiner, L., Leitner, W., *Green Chemistry* 2009, 11 (7), pp. 1052-1055
  - Modular chemoenzymatic one-pot syntheses in aqueous media: Combination of a palladium-catalyzed cross-coupling with an asymmetric biotransformation, Burda, E., Hummel, W., Gröger, H. *Angewandte Chemie - International Edition* 2008, 47 (49), pp. 9551-9554
  - Enantioselective one-pot two-step synthesis of hydrophobic allylic alcohols in aqueous medium through the combination of a Wittig reaction and an enzymatic ketone reduction , Krauß, M., Hummel, W., Gröger, H. *European Journal of Organic Chemistry* 2007, (31), pp. 5175-5179
  - New advances in the asymmetric synthesis of  $\alpha$ -amino acids , Lin, J., Fan, H.-D., Yan, S.-J. *Chinese Journal of Organic Chemistry* 2007, 27 (8), pp. 925-936
  - Pig liver esterase (PLE) as biocatalyst in organic synthesis: From nature to cloning and to practical applications , De María, P.D., García-Burgos, C.A., Bargeman, G., Van Gemert, R.W. *Synthesis* 2007, (10), pp. 1439-1452
  - Discovery of a Substrate Selectivity Switch in Tyrosine Ammonia-Lyase, a Member of the Aromatic Amino Acid Lyase Family , Watts, K.T., Mijts, B.N., Lee, P.C., Manning, A.J., Schmidt-Dannert, C. Watts,

K.T., Mijts, B.N., Lee, P.C., Manning, A.J., Schmidt-Dannert, C. *Chemistry and Biology* 2006, 13 (12), pp. 1317-1326

7. Inhibition of histidine ammonia lyase by heteroaryl-alanines and **acrylates**, Katona, A., Toşa, M.I., Paizs, C., Rétey, J. *Chemistry and Biodiversity* 2006, 3 (5), pp. 502-508

NIR surface enhanced Raman spectroscopy and bands assignment by DFT calculations of non-natural  $\beta$ -amino acids *Chemical Physics* 2005, 310 (1-3), pp. 189-199

1. Identification and characterisation of the E951 artificial food sweetener by vibrational spectroscopy and theoretical modelling, Peica, N. *Journal of Raman Spectroscopy* 2009, 40 (12), pp. 2144-2154
2. Dopamine molecules on Au@Ag shell bimetallic nanocolloids: Fourier transform infrared, raman, and surface-enhanced Raman spectroscopy study aided by density functional theory, Pande, S., Jana, S., Sinha, A.K., Sarkar, S., Basu, M., Pradhan, M., Pal, A., (...), Pal, T. *Journal of Physical Chemistry C* 2009, 113 (17), pp. 6989-7002
3. Mulberry non-engineered silk gland pKundu, J., Dewan, M., Ghoshal, S., Kundu, S.C. rotein vis-à-vis silk cocoon protein engineered by silkworms as biomaterial matrices, *Journal of Materials Science: Materials in Medicine* 2008, 19 (7), pp. 2679-2689
4. Raman and surface enhanced Raman spectroscopy on molecules of pharmaceutical and biological interest, Iliescu, T., Baia, M., Maniu, D. *Romanian Reports on Physics* 2008, 60 (3), pp. 829-855
5. Surface-enhanced Raman scattering and DFT computational studies of a benzotriazole derivative, Li, M.-Y., Liao, Q., Zhang, M., Ai, X.-C., Li, F.-Y. *Journal of Molecular Structure* 2008, 888 (1-3), pp. 2-6
6. N-acetylalanine monolayers at the silver surface investigated by surface enhanced Raman scattering spectroscopy and X-ray photoelectron spectroscopy: Effect of metallic ions, Yang, H., Zhu, X., Song, W., Sun, Y., Duan, G., Zhao, X., Zhang, Z. *Journal of Physical Chemistry C* 2008, 112 (38), pp. 15022-15027
7. Concentration-dependent orientational changes of 2-amino-2-thiazoline molecule adsorbed on silver nanocolloidal surface investigated by SERS and DFT, Chowdhury, J., Sarkar, J., Tanaka, T., Talapatra, G.B. *Journal of Physical Chemistry C* 2008, 112 (1), pp. 227-239
8. Surface-enhanced Raman scattering and DFT computational studies of a cyanuric chloride derivative, Liao, Q., Li, M.-Y., Hao, R., Ai, X.-C., Zhang, J.-P., Wang, Y. *Vibrational Spectroscopy* 2007, 44 (2), pp. 351-356
9. Adsorption of 2-amino-6-methylbenzothiazole on colloidal silver particles: Quantum chemical calculations and surface enhanced Raman scattering study, Chowdhury, J., Sarkar, J., De, R., Ghosh, M., Talapatra, G.B. *Chemical Physics* 2006, 330 (1-2), pp. 172-183
10. Electromagnetic mechanism of SERS, Schatz, G.C., Young, M.A., Van Duyne, R.P. *Topics in Applied Physics* 2006, 103, pp. 19-46
11. Ab initio, DFT vibrational calculations and SERRS study of Rhodamine 123 adsorbed on colloidal silver particles, Sarkar, J., Chowdhury, J., Pal, P., Talapatra, G.B. *Vibrational Spectroscopy* 2006, 41 (1), pp. 90-96
12. Experimental and theoretical surface enhanced raman scattering study of 2-amino-4-methylbenzothiazole adsorbed on colloidal silver particles, Sarkar, J., Chowdhury, J., Ghosh, M., De, R., Talapatra, G.B. *Journal of Physical Chemistry B* 2005, 109 (47), pp. 22536-22544

### 3. Citări în perioada 2005-2009 ale articolelor anterioare anului 2005

Biocatalytic enantioselective preparation of phenothiazine-based cyanohydrin acetates: Kinetic and dynamic kinetic resolution *Tetrahedron* 2004, 60 (46 SPEC. ISS.), pp. 10533-10540

1. Dynamic enzymatic kinetic resolution of methyl 2,3-dihydro-1H-indene-1-carboxylate, Pietruszka, J., Simon, R.C., Kruska, F., Braun, M. *European Journal of Organic Chemistry* 2009, (35), pp. 6217-6224
2. New ways for old structures, Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babeş-Bolyai Chemia* 2009, 4 (1), pp. 7-16
3. Chemoenzymatic method to enantiopure Sulphur heterocyclic  $\beta$ -hydroxy nitriles, Turcu, M.C., Perkiö, P., Kanerva, L.T. *Arkivoc* 2009 (3), pp. 251-263
4. Enantioselective enzyme-catalysed synthesis of cyanohydrins, Holt, J., Hanefeld, U. *Current Organic Synthesis* 2009, 6 (1), pp. 15-37
5. Chemoenzymatic and microbial dynamic kinetic resolutions, Kamaruddin, A.H., Uzir, M.H., Aboul-Enein, H.Y., Halim, H.N.A. *Chirality* 2009, 21 (4), pp. 449-467
6. Lipase-catalyzed dynamic kinetic resolution giving optically active cyanohydrins: use of silica-supported ammonium hydroxide and porous ceramic-immobilized lipase, Sakai, T., Wang, K., Ema, T. *Tetrahedron* 2008, 64 (9), pp. 2178-2183
7. Recent developments in dynamic kinetic resolution, Pellissier, H. *Tetrahedron* 2008, 64 (8), pp. 1563-1601
8. Enantiomers of amino ethanols and their precursors by lipase catalysis in non-aqueous solvents, Lundell, K., Kanerva, L.T. *Chimica Oggi* 2007, 25 (5 SUPPL. 2), pp. 26-30
9. Emulation of racemase activity by employing a pair of stereocomplementary biocatalysts, Gruber, C.C., Nestl, B.M., Gross, J., Hildebrandt, P., Bornscheuer, U.T., Faber, K., Kroutil, W. *Chemistry - A European Journal* 2007, 13 (29), pp. 8271-8276

10. An asymmetric, chemo-enzymatic synthesis of O-acetylcyanohydrins, Belokon, Y.N., Blacker, A.J., Clutterbuck, L.A., Hogg, D., North, M., Reeve, C. *European Journal of Organic Chemistry* 2006, (20), pp. 4609-4617
11. Catalytic hydrogenation of cyanohydrin esters as a novel approach to N-acylated  $\beta$ -amino alcohols - Reaction optimisation by a design of experiment approach, Veum, L., Pereira, S.R.M., Van Der Waal, J.C., Hanefeld, U. *European Journal of Organic Chemistry* 2006, (7), pp. 1664-1671
12. Carrier enabled catalytic reaction cascades, Veum, L., Hanefeld, U. *Chemical Communications* 2006, (8), pp. 825-831
13. Biotechnological applications of *Candida antarctica* lipase A: State-of-the-art, Domínguez De María, P., Carboni-Oerlemans, C., Tuin, B., Bargeman, G., Van Der Meer, A., Van Gemert, R. *Journal of Molecular Catalysis B: Enzymatic* 2005, 37 (1-6), pp. 36-46
14. Enantioselective synthesis of aliphatic cyanohydrin acetates, Veum, L., Hanefeld, U. *Synlett* 2005, (15), pp. 2382-2384
15. Enantioselective C-C bond synthesis catalysed by enzymes, Sukumaran, J., Hanefeld, U. *Chemical Society Reviews* 2005, 34 (6), pp. 530-542
16. Optimisation of the enantioselective synthesis of cyanohydrin esters, Veum, L., Kanerva, L.T., Halling, P.J., Maschmeyer, T., Hanefeld, U. *Advanced Synthesis and Catalysis* 2005, 347 (7-8), pp. 1015-1021
17. Chemoenzymatic preparation of the enantiomers of  $\beta$ -tryptophan ethyl ester and the  $\beta$ -amino nitrile analogue, Li, X.-G., Kanerva, L.T. *Tetrahedron Asymmetry* 2005, 16 (9), pp. 1709-1714

Erratum: Raman, infrared, and surface-enhanced Raman spectroscopy in combination with ab initio and density functional theory calculations on 10-isopropyl-10H-pheno-thiazine-5-oxide (*Journal of Physical Chemistry A* (2003), 107A) *Journal of Physical Chemistry A* 2003, 107 (25), pp. 5144

1. Electromagnetic mechanism of SERS, Schatz, G.C., Young, M.A., Van Duyne, R.P. *Topics in Applied Physics* 2006, 103, pp. 19-46

Kinetic resolution of 1-(benzofuran-2-yl)ethanols by lipase-catalyzed enantiomer selective reactions *Tetrahedron Asymmetry* 2003, 14 (13), pp. 1943-1949

1. Chiral spiroaminoborate ester as a highly enantioselective and efficient catalyst for the borane reduction of furyl, thiophene, chroman, and thiochroman-containing ketones, Stepanenko, V., De Jesús, M., Correa, W., Bermúdez, L., Vázquez, C., Guzmán, I., Ortiz-Marciales, M. *Tetrahedron Asymmetry* 2009, 20 (23), pp. 2659-2665
2. New ways for old structures Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babeş-Bolyai Chemia* 2009, 4 (1), pp. 7-16
3. Combined sol-gel entrapment and adsorption method to obtain solid-phase lipase biocatalyst, Zarcu, C., Claudiu, K., Corici, L., Croitoru, R., Csunderlik, C., Peter, F. *Revista de Chimie* 2009, 60 (9), pp. 922-927
4. Stereoselective chemoenzymatic synthesis of enantiopure 1-(Heteroaryl)ethanamines by lipase-catalysed kinetic resolutions, Alatorre-Santamaria, S., Gotor-Fernandez, V., Gotor, V. *European Journal of Organic Chemistry* 2009, (15), pp. 2533-2538
5. Lipase-catalyzed kinetic resolution of racemic 1-heteroarylethanols-experimental and QM/MM study, Toşa, M., Pilbák, S., Moldovan, P., Paizs, C., Szatzker, G., Szakács, G., Novák, L., (...), Poppe, L. *Tetrahedron Asymmetry* 2008, 19 (15), pp. 1844-1852
6. Effect of chain length on enzymatic hydrolysis of p-nitrophenyl esters in supercritical carbon dioxide, Varma, M.N., Madras, G. *Applied Biochemistry and Biotechnology* 2007, 144 (3), pp. 213-223
7. Biocatalysis in supercritical fluids, in fluorosolvents, and under solvent-free conditions, Hobbs, H.R., Thomas, N.R. *Chemical Reviews* 2007, 107 (6), pp. 2786-2820
8. Trends in lipase-catalyzed asymmetric access to enantiomerically pure/enriched compounds, Ghanem, A. *Tetrahedron* 2007, 63 (8), pp. 1721-1754
9. Lipase-catalyzed deacylation by alcoholysis: A selective, useful transesterification reaction, Santaniello, E., Casati, S., Ciuffreda, P. *Current Organic Chemistry* 2006, 10 (10), pp. 1095-1123
10. Asymmetric synthesis using hydrolytic enzymes in supercritical carbon dioxide, Matsuda, T., Harada, T., Nakamura, K., Ikariya, T. *Tetrahedron Asymmetry* 2005, 16 (5), pp. 909-91
11. Biocatalysis in supercritical CO<sub>2</sub>, Matsuda, T., Harada, T., Nakamura, K. *Current Organic Chemistry* 2005, 9 (3), pp. 299-315
12. Application of lipases in kinetic resolution of racemates, Ghanem, A., Aboul-Enein, H.Y. *Chirality* 2005, 17 (1), pp. 1-15
13. Lipase-mediated chiral resolution of racemates in organic solvents, Ghanem, A., Aboul-Enein, H.Y. *Tetrahedron Asymmetry* 2004, 15 (21), pp. 3331-3351
14. Investigation of biocatalysts and biocatalytic processes and their synthetic applications, Bódi, V. *Periodica Polytechnica: Chemical Engineering* 2003, 47 (1), pp. 55-56

Preparation of novel phenylfuran-based cyanohydrin esters: Lipase-catalysed kinetic and dynamic resolution *Tetrahedron Asymmetry* 2003, 14 (13), pp. 1895-1904

1. Enzymatic kinetic resolution of racemic cyanohydrins via enantioselective acylation, Xu, Q., Xie, Y., Geng, X., Chen, P. *Tetrahedron* 2010, 66 (3), pp. 624-630

2. New ways for old structures Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16
  3. Enantioselective enzyme-catalysed synthesis of cyanohydrins, Holt, J., Hanefeld, U. *Current Organic Synthesis* 2009, 6 (1), pp. 15-37
  4. Chemoenzymatic and microbial dynamic kinetic resolutions, Kamaruddin, A.H., Uzir, M.H., Aboul-Enein, H.Y., Halim, H.N.A. *Chirality* 2009, 21 (4), pp. 449-467
  5. Synthesis, biological evaluation and molecular modeling of arylfurans as potential trypanothione reductase inhibitors | [Síntese, avaliação biológica e modelagem molecular de arilfuranos como inibidores da enzima, tripanotona redutase] De Oliveira, R.B., Zani, C.L., Ferreira, R.S., Leite, R.S., Alves, T.M.A., Da Silva, T.H.A., Romanha, A.J. *Química Nova* 2008, 31 (2), pp. 261-267
  6. Recent developments in dynamic kinetic resolution, Pellissier, H. *Tetrahedron* 2008, 64 (8), pp. 1563-1601
  7. Enantiomers of amino ethanols and their precursors by lipase catalysis in non-aqueous solvents, Lundell, K., Kanerva, L.T. *Chimica Oggi* 2007, 25 (5 SUPPL. 2), pp. 26-30
  8. Potential and capabilities of hydroxynitrile lyases as biocatalysts in the chemical industry, Purkarthofer, T., Skranc, W., Schuster, C., Griengl, H. *Applied Microbiology and Biotechnology* 2007, 76 (2), pp. 309-320
  9. Recent progress on the lipase-catalyzed asymmetric syntheses, Akai, S., Kita, Y. *Yuki Gosei Kagaku Kyokaiishi/Journal of Synthetic Organic Chemistry* 2007, 65 (8), pp. 772-782
  10. An asymmetric, chemo-enzymatic synthesis of O-acetylcyanohydrins, Belokon, Y.N., Blacker, A.J., Clutterbuck, L.A., Hogg, D., North, M., Reeve, C. *European Journal of Organic Chemistry* 2006, (20), pp. 4609-4617
  11. Biotechnological applications of *Candida antarctica* lipase A: State-of-the-art, Domínguez De María, P., Carboni-Oerlemans, C., Tuin, B., Bargeman, G., Van Der Meer, A., Van Gemert, R. *Journal of Molecular Catalysis B: Enzymatic* 2005, 37 (1-6), pp. 36-46
  12. Enantioselective synthesis of aliphatic cyanohydrin acetates, Veum, L., Hanefeld, U. *Synlett* 2005, (15), pp. 2382-2384
  13. Optimisation of the enantioselective synthesis of cyanohydrin esters, Veum, L., Kanerva, L.T., Halling, P.J., Maschmeyer, T., Hanefeld, U. *Advanced Synthesis and Catalysis* 2005, 347 (7-8), pp. 1015-1021
  14. Enantioselective formation of mandelonitrile acetate: Investigation of a dynamic kinetic resolution II, Veum, L., Hanefeld, U. *Tetrahedron Asymmetry* 2004, 15 (23), pp. 3707-3709
- Optically active 1-(benzofuran-2-yl)ethanols and ethane-1,2-diols by enantiotopic selective bioreductions *Tetrahedron Asymmetry* 2003, 14 (11), pp. 1495-1501
1. The effect of electromagnetic fields on baker's yeast population dynamics, biocatalytic activity and selectivity, Sandu, D., Lingvaj, I., Lányi, S., Micu, D.D., Popescu, C.L., Brem, J., Bencze, L.C., Paizs, C. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (2), pp. 195-201
  2. New ways for old structures Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16
  3. Enantioselective Rh-catalyzed transfer hydrogenation of  $\alpha$ -sulfonyloxy heteroaryl ketones; asymmetric synthesis of (S)-bufuralol, Kwak, S.H., Lee, D.-M., Lee, K.-I. *Tetrahedron Asymmetry* 2009, 20 (22), pp. 2639-2645
  4. Chemoenzymatic synthesis of (R)- and (S)-1-heteroarylethanols, Toşa, M.I., Podea, P.V., Paizs, C., Irimie, F.D. *Tetrahedron Asymmetry* 2008, 19 (17), pp. 2068-2071
  5. Baker's yeast-mediated synthesis of (R)- and (S)-heteroaryl-ethane-1,2-diols, Podea, P.V., Paizs, C., Toşa, M.I., Irimie, F.D. *Tetrahedron Asymmetry* 2008, 19 (16), pp. 1959-1964
  6. Lipase-catalyzed kinetic resolution of racemic 1-heteroarylethanols-experimental and QM/MM study, Toşa, M., Pilbák, S., Moldovan, P., Paizs, C., Szatzker, G., Szakács, G., Novák, L., (...), Poppe, L. *Tetrahedron Asymmetry* 2008, 19 (15), pp. 1844-1852
  7. RhIII- and IrIII-catalyzed asymmetric transfer hydrogenation of ketones in water, Wu, X., Li, X., Zanotti-Gerosa, A., Pettman, A., Liu, J., Mills, A.J., Xiao, J. *Chemistry - A European Journal* 2008, 14 (7), pp. 2209-2222
  8. Biocatalytic reduction of carbonyl groups, Nakamura, K., Matsuda, T. *Current Organic Chemistry* 2006, 10 (11), pp. 1217-1246
  9. Microwave-assisted preparation of fused bicyclic heteroaryl boronates: Application in one-pot suzuki couplings, DiMauro, E.F., Vitullo, J.R. *Journal of Organic Chemistry* 2006, 71 (10), pp. 3959-3962
  10. Synthesis and conversion of 3-(2-hydroxythiobenzamido)benzo[b]furans, Briel, D. *Heterocycles* 2005, 65 (6), pp. 1295-1309
  11. Synthesis of 2-, 4- and 5-(2-alkylcarbamoil-1-methylvinyl)-7- alkyloxybenzo[b]furans and their leukotriene B4 receptor antagonistic activity, Ando, K. *Yakugaku Zasshi* 2005, 125 (11), pp. 863-874
  12. Synthesis of 2-, 4- And 5-(2-alkylcarbamoil-1-methylvinyl)-7- alkyloxybenzo[b]furans and their leukotriene 64 receptor antagonistic activity, Ando, K., Tsuji, E., Ando, Y., Kunitomo, J.-I., Kobayashi, R., Yokomizo, T., Shimizu, T., (...), Ohishi, Y. *Organic and Biomolecular Chemistry* 2005, 3 (11), pp. 2129-2139
- Raman, infrared, and surface-enhanced Raman spectroscopy in combination with ab initio and density functional theory calculations on 10-isopropyl-10H-phenothiazine-5-oxide *Journal of Physical Chemistry A* 2003, 107 (11), pp. 1811-1818

1. Probing the adsorption mechanism in thiamazole bound to the silver surface with Surface-enhanced Raman Scattering and DFT, Biswas, N., Thomas, S., Sarkar, A., Mukherjee, T., Kapoor, S. *Chemical Physics Letters* 2009, 479 (4-6), pp. 248-254
  2. SERS not to be taken for granted in the presence of oxygen Erol, M., Han, Y., Stanley, S.K., Stafford, C.M., Du, H., Sukhishvili, S. *Journal of the American Chemical Society* 2009, 131 (22), pp. 7480-7481
  3. Dopamine molecules on Au@Ag shell bimetallic nanocolloids: Fourier transform infrared, raman, and surface-enhanced Raman spectroscopy study aided by density functional theory, Pande, S., Jana, S., Sinha, A.K., Sarkar, S., Basu, M., Pradhan, M., Pal, A., (...), Pal, T. *Journal of Physical Chemistry C* 2009, 113 (17), pp. 6989-7002
  4. Studies on adsorption of mono- and multi-chromophoric hemicyanine dyes on silver nanoparticles by surface-enhanced resonance raman and theoretical calculations, Biswas, N., Thomas, S., Kapoor, S., Mishra, A., Wategaonkar, S., Mukherjee, T. *Journal of Chemical Physics* 2008, 129 (18), art. no. 184702
  5. Exploration of electrostatic field force in surface-enhanced Raman scattering: An experimental investigation aided by density functional calculations, Sarkar, S., Pande, S., Jana, S., Sinha, A.K., Pradhan, M., Basu, M., Chowdhury, J., Pal, T. *Journal of Physical Chemistry C* 2008, 112 (46), pp. 17862-17876
  6. Concentration-dependent orientational changes of 2-amino-2-thiazoline molecule adsorbed on silver nanocolloidal surface investigated by SERS and DFT, Chowdhury, J., Sarkar, J., Tanaka, T., Talapatra, G.B. *Journal of Physical Chemistry C* 2008, 112 (1), pp. 227-239
  7. Quantitative online detection of low-concentrated drugs via a SERS microfluidic system, Ackermann, K.R., Henkel, T., Popp, J. *ChemPhysChem* 2007, 8 (18), pp. 2665-267
  8. Experimental and theoretical studies of Raman spectroscopy on 4-mercaptopyridine aqueous solution and 4-mercaptopyridine/Ag complex system, Zhang, L., Bai, Y., Shang, Z., Zhang, Y., Mo, Y. *Journal of Raman Spectroscopy* 2007, 38 (9), pp. 1106-1111
  9. Adsorption of CGA on colloidal silver particles: DFT and SERS study, Biswas, N., Kapoor, S., Mahal, H.S., Mukherjee, T. *Chemical Physics Letters* 2009, 444 (4-6), pp. 338-345
  10. Adsorption of 4-methyl-4H-1,2,4-triazole-3-thiol molecules on silver nanocolloids: FT-IR, Raman, and surface-enhanced Raman scattering study aided by density functional theory, Sarkar, J., Chowdhury, J., Talapatra, G.B., *Journal of Physical Chemistry C* 2007, 111 (27), pp. 10049-10061
  11. On the photophysics of artificial blue-light photoreceptors: An ab initio study on a flavin-based dye dyad at the level of coupled-cluster response theory, Sadeghian, K., Schütz, M. *Journal of the American Chemical Society* 2007, 129 (13), pp. 4068-4074
  12. Surface-enhanced resonance raman scattering and density functional calculations of hemicyanine adsorbed on colloidal silver surface, Biswas, N., Thomas, S., Kapoor, S., Mishra, A., Wategaonkar, S., Venkateswaran, S., Mukherjee, T. *Journal of Physical Chemistry A* 2006, 110 (5), pp. 1805-1811
  13. Surface enhanced Raman scattering (SERS) - A quantitative analytical tool?, Sackmann, M., Materny, A. *Journal of Raman Spectroscopy* 2006, 37 (1-3), pp. 305-310
  14. Experimental and theoretical surface enhanced raman scattering study of 2-amino-4-methylbenzothiazole adsorbed on colloidal silver particles, Sarkar, J., Chowdhury, J., Ghosh, M., De, R., Talapatra, G.B. *Journal of Physical Chemistry B* 2005, 109 (47), pp. 22536-22544
  15. Adsorption of 2-aminobenzothiazole on colloidal silver particles: An experimental and theoretical surface-enhanced Raman scattering study, Sarkar, J., Chowdhury, J., Ghosh, M., De Rina, Talapatra, G.B., *Journal of Physical Chemistry B* 2005, 109 (26), pp. 12861-12867
- Candida antarctica lipase A in the dynamic resolution of novel furylbenzotiazol-based cyanohydrin acetates *Tetrahedron Asymmetry* 2003, 14 (5), pp. 619-627
1. New ways for old structures Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babeş-Bolyai Chimia* 2009, 4 (1), pp. 7-16
  2. Chemoenzymatic method to enantiopure Sulphur heterocyclic  $\beta$ -hydroxy nitriles, Turcu, M.C., Perkiö, P., Kanerva, L.T. *Arkivoc* 2009 (3), pp. 251-263
  3. Chemoenzymatic synthesis of optically active 1,2-disubstituted ferrocenes with planar chirality, Merabet-Khellasi, M., Aribi-Zouiouèche, L., Riant, O. *Tetrahedron Asymmetry* 2009, 20 (12), pp. 1371-1377
  4. Enantioselective enzyme-catalysed synthesis of cyanohydrins, Holt, J., Hanefeld, U. *Current Organic Synthesis* 2009, 6 (1), pp. 15-37
  5. Donor- $\pi$ -acceptor benzothiazole-derived dyes with an extended heteroaryl-containing conjugated system: synthesis, DFT study and antimicrobial activity, Zajac, M., Hrobárik, P., Magdolen, P., Foltínová, P., Zahradník, P. *Tetrahedron* 2008, 64 (46), pp. 10605-10618
  6. Recent developments in dynamic kinetic resolution, Pellissier, H. *Tetrahedron* 2008, 64 (8), pp. 1563-1601
  7. Enantiomers of amino ethanols and their precursors by lipase catalysis in non-aqueous solvents, Lundell, K., Kanerva, L.T. *Chimica Oggi* 2007, 25 (5 SUPPL. 2), pp. 26-30
  8. An asymmetric, chemo-enzymatic synthesis of O-acetylcyanohydrins, Belokon, Y.N., Blacker, A.J., Clutterbuck, L.A., Hogg, D., North, M., Reeve, C. *European Journal of Organic Chemistry* 2006, (20), pp. 4609-4617
  9. A chemoenzymatic scalable route to optically active (R)-1-(pyridin-3-yl)-2-aminoethanol, valuable moiety of  $\beta_3$ -adrenergic receptor agonists, Perrone, M.G., Santandrea, E., Giorgio, E., Bleve, L., Scilimati, A., Tortorella, P. *Bioorganic and Medicinal Chemistry* 2006, 14 (4), pp. 1207-1214

10. Biotechnological applications of *Candida antarctica* lipase A: State-of-the-art, Dominguez De María, P., Carboni-Oerlemans, C., Tuin, B., Bargeman, G., Van Der Meer, A., Van Gemert, R. *Journal of Molecular Catalysis B: Enzymatic* 37 (1-6), pp. 36-46
  11. Enantioselective synthesis of aliphatic cyanohydrin acetates, Veum, L., Hanefeld, U. *Synlett* 2005, (15), pp. 2382-2384
  12. Optimisation of the enantioselective synthesis of cyanohydrin esters, Veum, L., Kanerva, L.T., Halling, P.J., Maschmeyer, T., Hanefeld, U. *Advanced Synthesis and Catalysis* 2008, 347 (7-8), pp. 1015-1021
  13. Chemoenzymatic preparation of the enantiomers of  $\beta$ -tryptophan ethyl ester and the  $\beta$ -amino nitrile analogue, Li, X.-G., Kanerva, L.T. *Tetrahedron Asymmetry* 2005, 16 (9), pp. 1709-1714
- Chemo-enzymatic preparation of hydroxymethyl ketones *Journal of the Chemical Society. Perkin Transactions 1* 2002, (21), pp. 2400-2402
1. Microwave-assisted one-carbon chain extension in the preparation of terminal -hydroxy ketones, Vaismaa, M.J.P., Leskinen, M.V., Lajunen, M.K. *Synthetic Communications* 2009, 39 (11), pp. 2042-2052
  2. Convenient synthesis and evaluation of biological activity of benzyl (2S)-2-[(R)-1-hydroxy-2-oxo-(1-phenethyl)prop-3-ylcarbamoyl]-4-oxopiperidine- (or -4-oxopyrrolidine)-1-carboxylate as novel histone deacetylase inhibitor, Oh, S., Moon, H.-I., Jung, J.-C. *Zeitschrift fur Naturforschung - Section B Journal of Chemical Sciences* 2008, 63 (11), pp. 1300-1304
  3. Baker's yeast-mediated synthesis of (R)- and (S)-heteroaryl-ethane-1,2-diols, Podea, P.V., Paizs, C., Toşa, M.I., Irimie, F.D. *Tetrahedron Asymmetry* 2009, 19 (16), pp. 1959-1964
  4. A simple synthesis of 4-substituted 2-(3-hydroxy-2-oxo-1-phenethyl- propylcarbamoyl)pyrrolidine-1-carboxylic acid benzyl esters as novel cysteine protease inhibitors, *Zeitschrift fur Naturforschung - Section B Journal of Chemical Sciences* 2008, 63 (2), pp. 210-216
  5. Application of bioreduction by microorganisms in the enantioselective synthesis of alpha-substituted-1-phenylethanol, Andrade, L.H., Polak, R., Porto, A.L.M., Schoenlein-Crusius, I.H., Comasseto, J.V. *Letters in Organic Chemistry* 2006, 3 (8), pp. 613-618
- Baker's yeast mediated preparation of (10-alkyl-10H-phenothiazin-3-yl)methanols *Journal of Molecular Catalysis - B Enzymatic* 2002, 17 (6), pp. 241-248
1. Experimental and quantum chemical study on the vibrational spectroscopy of N-methylphenothiazines: Part 1, Endrédi, H., Billes, F., Toşa, M., Majdik, C., Irimie, F.D. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 2006, 63 (2), pp. 349-360
  2. Synthesis and photophysical properties of phenothiazine-labeled conjugated dendrimers, Zhang, X.-H., Choi, S.-H., Dong, H.C., Ahn, K.-H. *Tetrahedron Letters* 2005, 46 (32), pp. 5273-5276
- Vibrational spectroscopic investigations of 5-(4-fluor-phenyl)-furan-2 carbaldehyde *Vibrational Spectroscopy* 2002, 29 (1-2), pp. 235-239
1. Surface enhanced Raman spectroscopy of 5-(4-fluor-phenyl)-furan-2 carbaldehyde adsorbed on silver colloid, Iliescu, T., Irimie, F.D., Bolboaca, M., Paisz, Cs., Kiefer, W. *Vibrational Spectroscopy* 2002, 29 (1-2), pp. 251-255
- Surface enhanced Raman spectroscopy of 5-(4-fluor-phenyl)-furan-2 carbaldehyde adsorbed on silver colloid *Vibrational Spectroscopy* 2002, 29 (1-2), pp. 251-255
1. Synthesis of silver particles with different sizes and morphologies, Martínez-Castañón, G.A., Niño-Martínez, N., Loyola-Rodríguez, J.P., Patiño-Marín, N., Martínez-Mendoza, J.R., Ruiz, F. *Materials Letters* 2009, 63 (15), pp. 1266-1268
  2. Surface-enhanced Raman scattering and DFT computational studies of a benzotriazole derivative, Li, M.-Y., Liao, Q., Zhang, M., Ai, X.-C., Li, F.-Y. *Journal of Molecular Structure* 2008, 888 (1-3), pp. 2-6
  3. Surface-enhanced Raman scattering of single-walled carbon nanotubes on modified silver electrode, Hou, X., Fang, Y. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 2008, 69 (4), pp. 1140-1145
  4. A study of surface enhanced Raman scattering for furfural adsorbed on silver surface, Jia, T.-j., Li, P.-w., Shang, Z.-g., Zhang, L., He, T.-c., Mo, Y.-j. *Journal of Molecular Structure* 2008, 873 (1-3), pp. 1-4
  5. Surface-enhanced Raman scattering and DFT computational studies of a cyanuric chloride derivative, Liao, Q., Li, M.-Y., Hao, R., Ai, X.-C., Zhang, J.-P., Wang, Y. *Vibrational Spectroscopy* 2007, 44 (2), pp. 351-356
  6. An investigation of the surface enhanced Raman scattering (SERS) from a new substrate of silver-modified silver electrode by magnetron sputtering, Li, J., Fang, Y. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 2007, 66 (4-5), pp. 994-1000
  7. Surface-enhanced Raman scattering system of sample molecules in silver-modified silver film, Niu, Z., Fang, Y. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 2007, 66 (3), pp. 712-716
  8. Surface-enhanced Raman scattering of single-walled carbon nanotubes on silver-coated and gold-coated filter paper. Niu, Z.Q., Fang, Y. *Journal of Colloid and Interface Science* 2006, 303 (1), pp. 224-228
  9. An investigation of the surface-enhanced Raman scattering (SERS) effect from a new substrate of silver-modified silver electrode, Wen, R., Fang, Y. *Journal of Colloid and Interface Science* 2005, 292 (2), pp. 469-475



Separation of N-alkyl phenothiazine sulfones by HPTLC using an optimum mobile phase *Journal of Pharmaceutical and Biomedical Analysis* 2002,28 (2), pp. 385-389

1. The behavior of some phenothiazines and their demethylated derivatives in reversed-phase liquid chromatography , Le, D.C., Beljean, M., Siouffi, A.-M. *Journal of Chromatographic Science* 2006, 44 (1), pp. 49-54

Synthesis of optically active 3-substituted-10-alkyl-10H-phenothiazine-5-oxides by enantioselective biotransformations *Tetrahedron Asymmetry* 2002, 13 (2), pp. 211-221

1. Synthesis and structure of new 3,7,10-substituted-phenothiazine derivatives, Turdean, R., Bogdan, E., Terec, A., Petran, A., Vlase, L., Turcu, I., Grosu, I. *Central European Journal of Chemistry* 2009, 7 (1), pp. 111-117
2. (E)-3-(2-Alkyl-10H-phenothiazin-3-yl)-1-arylprop-2-en-1-ones: Preparative, IR, NMR and DFT study on their substituent-dependent reactivity in hydrazinolysis and sonication-assisted oxidation with copper(II)nitrate, Găină, L., Csámpai, A., Túrós, G., Lovász, T., Zsoldos-Mády, V., Silberg, I.A., Sohár, P. *Organic and Biomolecular Chemistry* 2006, 4 (23), pp. 4375-4386
3. Lipase-catalyzed deacylation by alcoholysis: A selective, useful transesterification reaction, Santaniello, E., Casati, S., Ciuffreda, P. *Current Organic Chemistry* 2006, 10 (10), pp. 1095-1123
4. Experimental and quantum chemical study on the vibrational spectroscopy of N-methylphenothiazines: Part 1 , Endrédi, H., Billes, F., Toşa, M., Majdik, C., Irimie, F.D. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy* 2006, 63 (2), pp. 349-360

Selective oxidaton methods for preparation of N-alkylphenothiazine sulfoxides and sulfones *Heterocyclic Communications* 2001, 7 (3), pp. 277-282

1. Microwave-assisted synthesis of Phenothiazine sulfoxide derivatives, Găină, L., Surducian, M., Cristea, C., Silaghi-Dumitrescu, L. *Studia Universitatis Babes-Bolyai Chemia* 2002, 2, pp. 65-71
2. (E)-3-(2-Alkyl-10H-phenothiazin-3-yl)-1-arylprop-2-en-1-ones: Preparative, IR, NMR and DFT study on their substituent-dependent reactivity in hydrazinolysis and sonication-assisted oxidation with copper(II)nitrate, Găină, L., Csámpai, A., Túrós, G., Lovász, T., Zsoldos-Mády, V., Silberg, I.A., Sohár, P. *Organic and Biomolecular Chemistry* 2006, 4 (23), pp. 4375-4386

Synthesis and stereochemistry of some new 1,3-dioxane derivatives obtained from 5-aryl-2-furaldehydes *Revue Roumaine de Chimie* 2000, 45 (9), pp. 877-882

1. Stereochemistry studies of some 1,3-dioxane derivatives by differential mass spectrometry and computational chemistry, Harja, F., Bettendorf, C., Grosu, I., Dinca, N. *NATO Science for Peace and Security Series A: Chemistry and Biology* ,2008, pp. 185-19
2. Stereochemistry studies of some 1,3-dioxane derivatives by differential mass spectrometry and computational chemistry, Harja, F., Bettendorf, C., Grosu, I., Dinca, N. *NATO Security through Science Series C: Environmental Security* , 2008, pp. 185-191

Bakers' yeast-mediated reductions of some nitro-dibenzofurans *Heterocyclic Communications* 1997, 3 (6), pp. 549-553

1. New ways for old structures Irimie, F.D., Paizs, C., Tosa, M., Podea, P. *Studia Universitatis Babes-Bolyai Chemia* 2009, 4 (1), pp. 7-16

#### 10. Participări la programe/granturi finanțate din sursă națională (se menționează și valoarea)

Nr.	Titlu	Funcție
1	<i>Metoda noua de separare a compusilor enantiopuri utilizand anticorpi selectivi (2004-2006), Contract CERES 532/2004</i>	membru 2003-2005
2	<i>Metodologie biocatalitica de obtinere selectiva a unor sintoni chirali pentru sinteza de compusi cu activitate biologica (2003-2005), Contract Ceres 189/2003</i>	Responsabil UBB 2003-2005
3	<i>Model experimental bioreactor-extractor pentru obtinerea enzimatica a unor compusi anti-sida (2003-2005), Contract Ceres 1990/2003</i>	Responsabil UBB 2003-2005
4	<i>Tehnologie de transesterificare enzimatica destinata obtinerii de biocarburanti de generatia a 2-a PNCD II</i>	membru 2008-2010
5	<i>Sinteza enzimatică a unor amino- și hidroxiacizi heterociclici nenaturali.</i>	director 2006-2008
6	<i>Investigarea mecanismului de actiune al histidin- si fenilalanin-amoniac liazelor, CNCSIS Idei II</i>	director 2009-2011

#### 15. Conferințe invitate internaționale

1. Moldovan, P., Paizs, Cs., Tosa M., Majdik, C., Daniela Let, D., Florin Dan Irimie, F. D. (2006): *Dynamic enzymatic resolution of some non-proteinogenic amino acids*, 1<sup>st</sup> European Chemistry Congress, 27-31 August, Budapest, Hungary 546.
2. Moldovan, P., Paizs, Cs., Tosa M., Majdik, C., Daniela Let, D., Florin Dan Irimie, F. D. (2006): *Optically active 1-(indole-3'-yl)ethane-1,2-diols by enantiotopic selective bioreductions*, 33<sup>rd</sup> International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22-26 May, 2006, 228.
3. Majdik, C., Toşa, M., Moldovan, P., Péntzes, A., Let, D., Paizs, Cs., Irimie, F. D. (2006): *Application of immobilization techniques for heavy metals biosorption with Saccharomyces cerevisiae cells*, 33<sup>rd</sup> International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22-26 May, 2006, 230.
4. Moldovan, P., Paizs, Cs., Tosa M., Majdik, C., Daniela Let, D., Florin Dan Irimie, F. D. (2006): *Dynamic enzymatic resolution of some non-proteinogenic amino acids*, 33<sup>rd</sup> International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22-26 May, 2006, 229.
5. Irimie, F.D., Paizs, Cs., Tosa, M.I., Majdik, C. (2006): *Selectivity of biocatalysts. Applications in organic synthesis*. 33<sup>rd</sup> International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22- 26 May, 2006, 231.
6. Florin Dan Irimie, Csaba Paizs, Monica Toşa, Paula Podea, Enzyme dynamic kinetic resolution, as a valuable tool for enantiopure compounds synthesis. process and monitoring, International Symposium and Summer School „*Development of Bioanalytical Methods and Actual Applications*”, Nitra 2008, Slovacia

### III. Realizare remarcabilă

Fenilalanin amoniac liaza din pătrunjel produsă de un mutant de *E. coli* care poate media sinteza multor analogi de L-fenilalanină din acrilatii corespunzători prin adiția amoniacului. Această enzimă a fost folosită prima dată de către noi pentru sinteza D-fenilalaninelor plecând de la racematul amoniacizilor (reacție enantiomer selectivă) (**Paizs, Cs., Katona, A., Rétey, J. (2006) The Interaction of Heteroaryl-Acrylates and Alanines with Phenylalanine Ammonia-Lyase from Parsley. Chemistry, a European Journal** 12, 2739-2744.).

Abilitățile greu de egalat ale biocatalizatorilor în raport cu chemocatalizatorii constau în activitatea, selectivitatea și condițiile de lucru compatibile cu viața. Prin combinarea reacțiilor chimice (reacția Wittig) și biocatalitice (liza esterilor cu PLE urmată de adiția amoniacului mediată de fenilalanin amoniac liazei, PAL) s-a reușit sinteza diversilor analogi de L-fenilalanină într-o manieră “one-pot” plecând de la aldehydele corespunzătoare. Este prima și, pentru moment, unica metodă de sinteză “one-pot” pentru obținerea aminoacizilor enantiopuri (**Paizs, Cs., Katona, A., Rétey, J. (2006) Chemoenzymatic One-Pot Synthesis of Enantio-Pure L-Arylalanines From Arylaldehydes. European Journal of Organic Chemistry** 1113-1116.).

Data:  
18 martie 2010

**Certific validitatea datelor prezentate**  
Sef de catedră,

Semnătura: