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RECTORATUL

Universitatea Babeș-Bolyai Competiția Excelenței 2010

Dosar individual

Notă: Toate datele se referă la perioada 2005-2009

Nume, prenume, grad did.	ASIST. DR. ING. PAULA VERONICA PODEA
Facultatea, Catedra	Chimie si inginerie chimica, Catedra de biochimie si inginerie biochimica
Domeniul științific	Biotehnologii, Ingineria și securitatea alimentelor
Adresa paginii web personale	http://www.chem.ubbcluj.ro/catedre/biochimie-inginerie.html
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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
Chemoenzymatic preparation of enantiopure L-benzofuranyl- and L-benzo[b]thiophenyl alanines	Podea, P., Toșa, M. I., Paizs, Cs., Irimie, F. D.	Tetrahedron: Asymmetry 2008 , 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., Poppe, L.	Tetrahedron: Asymmetry 2008 , 19, 1844-1852.	2.796
Chemoenzymatic synthesis of (R)- and (S)-1-heteroarylethanol.	Toșa, M. I., Podea, P., Paizs, Cs., Irimie, F. D.	Tetrahedron: Asymmetry 2008 , 19, 2068-2071.	2.796
Baker's yeast-mediated synthesis of (R)- and (S)-heteroaryl-ethane-1,2-diols	Podea, P., Paizs, Cs., Toșa, M. I., Irimie, F.	Tetrahedron: Asymmetry 2008 , 19, 1959-1964.	2.796
New ways for old structures	Irimie, F.D., Paizs, C., Toșa, M., Podea, P.	<i>Studia Universitatis Babes-Bolyai Chemia</i> 2009 , 4 (1), 7-16	0

6. Cărți științifice publicate în edituri naționale acreditate

1. Moldovan Paula, Toșa Monica Ioana, Leț 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

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 α -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
2. 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
3. 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
4. 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
5. 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 1-benzofuranyl- and 1-benzo[b]thiophenyl alanines *Tetrahedron Asymmetry* 2008, 19 (4), pp. 500-511

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. 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
3. 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
4. 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., Dařch, A. *Tetrahedron Asymmetry* 2009, 20 (5), pp. 626-634
5. 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

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

Baker's yeast mediated preparation of (10-alkyl-10H-phenothiazin-3-yl)methanol *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

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

Nr.	Titlu	Funcție
1	<i>Sinteza enzimatică a unor amino- și hidroxiacizi heterociclici nenaturali.</i>	membru 2006-2008
	<i>Metoda nouă de separare a compusilor enantiopuri utilizând anticorpi selectivi (2004-2006), Contract CERES 532/2004</i>	membru 2003-2005
	<i>Metodologie biocatalitică de obținere selectivă a unor sintoni chirali pentru sinteza de compusi cu activitate biologică (2003-2005), Contract Ceres 189/2003</i>	membru 2003-2005

	<i>Metodologie biocatalitica de obtinere selectiva a unor sintoni chirali pentru sinteza de compusi cu activitate biologica (2003-2005), Contract Ceres 189/2003</i>	membru 2003-2005
	<i>Model experimental bioreactor-extractor pentru obtinerea enzimatica a unor compusi anti-sida (2003-2005), Contract Ceres 1990/2003</i>	membru 2003-2005
	<i>Model experimental bioreactor-extractor pentru obtinerea enzimatica a unor compusi anti-sida (2003-2005), Contract Ceres 1990/2003</i>	membru 2003-2005
	<i>Investigarea mecanismului de actiune al histidin- si fenilalanin-amoniac liazelor, CNCSIS Idei II</i>	membru 2009-2011
	<i>Tehnologie de transesterificare enzimatica destinata obtinerii de biocarburanti de generatia a 2-a PNCD II</i>	membru 2008-2010
	<i>Tehnologie de transesterificare enzimatica destinata obtinerii de biocarburanti de generatia a 2-a PNCD II</i>	membru 2008-2010
	<i>Substitute de sange pe baza de metaloproteine: strategii pentru combaterea stresului oxidativ si a celui nitroziv Idei</i>	Membru, 2007-2010

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*, 1st 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*, 33rd International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22-26 May, 2006, 228.
3. Majdik, C., Toșa, M., Moldovan, P., Pénczes, A., Let, D., Paizs, Cs., Irimie, F. D. (2006): *Application of immobilization techniques for heavy metals biosorption with Saccharomyces cerevisiae cells*, 33rd 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*, 33rd International Conference of Slovak Society of Chemical Engineering, Tatranske Matliare, Slovakia, 22-26 May, 2006, 229.

III. Realizare remarcabilă

(Descrieți într-o manieră cât mai accesibilă (în maximum 1 pagină) cea mai importantă realizare științifică/tehnică/artistică din ultimii 5 ani și impactul acesteia.)

Activitatea de cercetare desfasurata in ultimii 5 ani a urmarit pe de o parte realizarea unor rezolutii cinetice sau cinetice dinamice enzimaticice ale unor racemati, iar pe de alta parte elaborarea de strategii „one-pot” (care sa includa cel putin o etapa enzimatica) de obtinere ale unor compusi chirali.

Dotarea laboratoarelor catedrei cu aparatura performanta de analize a puritatii (UV-VIS, cromatografie), inclusiv a puritatii optice (polarimetrie, HPLC si GC chiral), a permis efectuarea unor studii complexe de optimizare a proceselor studiate (la scara analitica) si elaborarea unor metodologii sintetice la nivel preparativ.

O alta directie de cercetare, mai noua, o reprezinta izolarea de principii active (uleiuri volatile, antioxidanti, etc) din materii prime vegetale, prin diverse metode de extractie si caracterizarea acestora.

Impactul stiintific al rezultatelor obtinute este reflctat de publicarea lor in reviste stiintifice cotate ISI.

As mentiona aici si faptul ca teza mea de doctorat finalizata in 2008 sub indrumarea Prof. Dr. Florin-Dan Irimie, a fost realizata exclusiv in laboratoarele catedrei.

Data:

18 martie 2010

Certific validitatea datelor prezentate

Sef de catedră,

Semnătura: