

**Chemický ústav
Slovenskej akadémie vied**



**SPRÁVA O ČINNOSTI
ZA ROK 2009**

**Bratislava
január 2010**

O b s a h

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1. Základné údaje o organizácii

1.1. Kontaktné údaje

Názov organizácie:	Chemický ústav SAV
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Typ organizácie:	príspevková od r. 2009

1.2. Údaje o zamestnancoch

Tabuľka 1a. Počet a štruktúra zamestnancov

Štruktúra zamestnancov	K	K -do 35 r.		K -ved. prac.		F	P	T
		M	Ž	M	Ž			
Celkový počet zamestnancov	136	14	20	–	–	127	122.65	100.02
Vedeckí pracovníci	65	7	7	33	32	56	53.66	53.66
Odborní pracovníci VŠ	25	4	9	–	–	25	24.71	21.71
Odborní pracovníci ÚS	34	3	4	–	–	34	33.06	24.65
Ostatní pracovníci	12	0	0	–	–	12	11.22	–

K - kmeňový stav zamestnancov v pracovnom pomere k 31. 12. 2009 (zamestnanci v pracovnom pomere vrátane riadnej materskej dovolenky, zamestnancov pôsobiacich v zahraničí, v štátnych funkciách, členov Predsedníctva SAV, zamestnancov pôsobiacich v zastupiteľských zboroch)

F - fyzický stav zamestnancov k 31. 12. 2009 (bez riadnej materskej dovolenky, zamestnancov pôsobiacich v zahraničí, v štátnych funkciách, zamestnancov pôsobiacich v zastupiteľských zboroch)

P - celoročný priemerný prepočítaný počet zamestnancov

T - celoročný priemerný prepočítaný počet riešiteľov projektov

M, Ž - muži, ženy

Tabuľka 1b. Štruktúra vedeckých pracovníkov (kmeňový stav k 31. 12. 2009)

Rodová skladba	Pracovníci s hodnosťou				Vedeckí pracovníci v stupňoch		
	DrSc.	CSc./PhD.	prof.	doc.	I.	IIa.	IIb.
Muži	10	23	1	2	10	13	10
Ženy	1	31	1	0	1	19	12

Tabuľka 1c. Štruktúra zamestnancov podľa veku a rodu, ktorí sú riešiteľmi projektov

Veková štruktúra	< 30	31-34	35-39	40-44	45-49	50-54	55-59	60-64	> 65
Muži	5	7	3	2	3	5	9	3	5
Ženy	10	4	6	1	5	6	7	5	1

Tabuľka 1d. Priemerný vek zamestnancov organizácie k 31. 12. 2009

	Kmeňoví zamestnanci	Vedeckí pracovníci	Riešitelia projektov
Muži	48.78	49.45	47.52
Ženy	47.84	47.37	44.62
Spolu	48.17	48.43	45.97

Pozn.: V Prílohe A je uvedený menný zoznam zamestnancov a doktorandov k 31. 12. 2009 s vyznačením úväzku a riešiteľskej kapacity.

1.3. Iné dôležité informácie k základným údajom o organizácii a zmeny za posledné obdobie (v zameraní, v organizačnej štruktúre a pod.)

V roku 2009 nedošlo k žiadnym podstatným zmenám vo vedeckej orientácii Chemického ústavu, ktorá bola naďalej zameraná na riešenie problematiky chémie a biochémie sacharidov a príslušných enzýmových systémov.

V rámci organizačného členenia pracoviska (od 1. 1. 2005), je vytvorených osem vedeckých oddelení - Štruktúra a funkcia sacharidov, Glykobiológia, Glykomateriály, Glykochémia, Glykobiotechnológia, Enzymológia sacharidov, Imunochémia glykokonjugátov a Zbierka kvasiniek (tieto vedecké oddelenia spolu tvoria Centrum glykomiky) a tri spoločné-nevedecké oddelenia - Analytické odd., Realizačné odd. a Ekonomicko-technické oddelenie.

Chemický ústav SAV bol v rámci akreditácie vedeckých organizácií SAV v roku 2007 zaradený do skupiny A*, čo svedčí o vysokej kvalite vedecko-výskumnej práce a ostatných zohľadňovaných ukazovateľov. Podobne pri evaluácii pracovísk začiatkom roka 2009 sa ústav umiestnil medzi najlepšími pracoviskami II. odd. vied SAV.

Od 1. 1. 2009 sa zmenila forma hospodárenia ústavu z rozpočtovej na príspevkovú.

2. Vedecká činnosť

2.1. Domáce projekty

2.1.1. Domáce projekty riešené v roku 2009

Tabuľka 2a. Zoznam domácich projektov riešených v roku 2009

ŠTRUKÚRA PROJEKTOV	Počet projektov		Čerpané financie za r. 2009 (v €)		
	A	B	A		B
			spolu	pre organizáciu	
1. Vedecké projekty, ktoré boli v r. 2009 financované VEGA	20	4	110308	110308	11254
2. Projekty, ktoré boli v r. 2009 financované APVV	11	4	330787	253989	23146
3. Projekty OP ŠF	0	3	0	0	70315
4. Projekty FM EHP	2	0	74680	74680	0
5. Projekty riešené v rámci ŠPVV	0	1	0	0	43922
6. Projekty centier excelentnosti SAV	1	1	39832	28214	10000
7. Vedecko-technické projekty, ktoré boli v r. 2009 financované	0	0	0	0	0
8. Projekty podporované Európskym sociálnym fondom	0	0	0	0	0
9. Podpora medzinárod. spolupráce z národných zdrojov (MVTs, APVV,..)	4	15	21635	14930	68567
10. Iné projekty (ústavné, na objednávku rezortov a pod.)	0	0	0	0	0

A - organizácia je nositeľom projektu; B - organizácia sa zmluvne podieľa na riešení projektu

2.1.2. Domáce projekty podané v roku 2009

Tabuľka 2b. Zoznam domácich projektov podaných v roku 2009

Štruktúra projektov	Miesto podania	Organizácia je nositeľom projektu	Organizácia sa zmluvne podieľa na riešení projektu
1. Účasť na nových výzvach APVV r. 2009	–	1	2
2. Projekty výziev OP ŠF podané v r. 2009	Bratislava	1	6
	Regióny	1	0
3. Projekty výziev FM EHP podané v r. 2009	–	0	0

2.2. Medzinárodné projekty

2.2.1 Medzinárodné projekty riešené v roku 2009

Tabuľka 2c. Zoznam medzinárodných projektov riešených v roku 2009

ŠTRUKTÚRA PROJEKTOV	Počet projektov		Čerpané financie za r. 2009 (v €)		
			A		B
	A	B	spolu	pre organizáciu	
1. Projekty 6. rámcového programu EÚ (riešené v r. 2009)	0	3	0	0	82380
2. Projekty 7. RP EÚ	0	2	0	0	77635
3. Multilaterálne projekty v rámci vedec. programov COST, EUREKA, INTAS, ESPIRIT, PHARE, NATO, UNESCO, CERN, IAEA, ESF a iné	0	10	0	0	0
4. Projekty v rámci medzivládnych dohôd o vedecko-techn. spolupráci (Grécko, ČR, Nemecko a iné)	3	1	0	0	0
5. Bilaterálne projekty	1	0	0	0	0
6. Iné projekty financované alebo spolufinancované zo zahr. zdrojov	2	0	40500	40500	0

A - organizácia je nositeľom projektu; B - organizácia sa zmluvne podieľa na riešení projektu

*Bližšie údaje sú uvedené v Prílohe B.

2.2.2. Medzinárodné projekty v 7. RP EÚ podané v roku 2009

Tabuľka 2d. Podané projekty 7. RPEÚ v roku 2009

	A	B
Počet podaných projektov v 7. RP EÚ	2	2

A - organizácia je nositeľom projektu; B - organizácia sa zmluvne podieľa na riešení projektu

2.3. Najvýznamnejšie výsledky vedeckej práce

2.3.1. Základný výskum

Charakterizácia katalytického mechanizmu glykozyltransferáz (Krupička, Tvaroška)

Enzým galaktozyltransferáza-I katalyzuje prenos monosacharidu galaktózy z donoru na acetylglukozamín a k svojej funkcii potrebuje dvojmocný mangán. Katalytický mechanizmus

tohto enzýmu bol študovaný použitím kombinácie metód kvantovej a molekulovej mechaniky. Kvantovochemická časť popisovala 253 atómov a molekulová mechanika zostatok systému - 4527 atómov. Charakterizovaná bola štruktúra Michaelisovho komplexu, tranzitného stavu reakcie a vypočítaná aktivačná bariéra pre tento proces bola 15 kcal/mol. Získané výsledky pridávajú ďalšie argumenty v prospech pre S_N2 typ mechanizmu používaného invertujúcimi glykozyltransferázami. Projekty APVV-0607-07, MRTN-CT-2006-035866 (6RP), CE SAV COMCHEM (**Chemický ústav SAV**).

KRUPIČKA, M. - TVAROŠKA, I. Hybrid quantum mechanical/molecular mechanical investigation of the β -1,4-galactosyltransferase-I mechanism. In *The Journal of Physical Chemistry B*. Vol. 113, (2009), p. 11314-11319. (4.189 – IF2008)

Širokospektrálne požiadavky pre enkapsuláciu v medicíne a biotechnológii (Bučko, Gemeiner, Vikartovská)

Na základe prehľadu aktuálneho stavu a porovnávacích medzilaboratórnych testov (tzv. round robin experiments), uskutočnených vo vybraných špičkových európskych laboratóriách sa podarilo určiť, zjednotiť a štandardizovať najvhodnejšie techniky charakterizácie kapsúl, používaných pre medicínske a biotechnologické účely. Pracovisko Chemického ústavu SAV prispelo ku štandardizácii techník meraním viskozity enkapsulačných polymérov, produkciou alginátových častíc pomocou enkapsulátora s koaxiálnou vzduchovou tryskou a meraním biokompatibility polyelektrolytových kapsúl technikou bioluminometrie. Projekty COST Action 865, VEGA 1/4452/07, APVV-51-033205 (**Chemický ústav SAV**).

DE VOS, P. - BUČKO, M. - GEMEINER, P. - NAVRÁTIL, M. - ŠVITEL, J. - FAAS, M. - STRAND, B.L. - SKJAK-BRAEK, G. - MORCH, Y.A. - VIKARTOVSKÁ, A. - LACÍK, I. - KOLLÁRIKOVÁ, G. - ORIVE, G. - PONCELET, D. - PEDRAZ, J.L. - ANSORGE-SCHUMACHER, M.B. Multiscale requirements for bioencapsulation in medicine and biotechnology. In *Biomaterials*. Vol. 30, (2009), p. 2559-2570. (6.646 – IF2008)

Peptidové adaptéry vhodné na detekciu neznačených proteínov. Chemická optimalizácia a detekcia rozdielných foriem proteínov (Tkáč)

Na stanovenie cyklín-závislých kináz (CDKs), ktorých aktivity sú dôležité pri proliferácii a v rakovinových bunkách, boli využité nové rozpoznávacie biologické próby - peptidové aptaméry. Študovaná bola najmä optimalizácia povrchov s orientovanou imobilizáciou peptidových aptamérov s následným využitím pri vysoko špecifickom a citlivom protokole stanovenia aktívnej formy CDK2. Porovnaním väzobnej afinity dvoch rozličných peptidových aptamérov - pep6 a pep9 (oba pripravené vsunutím peptidovej sekvencie na povrch „scaffold“ proteínu) sa zistilo, že pep9 bol efektívnejší. Okrem toho pep9 bol schopný detegovať len minimálne zmeny v konformácii CDK2 súvisiace s aktiváciou katalytickej aktivity fosforyláciou len jednej aminokyseliny (treonín 160). Typická odpoveď na neaktívnu formu CDK2 bola v rozmedzí od 0.5–2% odpovede aktívnej formy CDK2 v koncentračnom rozsahu 2–20 nM. Hoci protilátky sú schopné v zriedkavých prípadoch rozoznávať konformačné zmeny väzobného partnera, toto je prelomová štúdia ukazujúca, že próba iná ako protilátka je schopná detegovať izofomy proteínov. Projekt BBSRC (BB/D523094/1) (**Chemický ústav SAV**).

DAVIS, J.J. - TKÁČ, J. - HUMPHREYS, R. - BUXTON, A.T. - LEE, T.A. - FERRIGNO, P.K. Peptide aptamers in label-free protein detection: 2. Chemical optimization and detection

of distinct protein isoforms. In *Analytical Chemistry*. Vol. 81, (2009), p. 3314-3320. (5.712 – IF2008)

2.3.2. Aplikačný výskum

Prietočné injekčné analytické systémy založené na biosenzoroch pre sledovanie biotechnologických procesov (Gemeiner et al.)

Vyvinutý a aplikovaný bol prietočný injekčný analytický (flow injection analysis, FIA) systém na sledovanie fermentácie sorbitolu na sorbózu pomocou enzýmového biosenzora a sledovanie etanolovej fermentácie pomocou mikrobiálneho *Gluconobacter* biosenzora. V prípade biotransformácie D-sorbitolu na L-sorbózu, ktorá významne zefektívňuje proces produkcie vitamínu C (jeho celosvetová ročná produkcia je cca 120000 t), bola použitá enzýmová bioelektroda s enzýmom D-sorbitol dehydrogenáza. Pri monitorovanej fermentácii sorbitolu na sorbózu sa používa kmeň *Gluconobacter*, pričom ten bol v ďalšej aplikácii FIA systému využitý ako biokomponent bioelektrody. Pri off-line sledovaní etanolovej fermentácie, ktorá patrí medzi najrozšírenejšie biotechnologické procesy vôbec, bol purifikovaný enzým alkohol dehydrogenáza nahradený spomínaným mikroorganizmom *Gluconobacter oxydans*. Presnosť aj stabilita monitorovacieho systému založeného na mikrobiálnom biosenzore boli vyhovujúce. Oba opísané FIA biosenzorové systémy boli úspešne a efektívne použité pre sledovanie celého priebehu príslušných fermentačných procesov. Sú porovnateľné s metódami používanými pre tento účel rutinne (zväčša separačné, HPLC resp. GC), čím ich plne nahrádzujú, navyše skracujú čas analýzy, sú lacnejšie a v prípade potreby sú uspôsobiteľné aj pre on-line analýzy. Projekty APVV-51-033205; VMSP-P-0052-07; SAV-FM-EHP-2008-04-04; VEGA 1/4452/07; VEGA 2/01431/09 (**Chemický ústav SAV**).

ŠEFČOVIČOVÁ, J. - VIKARTOVSKÁ, A. - PÄTOPRSTÝ, V. - MAGDOLEN, P. - KATRLÍK, J. - TKÁČ, J. - GEMEINER, P. Off-line FIA monitoring of sorbitol consumption during sorbose production using a sorbitol biosensor. In *Analytica Chimica Acta*. Vol. 644, (2009), p. 68-71. (3.146 – IF2008)

VALACH, M. - KATRLÍK, J. - ŠTURDÍK, E. - GEMEINER, P. Ethanol *Gluconobacter* biosensor designed for flow injection analysis. Application in ethanol fermentation off-line monitoring. In *Sensors and Actuators B: Chemical*. Vol. 138, (2009), p. 581-586. (3.122 – IF2008)

2.3.3. Medzinárodné vedecké projekty

Metadynamika ako nástroj štúdia konformačných zmien biologicky aktívnych molekúl (Spiwok, Tvaroška)

Kyselina sialová hrá dôležitú úlohu v celom rade biologických procesov a jej mimetiká sú efektívnymi antivirotikami pri liečení chrípky. Kľúčovú úlohu pri rozpoznávaní kyseliny sialovej zohráva jej konformácia. Preto bol vypočítaný povrch voľnej energie charakterizujúci konformačné chovanie jej 6-členného kruhu. Výsledky ukázali, že metadynamika môže korektne popísať voľno-energetický povrch konformačných zmien biologicky dôležitých molekúl a tieto výsledky môžu byť použité pri dizajne nových inhibítorov neuraminidázy. Projekt MRTN-CT-2006-035866 (6RP) (**Chemický ústav SAV**).

SPIWOK, V. - TVAROŠKA, I. Conformational free energy surface of α -N-acetylneuraminic acid: An interplay between hydrogen bonding and solvation. In *The Journal of Physical Chemistry B*. Vol. 113, (2009), p. 9589-9594. (4.189 – IF2008)

SPIWOK, V. - TVAROŠKA, I. Metadynamics modelling of the solvent effect on primary hydroxyl rotamer equilibria in hexopyranosides. In *Carbohydrate Research*. Vol. 344, (2009), p. 1575-1581. (1.960 – IF2008)

Mutačná analýza génu UDP-GlcNAc-1-fosfotransferázy u pacientov s ochorením na Mukopolidózu typ-II a III (Mucha)

Mukopolidóza typ-II a III je metabolické, autozomálne recesívne ochorenie, ktoré vzniká následkom defektu UDP-GlcNAc-1-fosfotransferázy (GNPTAB) - kľúčového enzýmu biosyntézy Man-6-P-značených lyzozomálnych enzýmov. DNA analýzou génu GNPTAB u 46 pacientov bol potvrdený výskyt 25 rôzne mutovaných alel, z ktorých 22 je opísaných vôbec prvýkrát. Štúdie funkčnej exprese mutovaných génov a bioinformatické analýzy definovali molekulárnu podstatu straty katalytickej aktivity enzýmu. Výsledky mutačnej analýzy génu nájdu praktické uplatnenie v klinickej praxi pri komplementárnej diagnostike metabolického ochorenia. Projekt ESF-Euroglycosciences Forum (07-RNP-015) (**Chemický ústav SAV**).

TAPPINO, B. - CHUZHANOVA, N.A. - REGIS, S. - DARDIS, A. - CORSOLINI, F. - STROPPIANO, M. - TONOLI, E. - BECCARI, T. - ROSANO, C. - MUCHA, J. - BLANCO, M. - SZLAGO, M. - DI ROCCO, M. - COOPER, D.N. - FILOCAMO, M. Molecular characterization of 22 novel UDP-N-acetylglucosamine-1-phosphate transferase α - and β -subunit (GNPTAB) gene mutations causing mucopolidosis types IIalpha/beta and III α/β in 46 patients. In *Human Mutation*. Vol. 30, (2009), p. E956-E973. (7.033 – IF2008)

Nová rodina hemicelulolytickej alfa-glukuronidázy - enzým s významným biotechnologickým potenciálom (Biely, Ryabova, Vršanská)

Štúdium xylanolytického systému xylózu-fermentujúcej kvasinky *Pichia stipitis* viedlo k objavu extracelulárnej α -glukuronidázy, ktorá odstraňuje zvyšky kyseliny 4-O-metyl-D-glukurónovej z hlavného reťazca glukurónoxylánu. Túto aktivitu nevykazujú lepšie preštudované mikrobiálne α -glukuronidázy patriace do rodiny glykozidhydroláz číslo 67, ktoré sú aktívne iba na aldourónových kyselinách, v ktorých je urónová kyselina viazaná na neredujúcu D-xylopyranozylovú jednotku. N-terminálna aminokyselinová sekvencia purifikovaného enzýmu odpovedala presne génu kvasinky *P. stipitis* ABN67901, ktorý kóduje bielkovinu neznámej funkcie, avšak veľkosťou odpovedajúcej izolovanej α -glukuronidáze. Vyhľadávanie podobných génov v genómoch iných mikroorganizmov viedlo k zriadeniu novej rodiny glykozidhydroláz číslo 115, čo možno považovať za ďalší významný príspevok slovenskej vedy k súčasnému poznaniu a klasifikácii enzýmov aktívnych na sacharidoch. Katalytické vlastnosti nového typu enzýmu majú perspektívu využitia v biokonverzii rastlinnej hmoty ako aj na modifikáciu reologických vlastností glukurónoxylánu. Projekt APVV SK-ZA-0005-07 (**Chemický ústav SAV**).

RYABOVA, O. - VRŠANSKÁ, M. - KANEKO, S. - VAN ZYL, W.H. - BIELY, P. A novel family of hemicellulolytic α -glucuronidase. In *FEBS Letters*. Vol. 583, (2009), p. 1457-1462. (3.264 – IF2008)

2.3.4. Zámery na čerpanie štrukturálnych fondov EÚ v ďalších výzvach

Chemický ústav SAV participoval v roku 2009 v 3 úspešných projektoch výzvy OPVaV-2008/4.1/01-SORO štrukturálnych fondov EÚ - vo všetkých ako partner. V roku 2009 podal ústav 8 projektov v rámci výziev OP ŠF, z toho 2 ako podávateľ a 6 projektov ako partner. Z podaných projektov boli 2 schválené, 2 vyradené (z formálnych nedostatkov) a 4 sú v štádiu posudzovania.

Čerpanie bude zamerané najmä na vybavenie pracoviska prístrojmi, ktoré sú nevyhnutné pre udržanie unikátneho postavenia Chemického ústavu SAV v oblasti výskumu glykomiky. Vzhľadom na dlhoročné podfinancovanie kapitálovými prostriedkami je infraštruktúra ústavu nedostatočná. Doteraz sa tento nedostatok čiastočne riešil spoluprácou so zahraničnými pracoviskami, avšak z dlhodobého hľadiska takýto stav nie je akceptovateľný.

2.4. Publikačná činnosť (bibliografické údaje výstupov sú uvedené v Prílohe C)

Tabuľka 2e. Štatistika vybraných kategórií publikácií

PUBLIKAČNÁ A EDIČNÁ ČINNOSŤ	Počet v 2009/ doplňky z 2008
1. Vedecké monografie vydané v domácich vydavateľstvách (AAB, ABB, CAB)	0/0
2. Vedecké monografie vydané v zahraničných vydavateľstvách (AAA, ABA, CAA)	0/0
3. Odborné monografie, vysokoškolské učebnice a učebné texty vydané v domácich vydavateľstvách (BAB, ACB)	0/0
4. Odborné monografie, vysokoškolské učebnice a učebné texty vydané v zahraničných vydavateľstvách (BAA, ACA)	0/0
5. Kapitoly vo vedeckých monografiách vydaných v domácich vydavateľstvách (ABD, ACD)	0/0
6. Kapitoly vo vedeckých monografiách vydaných v zahraničných vydavateľstvách (ABC, ACC)	6/0
7. Kapitoly v odborných monografiách, vysokoškolských učebniciach a učebných textoch vydaných v domácich vydavateľstvách (BBB, ACD)	0/0
8. Kapitoly v odborných monografiách, vysokoškolských učebniciach a učebných textoch vydaných v zahraničných vydavateľstvách (BBA, ACC)	0/0
9. Vedecké a odborné práce v časopisoch evidovaných v Current Contents (ADC, ADCA, ADCB, ADD, ADDA, ADDB, CDC, CDCA, CDCB, CDD, CDDA, CDDb, BDC, BDCA, BDCB, BDD, BDdA, BDDB)	68/6
10. Vedecké a odborné práce v nekarentovaných časopisoch (ADE, ADEA, ADEB, ADF, ADFA, ADFB, CDE, CDEA, CDEB, CDF, CDFA, CDFB, BDE, BDEA, BDEB, BDF, BDFA, BDFB)	4/1

11. Vedecké a odborné práce v zborníkoch (konferenčných aj nekonferenčných, vydaných tlačou alebo na CD)	
a/ recenzovaných (AEC, AED, AFA, AFB, AFBA, AFBB, BEC, BED, CEC, CED)	5/0
b/ nerecenzovaných (AEE, AEF, AFC, AFD, AFDA, AFDB, BEE, BEF)	3/0
12. Vydané periodiká evidované v Current Contents	1/0
13. Ostatné vydané periodiká	0/0
14. Vydané alebo editované zborníky z vedeckých podujatí (FAI)	1/0
15. Vedecké práce uverejnené na internete (GHG)	1/0
16. Preklady vedeckých a odborných textov (EAJ)	0/0

Tabuľka 2f. Ohlasy

OHLASY	Počet v r. 2008	Doplňky z r. 2007
Citácie vo WOS (1.1, 2.1)	1378	32
Citácie v SCOPUS (1.2., 2.2)	29	0
Citácie v iných citačných indexoch a databázach (9, 10)	0	0
Citácie v publikáciách neregistrovaných v citačných indexoch (3. 4)	39	24
Recenzie na práce autorov z organizácie (5, 6, 7, 8)	0	0

2.5. Aktívna účasť na vedeckých podujatiach

Tabuľka 2g. Konferencie (počet v r. 2009 a doplnky za r. 2008)

Prednášky a vývesky na medzinárodných vedeckých podujatiach	106/0
Prednášky a vývesky na domácich vedeckých podujatiach	7/0

2.6. Vyžiadané prednášky

2.6.1. Vyžiadané prednášky na medzinárodných konferenciách

BIELY, P. Towards recognition of the structure, function and biotechnological potential of carbohydrate esterases. In *Gordon Research Conference on Cellulosomes, Cellulases & Other Carbohydrate Modifying Enzymes*, 26-31 July 2009, Proctor Academy, Andover, New Hamshire, USA. (vyžiadaná prednáška - Dr. Biely)

BIELY, P. - VRŠANSKÁ, M. Microbial xylanases - properties and applications. In *BIOTECH METU 2009 - International Symposium on Biotechnology: Developments and*

Trends, 27-30 September 2009, Middle East Technical University, Ankara, Turkey.
(vyžiadaná prednáška - Dr. Biely)

CAPEK, P. - MATULOVÁ, M. - KANEKO, S. - NAVARINI, L. - SUGGI-LIVERANI, F. Reinvestigation of instant coffee powder polysaccharides from *Coffea arabica* L.: An arabinogalactan-protein. In *CARBO-XXIV - 24th Carbohydrate Conference*, 7-9 December 2009, Jodhpur, India. (vyžiadaná prednáška - Dr. Capek)
Abstract published: In *Souvenir and Scientific Abstracts: CARBO-XXIV - 24th Carbohydrate Conference*, 7-9 December 2009, Jodhpur, India. Jodhpur: Lachoo Memorial College of Science & Technology, 2009. p. PL-03.

FARKAŠ, V. - MAZÁŇ, M. - ARROYO, J. - BLANCO, N. Enzymatic properties of Crh proteins involved in yeast cell wall formation. In *IVth International Conference on Molecular Mechanisms of Fungal Cell Wall Biogenesis*, 30 August - 3 September, 2009, Warsaw, Poland. (vyžiadaná prednáška - Dr. Farkaš)

FARKAŠ, V. - NEMČOVIČ, M. - JAKUBÍKOVÁ, L. - VÍDEN, I. Volatile communication in *Trichoderma*. In *2nd Central European Forum for Microbiology (CEFORM)*, 7-9 October 2009, Keszthely, Hungary. (vyžiadaná prednáška - Dr. Farkaš)
Abstract published: In *Acta Microbiologica et Immunologica Hungarica*. Vol. 56, (2009), p. 145-146.

HRICOVÍNI, M. Heparin-oligosaccharides-proteins interactions. NMR and theoretical studies of ligands and complexes. In *EAST NMR meeting*, 10-11 February 2009, Otocec, Slovenia. (vyžiadaná prednáška - Dr. Hricovíni)

HRICOVÍNI, M. DFT calculations of NMR parameters in heparin-oligosaccharides. *EAST NMR meeting*, 10-12 December 2009, Budapest, Hungary. (vyžiadaná prednáška - Dr. Hricovíni)

KLAUDINY, J. - BACHANOVÁ, K. - ALBERT, Š. - HALGAŠOVÁ, L. - DZÚROVÁ, M. - KOPERNICKÝ, J. Honeybee defensins: A contribution to their characterization and to the study of their expression in honeybee colonies. In *Czech and Slovak National Conference "Biologically Active Peptides XI"*, 22-24 April 2009, Prague, Czech Republic. (vyžiadaná prednáška - Dr. Klaudiny)

Abstract published: In *Conference Brochure: Czech and Slovak National Conference "Biologically Active Peptides XI"*, April 22-24, 2009, Prague, Czech Republic. Prague: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i., 2009. p. 43.

Full text published: KLAUDINY, J. - BACHANOVÁ, K. - ALBERT, Š. - HALGAŠOVÁ, L. - DZÚROVÁ, M. - KOPERNICKÝ, J. Honeybee defensins: their characterization and studies of their expression in honeybee colonies. In *SLANINOVÁ, J. - VALTER, B. Collection Symposium Series: Biologically Active Peptides - XIth Conference*, Prague, Czech Republic, April 22-24, 2009. Prague: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i., 2009. ISBN 978-80-86241-31-9. Vol. 11, p. 59-63.

KOŠÍKOVÁ, B. Use of lignin and PLA biopolymers as renewable and environmentally desirable additives of polypropylene films. In *Pacific Rim Summit on Industrial Biotechnology & Bioenergy*, 8-11 November 2009, Honolulu, Hawaii. (vyžiadaná prednáška - Dr. Košíková)

Abstract published: In *Conference Brochure: 2009 Bio Pacific Rim Summit*. Washington: Biotechnology Industry Organization, 2009. p. 48-49.

KOŠÍKOVÁ, B. Reduction of DNA-damaging effect of different genotoxins by natural lignin-based preparations. In *BIT Life Sciences' 2nd Annual World Cancer Congress-2009: Gateway to Future Medicine, June 22-25, 2009, Beijing, China*. (vyžiadaná prednáška - Dr. Košíková)

Abstract published: In *Book of Abstracts: BIT's 2nd Annual World Cancer Congress-2009: Gateway to Future Medicine, June 22-25, 2009, Beijing, China*. Dalian: BIT Life Sciences, Inc., 2009. p. 367.

KOŠÍKOVÁ, B. Novel lignin antioxidants for preventing damage DNA and for stabilizing polymeric composites. In *237th American Chemical Society National Meeting & Exposition, March 22-26, 2009, Salt Lake City, UT, USA*. (vyžiadaná prednáška - Dr. Košíková)

Abstract published: In *On-Site Meeting Program: 237th American Chemical Society National Meeting & Exposition, Salt Lake City, UT, March 22-26, 2009*. ACS Chemistry for Life: Washington, 2009. ISBN 978-0-8412-2441-4. p. CELL 211.

KOŠÍKOVÁ, B. Novel applications of lignin preparations isolated from wastes of pulp and paper industry. In *VIII. International Symposium „Selected Processes at the Wood Processing“, 9-11 September 2009, Štúrovo, Slovak Republic*. (vyžiadaná prednáška - Dr. Košíková)

Abstract published: In ČABALOVÁ, I. - GEFFERTO VÁ, J. - DIBDIAKOVÁ, J. *Selected Processes at the Wood Processing - VIII. International Symposium, September 9-11, 2009, Štúrovo, Slovak Republic*. Zvolen: Technical University in Zvolen, 2009. ISBN 978-80-228-2005-9. p. 11.

Full text published: In ČABALOVÁ, I. - GEFFERTO VÁ, J. - DIBDIAKOVÁ, J. *VIII. International Symposium „Selected Processes at the Wood Processing“, Štúrovo 2009*. Zvolen: Technical University in Zvolen, 2009. CD-Rom. Volume of Articles. ISBN 978-80-228-2006-6. 6 p.

PAULOVÍČOVÁ, E. Imunologické aspekty subcelulárnych konjugovaných vakcín. In *XXVI. kongres slovenských a českých alergológov a klinických imunológov SSAKI a CSAKI, 14.-17. október 2009, Žilina*. (vyžiadaná prednáška - Dr. Paulovičová E.)

Abstrakt publikovaný: In *Klinická imunológia a alergológia*. Issue 3, (2009), p.37-38.

ŠEFČOVIČOVÁ, J. - TOMČÍK, P. - FILIP, J. - GEMEINER, P. - TKÁČ, J. A mediatorless electrochemical detection of NADH on a biopolymer dispersed carbon nanotube layer. In *ISABEL 2009: 2nd International Symposium on Applied Sciences in Biomedical and Communication Technologies, November 24-27, 2009, Bratislava, Slovak Republic*. (vyžiadaná prednáška - Dr. Tkáč)

Full text published: In *ISABEL 2009: 2nd International Symposium on Applied Sciences in Biomedical and Communication Technologies, November 24-27, 2009, Bratislava, Slovak Republic*. Bratislava: Slovak University of Technology, 2009. CD Rom, 5 p.

TVAROŠKA, I. Molecular modeling insight into catalytic mechanisms of glycosyl-transferases. In *15th European Carbohydrate Symposium, 19-24 July 2009, Vienna, Austria*. (vyžiadaná prednáška - Dr. Tvaroška)

Abstract published: In KOSMA, P. - SCHMID, W. - KÄHLIG, H. *Book of Abstracts: 15th European Carbohydrate Symposium, July 19-24, 2009, Vienna, Austria*. Vienna: University of Vienna, 2009. p. 19.

TVAROŠKA, I. QM/MM study of the catalytic mechanism of glycosyltransferases. In *The 3rd Japan-Czech-Slovak Symposium on Theoretical and Computational Chemistry, September 9-12, 2009, Bratislava, Slovakia*. (vyžiadaná prednáška - Dr. Tvaroška)
Abstract published: In ČERNUŠÁK, I. - URBAN, M. *Proceedings from the 3rd Japan-Czech-Slovak Symposium for Theoretical and Computational Chemistry*. Bratislava: Comenius University, 2009. ISBN 978-80-223-2707-7. p. 54-55. Available online: <http://www.qch.fns.uniba.sk/GroupPage/conferences/jcs-proc.pdf/>

2.6.2. Vyžiadané prednášky na domácich konferenciách

PAULOVÍČOVÁ, E. Indukcia fagocytovej aktivity a respiračného vzplanutia dLPS konjugátmi u myší. In *Seminár Beckam Coulter: DNA analýza, 29. máj 2009, Bratislava*. (vyžiadaná prednáška - Dr. Paulovičová E.)

PAULOVÍČOVÁ, L. Antiséróm indukovaná kandidacídna aktivita PBL-imunocytometrická detekcia viability *C. albicans*. In *Seminár Beckam Coulter: DNA analýza, 29. máj 2009, Bratislava*. (vyžiadaná prednáška - Dr. Paulovičová L.)

2.6.3. Vyžiadané prednášky na významných vedeckých inštitúciách

BIELY, P. 1. Xylanolytic enzymes: production, properties and applications. 2. Diversity of endo-xylanases in substrate recognition. 3. Accessory xylanolytic enzymes. In *Specialized course „Sustainable Products and Resources“ for MS a PhD students, University of Barcelona, 23-28 March 2009*. (vyžiadané prednášky - Dr. Biely)

BIELY, P. Microbial xylan-degrading enzymes. In *Seminar at Mascoma Corporation, Corporate Office & Research and Development Facility, Lebanon, New Hampshire, USA, 23 July 2009*. (vyžiadaná prednáška - Dr. Biely)

BIELY, P. Special lectures/workshop to postgraduate students and short course „Basic carbohydrate chemistry and biochemistry“. In *Specialized course at Biotechnology Department, University of Sao Paulo, Brazil, 2-21 March 2009*. (vyžiadané prednášky - Dr. Biely)

BIELY, P. 1. Enzyme discovery for bioethanol production. 2. Hemicellulolytic depolymerisation enzymes. 3. Hemicellulolytic accessory enzymes and enzyme synergism. 4. The challenge of measuring enzyme activities. In *PhD course „Biotechnology for Bioethanol Production“, Department of Chemical and Biological Engineering, Chalmers University of Technology, Göteborg, Sweden, 18-23 October 2009*. (vyžiadané prednášky - Dr. Biely)

CAPEK, P. Biological activity of medicinal plant polysaccharides. In *Seminar at University of Burdwan, Burdwan, India, 11 December 2009*. (vyžiadaná prednáška - Dr. Capek)

FARKAŠ, V. Štruktúra, funkcia a biosyntéza bunkových stien kvasiniek. In *Seminár Kvasinkové dny III, Mikrobiologický ústav AV ČR, Praha, Česká republika, 10.-13. november 2009.* (vyžiadaná prednáška - Dr. Farkaš)

PETRUŠ, L. Contribution from nitro sugar chemistry to understanding the ring closure reactions. In *Seminar at University of Camerino, Italy, 21 May 2009.* (vyžiadaná prednáška - Dr. Petruš)

TVAROŠKA, I. Catalytic mechanism of glycosyltransferase and design of transition state inhibitor. In *Seminar at University of Copenhagen, Copenhagen, Denmark, 23 November 2009.* (vyžiadaná prednáška - Dr. Tvaroška)

(Publikované príspevky sú súčasťou Prílohy C, kategória AFC, AFD, AFE, AFF, AFG, AFH)

2.7. Patentová a licenčná činnosť na Slovensku a v zahraničí v roku 2009

2.7.1. Vynálezy, na ktoré bol udelený patent

2.7.2. Prihlásené vynálezy

ÚRAD PRIEMYSELNÉHO VLASTNÍCTVA SLOVENSKEJ REPUBLIKY: *Spôsob simultánneho stanovenia aktivity enzýmov typu transglykozyláz.* Prihlasovateľ: Chemický ústav SAV. Pôvodca: FARKAŠ, Vladimír - KOSÍK, Ondřej. Číslo prihlášky: 5008-2009. Dátum podania prihlášky: 27.1.2009.

ÚŘAD PRŮMYSLOVÉHO VLASTNICTVÍ ČESKÉ REPUBLIKY: *Způsob zvýšení rozpustnosti farmaceuticky aktivních látek a cílený (kontrolovaný) transport do střeva.* KRÁL, V. - OKTÁBEC, Z. - JAMPÍLEK, J. - PEKÁREK, T. - PROKSA, B. - MALOVÍKOVÁ, A. - EBRINGEROVÁ, A. - ŘEZÁČOVÁ, A. - DOHNAL, J. Číslo prihlášky: PV 2009-790. Datum podání: 25.11.2009.

2.7.3. Predané licencie

Súhlas na využívanie produkčného kmeňa a technológie na prípravu spórových inokúl huby *Trichoderma*. Licencia chránená PP 5108-2008 bola predaná firme Azoter, spol. s r. o., Nové Zámky. Príjem: 3500 €.

2.7.4. Realizované patenty

Produkcia spór huby *Trichoderma*, ktoré sú predmetom PP 5108-2008, firmou Azoter, spol. s r. o., Nové Zámky, prevádzka Biozávod, Petrova Ves.

2.8. Iné informácie o vedeckej činnosti

Z celkového počtu 79 vedeckých prác v časopisoch je 74 (94 %) publikovaných v periodikách evidovaných v Current Contents, pričom na 17.7 % z týchto prác sú autormi len pracovníci ústavu, 38 % je publikovaných v spolupráci s domácimi a 44.3 % so zahraničnými spoluautormi.

Impakt faktor periodík, v ktorých sú publikácie uverejnené, sa pohybuje od 0.113 do 7.033, pričom jeho priemerná hodnota je 2.325, čo spolu s úhrnným počtom 1502 citácií (z toho 1410 vo WOS) možno považovať za cenný kvalitatívny ukazovateľ.

V porovnaní s minulým rokom, počet karentovaných publikácií klesol o 7 (74 verzus 81), avšak priemerný impakt faktor vzrástol o 0.540, pričom jeho hodnota (2.325) presahuje, s výnimkou jednej, hodnoty mediánu impaktu faktora pre vedné oblasti, v ktorých na ústave dominuje výskumná činnosť a doktorandské štúdium (MIF = 1.866 pre Chemistry Organic, 2.626 pre Biochemistry & Molecular Biology, 1.127 pre Polymer Science, 2.197 pre Microbiology, 1.907 pre Biotechnology & Applied Microbiology a 1.833 pre Chemistry Physical). Celkový počet citácií vzrástol o 89 (1502 verzus 1413), pričom výrazne - až o 321 (1410 verzus 1089) vzrástol počet citácií vo WOS. Pokles citácií v SCOPUS o 85 (29 verzus 114) a knižných citácií o 147 (63 verzus 210) spôsobila vlnajšia komplexná dohľadávka citácií v týchto kategóriách. Uvedené výstupy indikujú, že sa pozitívne prejavujú organizačné opatrenia v štruktúre ústavu a motivácia tvorivých pracovníkov podľa pravidiel odmeňovania publikačnej činnosti, ktoré vstúpili do platnosti v roku 2005.

Na tomto mieste treba vysloviť uznanie Predsedníctvu SAV a pracovníckam Ústrednej knižnice SAV, že sa aj v roku 2009 podarilo zabezpečiť prístup do elektronických databáz Thomson ISI (Web of Science, Current Contents Connect, Journal of Citation Reports) a databázy Scopus ako aj iných veľmi užitočných plnotextových databáz (ScienceDirect, konzorcium Wiley InterScience, Blackwell Synergy, SpringerLink, JSTOR a iné), čo značne uľahčuje a zefektívňuje vyhľadávanie a sumarizovanie bibliografických ako aj kvantitatívnych a kvalitatívnych scientometrických údajov. Aj keď o užitočnosti časovo obmedzených prístupov do plnotextových databáz niektorých vydavateľstiev, sprostredkovaných Ústrednou knižnicou SAV niet pochyb, značným prínosom pre pracovníkov CHÚ SAV by bolo získanie prístupu do plných textov vybraných časopisov z databáz ACS Publications (American Chemical Society), RSC Publishing (Royal Chemical Society), Thieme Journals (Thieme Medical Publishers), BenthamDirect (Bentham Science Publishers) a Taylor & Francis Group.

Značný počet vyžiadanych recenzií monografií, vedeckých prác v zahraničných časopisoch a grantových projektov zo zahraničia, účasť na medzinárodných vedeckých podujatiach, pozvaných prednášok ako aj počet prijatých zahraničných vedeckých pracovníkov svedčí o vysokej medzinárodnej reputácii ústavu. To sa následne prejavuje pôsobením pracovníkov ústavu ako zahraničných expertov, členstvom resp. funkciami v rôznych medzinárodných organizáciách a vedeckých spoločnostiach, redakčných radách domácich i zahraničných časopisov ako aj organizačných výboroch medzinárodných vedeckých konferencií resp. pozvaniami prednášok na zahraničných univerzitách a iných vedecko-výskumných inštitúciách a vedecko-odborných podujatiach.

Vyzdvihnúť treba značnú aktivitu pri vypracúvaní vedeckých projektov a úspešnosť pri získavaní grantov. Úhrnne sa riešilo 67 projektov - z toho 45 domácich (24 VEGA, 15 APVV, 1 ŠPVV, 2 projekty Centra excelentnosti SAV, 2 projekty výziev FM EHP a 3 projekty OP ŠF) (2 ďalšie projekty OP ŠF z výziev roku 2009 boli už schválené) a 22 zahraničných (3 projekty 6. RP, 2 projekty 7. RP, 8 projektov COST, 2 projekty ESF, 4 projekty v rámci medzivládnych dohôd o VTS, 1 bilaterálny projekt nadväzujúci na MAD a 2 iné projekty financované zo zahraničných zdrojov) a pridelené finančné prostriedky predstavujú sumu ca 909.8 tis. € [z toho je ca 200.5 tis. € zo zahraničia, 625.8 tis. € z domácich projektov a 83.5 tis. € je podpora medzinárodnej spolupráce z národných zdrojov

(MVTS a APVV) na projekty 6. RP EÚ, 7. RP EÚ a COST], čo je vzhľadom na nedostatočnú výšku inštitucionálnej dotácie ústavu zo ŠR významný finančný prínos, pomáhajúci zabezpečiť prevádzku pracoviska. Aj keď v porovnaní s rokom 2008 celkový finančný prínos z grantovej činnosti mierne poklesol (ca o 128 tis. €), financie na výskumné projekty boli v skutočnosti rovnaké, pretože spomenutý pokles sa zaznamenal v súvislosti s ukončením projektu Európskeho sociálneho fondu (129 tis. € prevažne na školenia a administratívne položky).

Ústav trvale venuje pozornosť ochrane nových závažných poznatkov prihlasovaním vynálezov a uplatneniu dosiahnutých výsledkov v priemyselnej praxi (účasť na výstavách, priame kontakty s výrobnými podnikmi a privátnymi spoločnosťami, dohody o spolupráci, spoločné vedecko-výskumné projekty zamerané na realizáciu) a to tak doma ako aj v zahraničí.

Popri ostatných zohľadňovaných kritériách, dosiahnutá kvalita a kvantita vedeckých výstupov a iných aktivít značným spôsobom prispela k tomu, že Chemický ústav SAV bol doteraz pri všetkých akreditáciách zaradený do najvyššej skupiny skupiny A - naposledy pri štvrtej akreditácii v roku 2007 do novoutvorenej najvyššej skupiny A*. O vysokej úrovni výskumu na CHÚ SAV svedčí aj popredné umiestnenie dosiahnuté pri evaluácii pracovísk II. odd. SAV začiatkom roka 2009.

3. Doktorandské štúdium, iná pedagogická činnosť a budovanie ľudských zdrojov pre vedu a techniku

3.1. Údaje o doktorandskom štúdiu

Tabuľka 3a. Počet doktorandov v r. 2009

Forma	Počet k 31.12.2009				Počet ukončených doktorandúr v r. 2009					
	Doktorandi								Ukončenie z dôvodov	
	celkový počet		z toho novoprijatí		úspešnou obhajobou		uplynutím času určeného na štúdium	neobhájením dizertačnej práce alebo neudelením vedeckej hodnosti	rodinných, zdravotných a iných resp. bez udania dôvodu	nevykonania odbornej skúšky
	M	Ž	M	Ž	M	Ž				
Denná	3	9	1	4	0	1	2	0	3	0
Externá	3	2	1	0	3	3	1	0	0	0
Spolu	6	11	2	4	3	4	3	0	3	0

3.2. Zmena formy doktorandského štúdia

Tabuľka 3b. Preradenie z dennej formy na externú a z externej na dennú

	Počet
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Preradenie z dennej formy na externú	0
Preradenie z externej formy na dennú	0

3.3. Zoznam doktorandov, ktorí ukončili doktorandské štúdium úspešnou obhajobou

Tabuľka 3c. Menný zoznam ukončených doktorandov v roku 2009

Meno doktoranda	Forma DŠ	Dátum nástupu na DŠ	Dátum obhajoby	Číslo a názov študijného/vedného odboru	Meno a organizácia školiteľa	Fakulta udeľujúca vec. hodnosť
Ing. Ondřej Kosík	externá	09.2005	01.2009	14-10-9 biochémia	doc. Ing. V. Farkaš, DrSc., CHÚ SAV	FCHPT STU
Ing. Izabela Medovarská	externá	09.2003	07.2009	14-10-9 biochémia	RNDr. E. Machová, PhD., CHÚ SAV	PriF UK
Ing. Jana Šefčovičová	denná	10.2005	09.2009	5.2.25. biotechnológia	Ing. P. Gemeiner, DrSc., CHÚ SAV	FCHPT STU
Mgr. Peter Both	externá	09.2004	10.2009	4.1.22. biochémia	RNDr. J. Mucha, CSc., CHÚ SAV	J. Furier Univ., Grenoble, FR
Ing. Soňa Garajová	externá	09.2005	10.2009	4.1.22 biochémia	Ing. E. Stratilová, PhD., CHÚ SAV	FCHPT STU
Mgr. Michal Vojtech	externá	09.2004	12.2009	4.1.16. organická chémia	RNDr. Mária Petrušová, PhD., CHÚ SAV	PriF UK
Ing. Zuzana Košťálová	externá	09.2005	12.2009	4.1.19. makromolekulová chémia	Ing. Z. Hromádková, PhD., CHÚ SAV	FCHPT STU

3.4. Zoznam akreditovaných študijných odborov s uvedením VŠ

Tabuľka 3d. Zoznam akreditovaných študijných odborov s uvedením univerzity/vysokej školy a fakulty, kde sa doktorandský študijný program uskutočňuje

Názov študijného odboru (ŠO)	Číslo ŠO	Doktorandský študijný program uskutočňovaný na: (univerzita/vysoká škola a fakulta)
Organická chémia	4.1.16	Univerzita Komenského, Prírodovedecká fakulta
Organická chémia	4.1.16	STU, Fakulta chemickej a potravinárskej technológie
Fyzikálna chémia	4.1.18	Univerzita Komenského, Prírodovedecká fakulta
Fyzikálna chémia	4.1.18	STU, Fakulta chemickej a potravinárskej technológie
Makromolekulová chémia	4.1.19	STU, Fakulta chemickej a potravinárskej technológie
Biochémia	4.1.22	Univerzita Komenského, Prírodovedecká fakulta
Biochémia	4.1.22	STU, Fakulta chemickej a potravinárskej technológie
Mikrobiológia	4.2.7	Univerzita Komenského, Prírodovedecká fakulta
Biotechnológia	5.2.25	Univerzita Komenského, Prírodovedecká fakulta
Biotechnológia	5.2.25	STU, Fakulta chemickej a potravinárskej technológie

Tabuľka 3e. Účasť na pedagogickom procese

Menný prehľad pracovníkov, ktorí boli menovaní do odborových komisií pre doktorandské štúdium*	Menný prehľad pracovníkov, ktorí pôsobili ako členovia vedeckých rád univerzít a správnych rád univerzít a fakúlt**	Menný prehľad pracovníkov, ktorí získali vyššiu vedeckú, pedagogickú hodnosť alebo vyšší kvalifikačný stupeň (s uvedením hodnosti/stupňa)
Doc. Ing. Ladislav Petruš, DrSc. (4.1.16. organická chémia - PriF UK; PriF UK a FCHPT STU)	Doc. Ing. Ladislav Petruš, DrSc. (Vedecká rada PriF UK)	Ing. Jaroslav Katrlík, PhD., samostatný vedecký pracovník
Ing. Ján Hirsch, DrSc. (4.1.16. organická chémia - PriF UK; PriF UK a FCHPT STU)		Mgr. Juraj Kóna, PhD. samostatný vedecký pracovník
Ing. Vladimír Kováčik, DrSc. (4.1.17. analytická chémia - PriF UK)		Ing. Ema Paulovičová, PhD., samostatný vedecký pracovník
Ing. Igor Tvaroška, DrSc. (4.1.18. fyzikálna chémia - PriF UK a FCHPT STU)		Ing. Monika Poláková, PhD., samostatný vedecký pracovník
RNDr. Peter Biely, DrSc. (4.1.22. biochémia - FCHPT STU)		Ing. Soňa Garajová, PhD., vedecký pracovník
RNDr. Mária Vršanská, PhD. (4.1.22. biochémia - PriF UK)		Ing. Izabela Medovarská, PhD., vedecký pracovník
Doc. Ing. Vladimír Farkaš, DrSc. (4.2.7. mikrobiológia - PriF UK)		Ing. Jana Šefčovičová, PhD., vedecký pracovník
RNDr. Desana Lišková, PhD. (4.2.9. fyziológia rastlín - PriF UK)		
Ing. Peter Gemeiner, DrSc. (5.2.25. biotechnológie - PriF UK a FCHPT STU)		

*V zátvorke sú uvedené čísla a názvy študijných odborov; **v zátvorke sú uvedené príslušné skratky názvov fakúlt/univerzít/VŠ.

3.5. Údaje o pedagogickej činnosti

Tabuľka 3f. Prednášky a cvičenia vedené v roku 2009

	Prednášky		Cvičenia	
	doma	v zahraničí	doma	v zahraničí
Počet prednášateľov alebo vedúcich cvičení	7	2	7	1
Celkový počet hodín v r. 2009	84	52	648	30

Prehľad prednášateľov predmetov a vedúcich cvičení, s uvedením názvu predmetu, úväzku, katedry, fakulty, univerzity/vysokej školy je uvedený v Prílohe D.

Tabuľka 3g. Aktivity pracovníkov na VŠ

1.	Počet pracovníkov, ktorí pôsobili ako vedúci alebo konzultanti diplomových a bakalárskych prác	3
2.	Počet vedených alebo konzultovaných diplomových a bakalárskych prác	5
3.	Počet pracovníkov, ktorí pôsobili ako školitelia doktorandov (PhD.)	15
4.	Počet oponovaných dizertačných a habilitačných prác	8
5.	Počet pracovníkov, ktorí oponovali dizertačné a habilitačné práce	5
6.	Počet pracovníkov, ktorí pôsobili ako členovia komisií pre obhajoby DrSc. prác	3
7.	Počet pracovníkov, ktorí pôsobili ako členovia komisií pre obhajoby PhD. prác	13
8.	Počet pracovníkov, ktorí pôsobili ako členovia komisií, resp. oponenti v inauguračnom alebo habilitačnom konaní na vysokých školách	0

3.6. Iné dôležité informácie k pedagogickej činnosti

Chemický ústav SAV bol v roku 2009 školiacim pracoviskom v 6-tich študijných odboroch a naďalej disponuje dostatočnou kapacitou kvalifikovaných školiteľov. Doktorandský študijný program sa uskutočňoval na Prírodovedeckej fakulte UK v Bratislave (v študijných odboroch 4.1.16 organická chémia, 4.1.18 fyzikálna chémia, 4.1.22 biochémia, 4.2.7 mikrobiológia) a na Fakulte chemickej a potravinárskej technológie STU v Bratislave (študijné odbory 4.1.16 organická chémia, 4.1.18 fyzikálna chémia, 4.1.19 makromolekulová chémia, 4.1.22 biochémia, 5.2.25 biotechnológia).

V priebehu roka 2009 sa na CHÚ SAV celkom školilo 24 doktorandov, z toho 14 riadnych doktorandov denného štúdia a 10 externí doktorandi. V roku 2009 bolo prijatých 6 doktorandov, z toho 5 v dennom štúdiu a 1 v externom štúdiu. Dúfame, že tento trend bude v budúcnosti pokračovať a počty doktorandov na ústave budú stabilizované a obsadené budú všetky pridelené doktorandské miesta. V minulosti bol záujem zo strany študentov hlavne o odbor biochémia, v tomto roku sa presadil najmä odbor biotechnológia (3), ďalej biochémia (2) a organická chémia (1). Dlhodobu menší záujem zo strany študentov je o odbor makromolekulová chémia. Obávame sa, že sa začínajú negatívne prejavovať nevýhody externej vzdelávacej inštitúcie zakotvené v novom vysokoškolskom zákone a taktiež dopad všeobecného nezájmu mladej generácie o štúdium v odboroch z oblasti prírodných vied.

V roku 2009 siedmi doktorandi úspešne obhájili doktorandskú dizertačnú prácu. Z toho počtu boli 6 externí doktorandi, z ktorých sa štyria po ukončení 3-ročného doktorandského štúdia stali zamestnancami CHÚ s termínovanými pracovnými zmluvami a 1 doktorand v dennej forme štúdia. Všetky posudky oponentov dizertačných prác boli priaznivé, úroveň prác bola kvalitná, začo treba vysloviť uznanie školiteľom - vedeckým pracovníkom Chemického ústavu SAV.

Všetkým doktorandom doktorandského štúdia riadeného podľa zákona č. 131/2002 Z. z. o vysokých školách, ktorým uplynulo určené 3-ročné študijné obdobie, sa ukončenie doktorandúry umožnilo na základe termínovaných pracovných zmlúv (1 rok).

Na základe výsledkov kontrolných dní, ktoré sa konali v októbri 2009, sa dá predpokladať, že v roku 2010 by malo doktorandskú dizertačnú prácu obhajovať ca 6

doktorandov (4 doktorandi podľa nového vysokoškolského zákona a poslední dvaja ešte podľa starého systému).

Doktorandi sa aktívne zapájajú do vedeckého a spoločenského života na ústave. Svoje požiadavky, návrhy, resp. pripomienky majú možnosť predniesť, okrem iného, aj na Ústavnej rade prostredníctvom svojho voleného zástupcu.

4. Medzinárodná vedecká spolupráca

4.1. Medzinárodné vedecké podujatia

4.1.1. Medzinárodné vedecké podujatia, ktoré organizácia organizovala v roku 2009 alebo sa na ich organizácii podieľala, s vyhodnotením vedeckého a spoločenského prínosu podujatia

37th Annual Conference on Yeasts, Smolenice, May 13-15, 2009

(37. Výročná konferencia o kvasinkách, Smolenice, 13.-15. máj 2009)

Vedecký program konferencie bol rozdelený do troch sekcií: 1. Genetics and molecular biology of yeasts; 2. Cell biology and medical mycology a 3. Biotechnology.

Vďaka sponzorskej podpore a občianskemu združeniu NATURA odznali prednášky renomovaných vedcov ako Hahn-Hägerdal B., Poláková S. (Švédsko), Suk Hoo Yoon, (Južná Kórea), Weselake R.J. (Kanada), van Zyl W.H. (Južná Afrika), Raspor P. (Slovinsko), Sipiczki M., Maráz A. (Maďarsko), Sullivan D. (Írsko), Chołbiński P., Palamarczyk G., Juchimiuk M., (Poľsko), Popolo L. (Taliansko), Arroyo J. (Španielsko), Petrezsélyová S. (Česká republika), Buc M. (Slovensko).

Celkovo odznalo 28 prednášok z toho 3 prednášky boli hrazené občianskym združením NATURA a 11 prednášok sponzorovala Komisia pre kvasinky z grantu Medzinárodného Višegrádskeho Fondu (IVF). Prezentovaných bolo 53 plagátových vývesiek. Na tejto konferencii sa stretli pracovníci z VŠ, SAV ako aj z priemyslu. Čoraz viac o ňu prejavujú záujem vedeckí pracovníci zo všetkých krajín V4 ale aj ostatných krajín.

Počet účastníkov: 91, z toho 47 zahraničných.

EAST NMR Regional Meeting, Bratislava, December 15-16, 2009

(EAST NMR regionálny míting, Bratislava, 15.-16. december 2009)

Vedecký program konferencie, ktorej sa zúčastnili najmä pracovníci NMR spektroskopie, bol rozdelený do dvoch dní: Úvodná plenárna prednáška, ktorú predniesol prof. V. Sklenář z Masarykovej univerzity v Brne bola venovaná biomolekulárnej NMR spektroskopii. Ďalšie prednášky (prof. Batta, University of Debrecen a prof. Ejchart, University of Warsaw) boli venované dynamickým vlastnostiam biomolekúl. Ostatné príspevky sa venovali hlavne problematike štruktúry sacharidov ako aj teoretickým aspektom NMR. Celkovo odznalo 11 prednášok.

Počet účastníkov: 25, z toho 13 zahraničných.

4.1.2. Medzinárodné vedecké podujatia, ktoré usporiada organizácia v roku 2010

38th Annual Conference on Yeasts, Smolenice, May 11-14, 2010

(38. Výročná konferencia o kvasinkách, Smolenice, 11.-14. máj 2010)

doc. Ing. Vladimír Farkaš, DrSc., 02/59410216, chemvfar@savba.sk

4.1.3. Počet pracovníkov v programových a organizačných výboroch medzinárodných konferencií

Tabuľka 4a. Programové a organizačné výbory medzinárodných konferencií

Typ výboru	Programový	Organizačný	Programový i organizačný
Počet členstiev	7	9	3

37th Annual Conference on Yeasts (37. Výročná konferencia o kvasinkách), Smolenice, May 13-15, 2009

4 pracovníci v organizačnom výbore: Farkaš, Breierová, Kolarova, Guthová

1 pracovník v programovom výbore: Paulovičová E.

38th Annual Conference on Yeasts (38. Výročná konferencia o kvasinkách), Smolenice, May 11-14, 2010

4 pracovníci v organizačnom výbore: Farkaš, Breierová, Kolarova, Guthová

1 pracovník v programovom výbore: Paulovičová E.

BIOTECH METU 2009 - International Symposium on Biotechnology: Development and Trends, Middle East Technical University, Ankara, Turkey, 27-30 September 2009

1 pracovník v programovom (vedeckom) výbore: Biely

61. Zjazd chemikov, Vysoké Tatry, Tatranské Matliare, 7.-11. september 2009

1 pracovník v programovom výbore: Hirsch

15th European Carbohydrate Symposium EUROCARB 15, Vienna, Austria, July 19-24, 2009

1 pracovník v programovom výbore: Hirsch

The 3rd Japan-Czech-Slovak Symposium on Theoretical and Computational Chemistry, Bratislava, September 9-12, 2009

1 pracovník v programovom výbore: Tvaroška

16th European Carbohydrate Symposium EUROCARB 16, Sorrento (Naples), Italy, July 3-8, 2011

1 pracovník v programovom výbore: Tvaroška

International Conference Glyco XXI, Vienna, August 21-26, 2011

1 pracovník v organizačnom výbore: Tvaroška

EAST NMR Regional Meeting, Bratislava, December 15-16, 2009

3 pracovníci v organizačnom a programovom výbore: Hricovíni, Matulová, Zalibera

4.2. Členstvo a funkcie v medzinárodných orgánoch

4.2.1. Členstvo a funkcie v medzinárodných vedeckých spoločnostiach, úniách a národných komitétach SR

RNDr. Peter Biely, DrSc.

- člen International Commission for Yeasts of the International Union of Microbiological Societies
- člen Slovenského národného komitétu pre biochémiu a molekulárnu biológiu
- národný zástupca v Management Committee COST Action 928, COST Action 868 a COST Action FP0602

Ing. Emília Breierová, PhD.

- tajomníčka Komisie pre kvasinky Československej spoločnosti mikrobiologickej

Doc. Ing. Vladimír Farkaš, DrSc.

- člen Slovenského národného komitétu pre biochémiu a molekulárnu biológiu
- predseda Komisie pre kvasinky Československej spoločnosti mikrobiologickej

Ing. Peter Gemeiner, DrSc.

- člen Bioencapsulation Research Group (Europe-Canada)
- národný zástupca v Management Committee COST Action 865 - Working Groups 2 and 4 a COST Action CM0701

Ing. Ján Hirsch, DrSc.

- reprezentant Slovenska v International Carbohydrate Organization
- reprezentant Slovenska v European Carbohydrate Organization
- člen American Chemical Society

Ing. Miloš Hricovíni, PhD.

- člen American Chemical Society

Ing. Zdenka Hromádková, PhD.

- národná zástupkyňa v Management Committee COST Action FP0901

RNDr. Daniela Kákoniová, PhD.

- členka Federation of European Societies of Plant Biology (FESPB)

Ing. Miroslav Kooš, DrSc.

- člen International Society of Heterocyclic Chemistry

RNDr. Desana Lišková, PhD.

- členka International Association of Plant Tissue Cultures - Biotechnology (IAPTC-B)
- členka Federation of European Societies of Plant Biology (FESPB)
- národná zástupkyňa v Management Committee COST Action 859 - Phytotechnologies to promote sustainable land use and management and improve food safety

Prof. RNDr. Alexander Lux, CSc.

- člen Federation of European Societies of Plant Biology (FESPB)
- národný zástupca v Management Committee COST Action 859 - Phytotechnologies to promote sustainable land use and management and improve food safety

Ing. Mária Mastihubová, PhD.

- člen American Chemical Society

RNDr. Mária Matulová, PhD.

- člen Steering Committee of the ESF RNP in PESC „Multidisciplinary Frontiers of Magnetic Resonance” (EMAR)

- člen American Chemical Society

RNDr. Ján Mucha, PhD.

- člen Steering Committee of the ESF RNP in LESC „The EuroGlycosciences Forum”

Ing. Vladimír Pätoprstý, PhD.

- člen Arbeitsgruppe für Molekül-Spektroskopie der Österreichischen Gesellschaft für Analytische Chemie

- člen American Society for Mass Spectrometry

- reprezentant Slovenska v International Society for Mass Spectrometry

Doc. Ing. Ladislav Petruš, DrSc.

- reprezentant Slovenska v COST Chemistry and Molecular Sciences and Technologies (CMST) Domain Committee

- čestný člen Českej chemickej spoločnosti

Ing. Elena Sláviková, PhD.

- členka Komisie pre kvasinky Československej spoločnosti mikrobiologickej

Ing. Igor Tvaroška, DrSc.

- člen International Steering Committee of the International Consortium on Anti-Virals (ISC ICAV)

RNDr. Mária Vršanská, PhD.

- národná zástupkyňa v Management Committee COST Action 928 a COST Action FP0602

Zbierka kultúr kvasiniek

- člen European Culture Collections' Organization (ECCO)

- člen World Federation of Culture Collection (WFCC)

4.2.2. Členstvo v redakčných radách medzinárodných časopisov

RNDr. Peter Biely, DrSc.

- Yeast Newsletter (Associate Editor)

Ing. Peter Gemeiner, DrSc.

- Biotechnology and Applied Biochemistry

- Biotechnology Letters

- Artificial Cells, Blood Substitutes, and Biotechnology

Ing. Miloš Hricovíni, PhD.

- Open Glycoscience

Ing. Miroslav Kooš, DrSc.

- Molecules

- Open Glycoscience

Ing. Vladimír Kováčik, DrSc.

- Chemia Analityczna—Chemical Analysis

Prof. RNDr. Alexander Lux, CSc. - Environmental Experimental Botany

- Plant Growth Regulation
- Root Journal
- Doc. Ing. Ladislav Petruš, DrSc. - ARKIVOC (Arkiv of Organic Chemistry)
- Ing. Igor Tvaroška, DrSc. - Open Glycoscience
- International Journal of Carbohydrate Chemistry

4.3. Účast' expertov na hodnotení medzinárodných projektov (EÚ, RP, ESF a iných)

Doc. Ing. Vladimír Farkaš, DrSc., Ing. Peter Gemeiner, DrSc., Ing. Ján Hirsch, DrSc., Ing. Grigorij Kogan, DrSc.

- experti 7. Rámcového programu EÚ

Ing. Peter Gemeiner, DrSc., Ing. Grigorij Kogan, DrSc.

- členovia komisie pre hodnotenie projektov Marie Curie Individual Fellowship (EÚ)

Ing. Igor Tvaroška, DrSc.

- predseda oponentnej rady projektu LC06030 - Biomolekulární centrum (2006-2010, MSM/LC), riešeného v rámci programu LC - Centra základního výzkumu (MŠMT) (hlavný riešiteľ: prof. Sklenář, Přírodovědecká fakulta, Masarykova univerzita v Brne). Do tejto funkcie bol Dr. Tvaroška zvolený na korešpondenčnom jednaní Rady Biomolekulárního centra v dňoch 25.-30.11.2008 v Brne.

Tabuľka 4b. Počet pracovníkov hodnotiacich projekty

Meno	Typ programu/projektu	Počet
P. Biely	National Research Foundation, South Africa	1
D. Mislovičová	FP6 NMP3-CT	1

4.4. Najvýznamnejšie prínosy MVTs ústavu vyplývajúce z mobility a riešenia medzinárodných projektov a iné informácie k medzinárodnej vedeckej spolupráci

Okrem participácie na spoločných vedeckých projektoch umožňuje MVTs pracovníkom ústavu najmä dofinancovanie projektov 6. RP a 7. RP, využitie špičkovej prístrojovej techniky (analytickej, výpočtovej) v zahraničí ako aj prístup k potrebným domácim chýbajúcim interdisciplinárnym metodikám, nedostupnej literatúre (knihy, patenty) a materiálnemu vybaveniu (chemikálie, laboratórne zariadenia a pomôcky, ...). V rámci uskutočnenej mobility získali pracovníci ústavu veľmi cenné experimentálne skúsenosti a teoretické poznatky z najmodernejších metodík využívaných v súčasnosti pri riešení vedeckých problémov.

Prostredníctvom MVTs sa viacerí riešitelia projektov mohli zúčastniť významných zahraničných vedeckých podujatí (konferencie, semináre, workshopy) a nadviazať nové kontakty a spolupráce. V tomto smere boli podpísané 3 nové dvojstranné dohody o spolupráci medzi CHÚ SAV a pracoviskami: Food Engineering Department, Engineering Faculty, Ege University, Izmir, Turkey; Institute of Microbiology and Biotechnology, Academy of Sciences of Moldova, Chisinau, Moldova a Mikrobiologickým ústavom AV ČR v Prahe.

Viacerým doktorandom umožnila MVTS stáž na zahraničných pracoviskách. Napr. v rámci MVTS (COST 859) sa nadviazala spolupráca s pracoviskom INRA, Laboratoire Sols et Environnement, Nancy vo Francúzsku, ktorá vyústila najskôr do 3-mesačného pobytu a v súčasnosti do 10-mesačného pobytu nášho pracovníka vo Francúzsku. Z MVTS vyplynula tiež dohoda o záštíte nad doktorandským štúdiom „cotutele“ medzi Chemickým ústavom SAV, STU v Bratislave a Université Blaise Pascal v Clermont-Ferrand (Francúzsko) s témou dizertačnej práce „NMR štúdium metabolizmu baktérií izolovaných z vody oblakov: úloha baktérií v chémii atmosféry“, ktorá pokračovala už tretí rok.

Prehľad údajov o medzinárodnej mobilite pracovníkov ústavu je uvedený v Prílohe E. Prehľad a údaje o medzinárodných projektoch sú uvedené v kapitole 2 a v Prílohe B.

5. Vedná politika

Hlavný smer základného výskumu glykobiológia, t.j. sacharidy a ich úloha v organizmoch aj naďalej tvoria obsah domácich i zahraničných projektov riešených na pracovisku. Pozornosť sa venuje aj cielenému výskumu realizovanému prostredníctvom hospodárskych zmlúv, kontraktov a plnením dohodnutých záväzkov v rámci zmluvnej spolupráce. Značná časť riešiteľskej kapacity ústavu sa venuje vypracovávaniu projektov a grantových žiadostí a to nielen v rámci domácej VEGA, APVV, centier excelentnosti a spolupráce s priemyselnou sférou ale aj v rámci MVTS a to najmä 7. rámcového programu EÚ a vedeckých programov COST, NATO, ESF, INTAS, Európskeho sociálneho fondu a iných fondov a nadácií na podporu vedeckého výskumu. V roku 2008 a 2009 pribudla ešte významná účasť na nových výzvach OP ŠF OPVaV 2.1. a 4.1. ako aj FM EHP.

Organizačné členenie pracoviska na osem vedeckých oddelení, ktoré spolu tvoria Centrum glykomiky a tri spoločné-nevedecké oddelenia, reflektuje hlavné smery výskumu a požiadavky na jeho zabezpečenie. V rámci organizačnej štruktúry sa uplatňuje dvojstupňové riadenie: vedenie ústavu – vedúci vedeckých a spoločných-nevedeckých oddelení.

Základnými dokumentmi pracoviska sú: Zriaďovacia listina Chemického ústavu SAV č. 951/0214/2003 zo dňa 11. decembra 2003 a Dodatok č. 1 (z 19. 12. 2008) k Zriaďovacej listine Chemického ústavu SAV č. 448/G/12/2008 (ktorým sa s účinnosťou od 1. 1. 2009 mení forma hospodárenia z rozpočtovej na príspevkovú), Pracovný poriadok, Organizačný poriadok, Platový poriadok, Bezpečnostné predpisy, Traumatologický plán, Pokyny pre kontrolnú činnosť, Dohoda medzi ústavmi SAV sídliacimi v budove správcovanej Chemickým ústavom a tiež Kolektívna zmluva so Základnou organizáciou odborového zväzu. V súvislosti s viacerými zmenami v zákonoch NR SR, nariadeniach vlády SR, vyhláškach a pokynoch MZ SR týkajúcich sa ochrany zdravia pri práci s nebezpečnými faktormi sme v roku 2008 a 2009 novelizovali relevantné predpisy pre práce s nebezpečnými chemickými faktormi, biologickým materiálom, GMO a pre zaobchádzanie so zdrojmi ionizujúceho

žiarenia, aplikované na pracovné podmienky v CHÚ SAV a získali príslušné oprávnenia od kompetentných orgánov.

Ústav venuje veľkú pozornosť mladej generácii a omladzovaniu kádrov. V rámci vedeckej výchovy sa na ústave v priebehu roka školí okolo 20 doktorandov, pričom každoročne sa vypisuje konkurzné konanie na ca 4 nové miesta interného doktorandského štúdia. Po úspešnej obhajobe doktorandských dizertačných prác sa mladí vedeckí pracovníci spravidla vysielajú na 1–3 ročnú postdoktorandskú stáž do zahraničia, niektorí sa uchádzajú o

štipendium z podporného fondu Štefana Schwarza. Podľa možností sa ústav snaží takto vyškolených postdoktorandov potom zamestnať, aby uplatnili svoje vedomosti a získané skúsenosti pri riešení projektov v rámci CHÚ SAV. V snahe získať mladých adeptov vedy sa pracovníci ústavu aktívne zapájajú aj do pedagogickej činnosti na univerzitách (prednášky, cvičenia, vedenie diplomových prác, preddiplomová prax) a propagujú výsledky vedeckej činnosti (médiá, konferencie, semináre, letné školy, dni otvorených dverí).

6. Spolupráca s univerzitami/vysokými školami, štátnymi a neziskovými inštitúciami okrem aktivít uvedených v kap. 2, 3, 4

6.1. Spolupráca s univerzitami/VŠ (fakultami)

Slovenská technická univerzita, Bratislava

Fakulta chemickej a potravinárskej technológie

Ústav chemického a environmentálneho inžinierstva

Oddelenie chemického a biochemického inžinierstva

Druh spolupráce: Spoluúčasť na riešení projektu APVV

Začiatok spolupráce: 2006

Zameranie: Vývoj matematického modelu Baeyer-Villigerovej oxidácie katalyzovanej enkapsulovanými bunkami *E. coli*.

Zhodnotenie: Výsledkom spolupráce sú 2 publikácie v tlači a 1 poster.

Ústav biotechnológie a potravinárstva

Oddelenie biochemickej technológie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2007

Zameranie: Vplyv stresu na pigmentotvorné kvasinky.

Zhodnotenie: Výsledkom spolupráce je spoločná kapitola v knihe.

Druh spolupráce: Riešenie spoločného projektu VEGA

Začiatok spolupráce: 2007

Zameranie: Stabilita a vlastnosti imobilizovaných mikroorganizmov a enzýmov.

Zhodnotenie: Výsledkom spolupráce je 1 poster.

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2006

Zameranie: Štúdium enzýmových transglykozylačných reakcií.

Zhodnotenie: Výsledkom spolupráce je 1 spoločný poster.

Ústav biotechnológie a potravinárstva

Oddelenie potravinárskej technológie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2006

Zameranie: Vývoj metód riadenia kvality potravín a výrobkov pre ochranu zdravia.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Ústav organickej chémie, katalýzy a petrochémie

Oddelenie organickej chémie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2007

Zameranie: Syntéza sacharidových aldehydov - reaktantov pre prípravu chirálnych nitrónov.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Ústav fyzikálnej chémie a chemickej fyziky

Oddelenie fyzikálnej chémie

Druh spolupráce: Spoluúčasť na riešení projektu Centra excelentnosti SAV

Začiatok spolupráce: 2007

Zameranie: Pokročilá výpočtová chémia.

Zhodnotenie: Spoločné stretnutie slovensko, česko a japonských kvantových chemikov.

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Vplyv prídavku penicilamínu na degradáciu hyalurónanu kyselinou askorbovou v prítomnosti iónov medi.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Ústav biochémie, výživy a ochrany zdravia

Oddelenie biochémie a mikrobiológie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Štúdium ovplyvnenia DNA cyklu mutagénymi látkami.

Zhodnotenie: Výsledkom spolupráce je 1 publikácia v štádiu prípravy.

Ústav analytickej chémie

Oddelenie NMR a hmotnostnej spektrometrie

Druh spolupráce: Spoluúčasť na riešení projektu ŠPVV

Začiatok spolupráce: 2005

Zameranie: Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu.

Zhodnotenie: Vybavenie CHÚ dvomi NMR spektrometrami (400 a 600 MHz).

Univerzita Komenského, Bratislava

Prírodovedecká fakulta

Katedra biochémie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Kvasinkové spoločenstvo osídľujúce bryndzu.

Zhodnotenie: Výsledkom spolupráce je spoločná publikácia, ktorej obsahom je popis nového kvasinkového druhu *Geotrichum bryndzae* sp. nov.

Druh spolupráce: Riešenie spoločného projektu APVV

Začiatok spolupráce: 2006

Zameranie: Syntéza a biologická evaluácia niektorých modelových zlúčenín s potenciálnou antimykobakteriálnou aktivitou.

Zhodnotenie: Výsledkom spolupráce sú 2 postre na medzinárodných sympóziách a spoločná publikácia v recenznom konaní.

Katedra fyziológie rastlín

Druh spolupráce: Riešenie spoločných projektov VEGA, APVV a COST

Začiatok spolupráce: 2007

Zameranie: Využitie rastlín pre dekontamináciu životného prostredia od toxických kovov a obohatenie poľnohospodárskych rastlín o dôležité minerálne látky a štúdium biologickej aktivity galaktoglukomanánových oligosacharidov vo vývinových procesoch a obrane rastlín.

Zhodnotenie: Výsledkom spolupráce sú 2 spoločné publikácie.

Katedra mikrobiológie a virológie

Druh spolupráce: Riešenie spoločného projektu VEGA

Začiatok spolupráce: 2007

Zameranie: Modulácia adherencie a rezistencie voči antifungálnym látkam u patogénnych kvasiniek rodu *Candida* počas tvorby biofilmu.

Zhodnotenie: Výsledkom spolupráce sú 2 postre.

Katedra fyzikálnej a teoretickej chémie

Druh spolupráce: Spoluúčasť na riešení projektu Centra excelentnosti SAV

Začiatok spolupráce: 2007

Zameranie: Pokročilá výpočtová chémia.

Zhodnotenie: Spoločné stretnutie slovensko, česko a japonských kvantových chemikov.

Katedra organickej chémie

Druh spolupráce: Spoluúčasť na riešení projektu ŠPVV

Začiatok spolupráce: 2005

Zameranie: Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu.

Zhodnotenie: Vybavenie CHÚ dvomi NMR spektrometrami (400 a 600 MHz).

Druh spolupráce: Spoluúčasť na riešení projektu APVV

Začiatok spolupráce: 2006

Zameranie: Syntéza a biologická evaluácia niektorých modelových zlúčenín s potenciálnou antimykobakteriálnou aktivitou.

Zhodnotenie: Výsledkom spolupráce je 1 poster na medzinárodnom sympóziu.

Ústav bunkovej biológie

Druh spolupráce: Riešenie spoločných projektov VEGA a COST

Začiatok spolupráce: 2007

Zameranie: Štúdium nových rastových regulátorov na rast a delenie buniek v podmienkach in vitro a štúdium biologickej aktivity galaktoglukomanánových oligosacharidov v regeneračných procesoch.

Zhodnotenie: Výsledkom spolupráce sú 2 spoločné publikácie v recenznom konaní.

Druh spolupráce: Spoluúčasť na riešení projektu APVV

Začiatok spolupráce: 2007

Zameranie: Príprava lipopolysacharidov z rôznych kmeňov *Vibrio cholerae*. Znovu hroziace patogény – vibriá. Štúdium virulencie a možnej aktívnej imunomodulačnej ochrany.
Zhodnotenie: Výsledkom spolupráce sú 2 prezentácie na konferenciách.

Lekárska fakulta

Detská fakultná nemocnica s poliklinikou v Bratislave Oddelenie klinickej imunológie a alergológie

Druh spolupráce: Neformálna spolupráca
Začiatok spolupráce: 2007
Zameranie: Overovanie imunomodulačných vlastností beta-glukánu u pacientov s tonzilitídami.
Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Detská fakultná nemocnica s poliklinikou v Bratislave, II. Detská klinika

Druh spolupráce: Spoluúčasť na riešení projektu VEGA
Začiatok spolupráce: 2004
Zameranie: Diagnostika Fabryho choroby a syndrómu hyper-IgD - stanovenie sérových hladín IgD.
Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Farmaceutická fakulta

Katedra farmakognózie a botaniky

Druh spolupráce: Neformálna spolupráca
Začiatok spolupráce: 2007
Zameranie: Príprava a kultivácia rastlinných kultúr *in vitro* pre produkciu, resp. elicitáciu sekundárnych látok so zaujímavými vlastnosťami pre farmáciu a medicínu.
Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Katedra farmaceutickej analýzy a nukleárnej farmácie

Druh spolupráce: Spoluúčasť na riešení projektu VEGA
Začiatok spolupráce: 2007
Zameranie: Konštrukcia biosenzorov pre prietokovú injekčnú analýzu.
Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Fakulta matematiky, fyziky a informatiky

Katedra jadrovej fyziky a biofyziky

Oddelenie chemickej fyziky

Druh spolupráce: Spoluúčasť na riešení projektu Centra excelentnosti SAV
Začiatok spolupráce: 2007
Zameranie: Pokročilá výpočtová chémia.
Zhodnotenie: Spoločné stretnutie slovensko, česko a japonských kvantových chemikov.

Jesséniova lekárska fakulta, Martin

Ústav farmakológie

Druh spolupráce: Spolupráca na riešení projektu APVV.
Začiatok spolupráce: 2008

Zameranie: Štúdium vzťahu chemickej štruktúry a antitusického účinku rastlinných substancií, ktoré predstavujú potenciálne pomocné prípravky vo fytoterapii kašľa.
Zhodnotenie: Výsledkom spolupráce sú 2 spoločné publikácie a 1 poster.

Slovenská zdravotnícka univerzita, Bratislava

Vedeckovýskumná základňa SZU

Oddelenie mikrobiológie

Druh spolupráce: Spoluúčasť na riešení projektu APVV
Začiatok spolupráce: 2007
Zameranie: Príprava lipopolysacharidov z rôznych kmeňov *Vibrio cholerae*. Znovu hroziace patogény – vibriá. Štúdium virulencie a možnej aktívnej imunomodulačnej ochrany.
Zhodnotenie: Výsledkom spolupráce sú 2 spoločné prezentácie na konferenciách.

Univerzita P. J. Šafárika, Košice

Prírodovedecká fakulta

Katedra organickej chémie

Druh spolupráce: Spoluúčasť na riešení projektu ŠPVV
Začiatok spolupráce: 2005
Zameranie: Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu.
Zhodnotenie: Vybavenie CHÚ dvomi NMR spektrometrami (400 a 600 MHz).

Technická univerzita v Košiciach

Fakulta elektrotechniky a informatiky

Druh spolupráce: Spoluúčasť na riešení projektu ŠPVV
Začiatok spolupráce: 2005
Zameranie: Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu.
Zhodnotenie: Vybavenie CHÚ dvomi NMR spektrometrami (400 a 600 MHz).

Slovenská poľnohospodárska univerzita v Nitre

Fakulta agrochémie a rastlinnej výživy

Fakulta ľudskej výživy

Fakulta udržateľného poľnohospodárstva a herbológie

Druh spolupráce: Neformálna spolupráca
Začiatok spolupráce: 2008
Zameranie: Vplyv fungálnych polysacharidov na antioxidačné vlastnosti určitých plodov.
Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Trenčianska univerzita Alexandra Dubčeka, Trenčín

Fakulta priemyselných technológií, Púchov

Katedra chémie a technológie polymérnych materiálov a textilu

Druh spolupráce: Spoluúčasť na riešení projektu VEGA.
Začiatok spolupráce: 2007
Zameranie: Príprava prírodných a cielene hydrofobizovaných polysacharidov s antioxidačnými a asociatívnymi vlastnosťami.
Zhodnotenie: Výsledkom spolupráce sú 2 spoločné publikácie.

Technická univerzita vo Zvolene

Drevárska fakulta

Katedra chémie a chemickej technológie

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2004

Zameranie: Charakterizácia chemických zmien lignínu v procese termickej degradácie smrekového dreva.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Univerzita sv. Cyrila a Metoda, Trnava

Fakulta prírodných vied

Katedra chémie

Dohoda o spolupráci pri riešení vedecko-výskumných úloh, výchove nových absolventov a doktorandov a využívaní modernej prístrojovej techniky.

Vysoké učení technické v Brně, Brno, Česká republika

Fakulta chemická

Ústav chémie potravín a biotechnológií

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Potvrdenie identifikácie niektorých druhov kvasiniek metódou molekulárnej biológie.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná publikácia.

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Využitie kvasiniek a ich metabolitov na sorpciu ťažkých kovov.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná prednáška na konferencii.

Jihočeská univerzita v Českých Budějovicích, České Budějovice, Česká republika

Zemědělská fakulta

Katedra rostlinné výroby a agroekologie

Druh spolupráce: Zmluvná spolupráca (mediústavná dohoda) a spoluúčasť na riešení projektu COST

Začiatok spolupráce: 2009

Zameranie: Príprava polysacharidov s antioxidačnými vlastnosťami a stanovenie fenolových látok pomocou HPLC.

Zhodnotenie: Výsledkom spolupráce je 1 spoločná prednáška na konferencii.

Univerzita Tomáše Bati ve Zlíně, Zlín, Česká republika

Fakulta technologická

Department of Environmental Protection Engineering

Druh spolupráce: Neformálna spolupráca

Začiatok spolupráce: 2008

Zameranie: Štúdium polysacharidov baktérií v čističkách odpadových vôd.

Zhodnotenie: Výsledkom spolupráce je 1 publikácia v štádiu prípravy.

Spoločné pracoviská s univerzitami/VŠ (fakultami)

Združené laboratórium Fourier Transform Infrared Spectroscopy, založené v roku 1995, je spoločným pracoviskom Ústavu anorganickej chémie SAV, Chemického ústavu SAV, Fakulty chemickej a potravinárskej technológie STU a Prírodovedeckej fakulty UK v Bratislave. Prístroj infračervenej spektroskopie je inštalovaný v priestoroch CHÚ SAV a slúži pre potreby základného výskumu v rámci projektov uvedených inštitúcií, na pedagogické účely ako aj základné servisné merania. V roku 2008 získal Ústav anorganickej chémie SAV spolu s Prírodovedeckou fakultou UK finančné prostriedky z projektu APVV na zakúpenie nového infračerveného spektrometra, vybaveného novými prídavnými zariadeniami pre meranie FTIR spektier modernými technikami. Nový spektrometer je umiestnený v spoločnom laboratóriu FTIR spektroskopie a Chemický ústav SAV sa podieľal na zakúpení prístroja finančným príspevkom 16543 €. Chemický ústav sa podieľal na výstupoch združeného pracoviska 6 pôvodnými vedeckými prácami a 3 príspevkami na vedeckých konferenciách.

Dňa 11. mája 2007 bol podpísaný dokument „Zmluva a štatút o združení právnických osôb s názvom Národné centrum nukleárnej magnetickej rezonancie na Slovensku“ (NC NMR). Zmluvu podpísali štatutári zakladajúcich organizácií: FCHPT, STU v Bratislave, FEI TU v Košiciach, PriF UK v Bratislave, UPJŠ v Košiciach, Chemický ústav SAV a Ústav merania SAV v Bratislave. Cieľom centra je koordinácia spoločných činností smerujúcich k ďalšiemu rozvoju a využitiu infraštruktúry vybudovanej v rámci riešenia úlohy „Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu“ riešenej v rámci tematického ŠPVV „Komplexné riešenie podpory a efektívneho využívania infraštruktúry vedy a výskumu v rokoch 2003 až 2010“. Národné centrum NMR (NC NMR) bolo vytvorené za účelom aktívneho pôsobenia a zabezpečovania potrieb NMR služieb najmä v oblasti základného a aplikovaného výskumu, spolupráce s výrobnými organizáciami na Slovensku, zvyšovania vedomostného potenciálu v oblasti NMR na univerzitách, pracoviskách SAV a výskumných ústavoch formou výučby na všetkých stupňoch vysokoškolského štúdia, organizovania seminárov, kurzov, letných škôl a pod., mobilít a stáží domácich i zahraničných študentov a vedeckých pracovníkov, expertíznej a poradenskej činnosti, a prípravy odbornej literatúry. Sieť NC NMR tvoria spolupracujúce centrá NMR lokalizované v inštitúciách, ktoré uzavreli zmluvu o združení. Na Chemickom ústave SAV je lokalizované *Centrum pre štúdium dynamiky a interakcií biomolekúl*, ktoré bolo v roku 2009 vybavené dvomi špičkovými NMR spektrometrami (600 MHz a 400 MHz).

6.2. Významné aplikácie výsledkov výskumu v spoločenskej praxi alebo vyriešenie problému pre štátnu alebo neziskovú inštitúciu

— — —

6.3. Iná činnosť využiteľná pre potreby spoločenskej praxe

Medzinárodné laserové centrum

Vývoj protokolu na určenie viability enkapsulovaných buniek *E. coli* technikou CLSM.

7. Spolupráca s aplikačnou a hospodárskou sférou okrem aktivít uvedených v kap. 2, 3, 4

7.1. Spoločné pracoviská s aplikačnou sférou

7.2. Kontraktový – zmluvný národný a medzinárodný výskum

Názov kontraktu: Izolácia lignínových preparátov z výluhov
Anglický názov: Isolation of lignin preparations from spent liquors
Partner: VIDIA, spol. s r.o., Česká republika
Zodp. riešiteľ z CHÚ: Prof. Ing. Božena Košíková, DrSc.
Začiatok spolupráce: 01/2009
Ukončenie spolupráce: 12/2010
Objem získaných prostriedkov v roku 2009: 36500 €
Stručný opis výstupu/výsledku: Vypracovali sa nové alternatívne postupy izolácie lignínu z výluhov chemického spracovania dreva.

Názov kontraktu: Štúdium štruktúry arabinogalaktanu izolovaného z praženej kávy
Anglický názov: Roasted coffee arabinogalactan structural study
Partner: Illycaffè S.p.A., Trieste, Taliansko
Zodp. riešiteľ z CHÚ: RNDr. Mária Matulová, PhD.
Začiatok spolupráce: 03/2009
Ukončenie spolupráce: 12/2009
Objem získaných prostriedkov v roku 2009: 4000 €
Stručný opis výstupu/výsledku: Publikované bolo komparatívne štúdium arabinogalaktan-proteínov izolovaných z instantnej kávy zo zŕn *Coffea arabica*.

7.3. Iná činnosť využiteľná pre potreby hospodárskej praxe

Biotika, a.s., Slovenská Ľupča

Písomný súhlas k používaniu priemyselných kmeňov *Escherichia coli* a *Trigonopsis variabilis*.

Azoter, spol. s r. o., Nové Zámky

Poradenská činnosť v súvislosti s predanou licenciou na využívanie produkčného kmeňa a technológie na prípravu spórových inokúl huby *Trichoderma*, ktoré sú predmetom PP 5108-2008, v prevádzka Biozávod, Petrova Ves.

Výskumný ústav papiera a celulózy, a.s., Bratislava

Stanovenie elementárneho zloženia (CHN) vzoriek.

Finančný prínos: 60 €

CMS Chemicals, s.r.o., Bratislava

Meranie a interpretácia NMR spektier vzoriek.

Finančný prínos: 160 €

HighChem, Ltd., Bratislava

Testovanie softvéru Mass Frontier 4.0 k interpretácii fragmentácie organických zlúčenín.

Biogema, v.d., Košice

Odborná garancia pri výbere vhodného antigénu a pri predklinickom testovaní vývojových súprav na stanovenie IgG, IgA a IgM protilátok voči *Candida albicans*.

AQUA INVEST SLOVAKIA, s.r.o., Bernolákovo

Chemická a mikrobiologická analýza vodných vzoriek.

8. Aktivity pre Národnú radu SR, vládu SR, ústredné orgány štátnej správy SR a iné organizácie

8.1. Členstvo v poradných zboroch Národnej rady SR, vlády SR, ministerstiev SR

Tabuľka 8a. Členstvo v poradných zboroch Národnej rady SR, vlády SR, ministerstiev SR

Meno pracovníka	Názov orgánu	Funkcia
—	—	—

8.2. Expertízna činnosť a iné služby pre štátnu správu a samosprávu

Ing. Slavomír Bystrický, DrSc., Ing. Peter Gemeiner, DrSc., Ing. Miloš Hricovíni, PhD., RNDr. Mária Matulová, PhD.

- externí členovia komisie pre rozhodovanie v konaní o námietkach pri Úrade pre verejné obstarávanie SR

8.3. Členstvo v radách štátnych programov a podprogramov ŠPVV a ŠO

Tabuľka 8b. Členstvo v radách štátnych programov a podprogramov ŠPVV a ŠO

Meno pracovníka	Názov orgánu	Funkcia
—	—	—

Ing. Peter Gemeiner, DrSc.

- člen Rady APVV pre prírodné vedy, pracovná skupina pre prírodné vedy 2 - chémia

Ing. Miloš Hricovíni, PhD., Ing. Igor Tvaroška, DrSc.

- člen Rady Národného centra NMR

8.4. Prehľad aktuálnych spoločenských problémov, ktoré riešila organizácia v spolupráci s Kanceláriou prezidenta SR, s vládnymi a parlamentnými orgánmi alebo pre ich potrebu

— — —

9. Vedecko-organizačné a popularizačné aktivity

9.1. Vedecko-popularizačná činnosť

Tabuľka 9a. Vedecko-popularizačná činnosť

Meno	Spoluautori	Názov	Miesto zverejnenia	Dátum
<u>Babor K.</u>	–	Originálny výskum overený praxou	<i>ChemZi</i>	09. 2009
<u>Biely P.</u>	–	37th Annual Conference on Yeasts of the Czech and Slovak Commission on Yeasts	<i>Yeast Newsletter</i>	12. 2009
<u>Farkaš P.</u>	Ferko M., Valach M.	Prvá interaktívna konferencia mladých vedcov 2009	<i>Quark</i>	09. 2009
<u>Paulovičová L.</u>	<u>Paulovičová E.</u> , Bystrický S., Karelin A.A., Cvetkov J.J., Nifantjev N.E.	Mechanizmus boja proti kvasinkovým ochoreniam	<i>Quark</i>	09. 2009

9.2. Vedecko-organizačná činnosť

Tabuľka 9b. Vedecko-organizačná činnosť

Názov podujatia	Domáca/ medzinárodná	Miesto	Dátum konania	Počet účastníkov
37 th Annual Conference on Yeasts	medzinárodná	Smolenice	13.-15. máj 2009	91
EAST NMR Regional Meeting	medzinárodná	Bratislava	15.-16. december 2009	25
38 th Annual Conference on Yeasts	medzinárodná	Smolenice	11.-14. máj 2010	96

9.3. Účasť na výstavách

36. medzinárodná poľnohospodárska a potravinárska výstava AGROKOMPLEX 2009, 20.-23. august 2009, Nitra

Ústav prezentoval kolekciu vzácnych sacharidov, ktoré produkuje Realizačné oddelenie a ktoré sú pre potreby základného výskumu chémie a biochémie sacharidov ako aj potravinárskeho a farmaceutického priemyslu distribuované do celého sveta. V tejto súvislosti sa nadväzovali kontakty za účelom získania nových komerčných partnerov. Prezentovala sa tiež zbierka kvasiniek, farebné polysacharidy, chitooligosacharidy, biotechnologické využitie rastlinných kultúr *in vitro* pre zdravie človeka, vybrané publikácie pracovníkov ústavu a katalóg produktov.

Chemický ústav SAV získal na tejto výstave ocenenie „Čestné uznanie ministra pôdohospodárstva SR na Agrokomplexe 2009 za inovatívny prístup pri výrobe D-turanózy z medu“.

Medzinárodný veľtrh vedy, výskumu, vývoja, vzdelávania, inovácií, učebných pomôcok a didaktickej techniky VEDA-VZDELÁVANIE-INOVÁCIE, 16.-18. apríl 2009, Nitra

Realizačné oddelenie CHÚ SAV na veľtrhu prezentovalo sériu vzácnych sacharidov, ktoré sa v prírode nevyskytujú alebo len vo veľmi malom množstve a sú určené predovšetkým pre farmaceutický a potravinársky priemysel.

Milníky chémie, 1. apríl - 30. jún 2009, Bratislava

Organizátormi tejto výstavy, ktorá sa konala ako súčasť osláv 80. výročia založenia Slovenskej chemickej spoločnosti pri SAV, boli: Slovenská chemická spoločnosť pri SAV, Slovenské národné múzeum, Chemický ústav SAV, Ústav anorganickej chémie SAV a Ústav polymérov SAV.

Týždeň vedy a techniky na Slovensku, 2.-6. november 2009, Incheba, Bratislava

Ústav sa na výstave prezentoval expozíciou pod názvom: Centrum pre materiály, vrstvy a systémy pre aplikácie a chemické procesy v extrémnych podmienkach.

9.4. Účast' v programových a organizačných výboroch národných konferencií

Tabuľka 9c. Programové a organizačné výbory národných konferencií

Typ výboru	Programový	Organizačný	Programový i organizačný
Počet členstiev	—	—	—

9.5. Členstvo v redakčných radách domácich časopisov

Ing. Pavol Farkaš, PhD.	- Chemical Papers (assistant editor)
Ing. Peter Gemeiner, DrSc.	- Chemical Papers
Ing. Ján Hirsch, DrSc.	- Chemical Papers (editorial manager)
Ing. Miroslav Kooš, DrSc.	- Chemical Papers (assistant editor)
	- Acta Chimica Slovaca
Prof. Ing. Božena Košíková, DrSc.	- Wood Research
Doc. Ing. Ladislav Petruš, DrSc.	- Chemical Papers
Ing. Igor Tvaroška, DrSc.	- Chemical Papers

9.6. Činnosť v domácich vedeckých spoločnostiach

RNDr. Peter Biely, DrSc.	- člen Učenej spoločnosti SAV
	- člen Slovenskej akademickej spoločnosti
Doc. Ing. Vladimír Farkaš, DrSc.	- predseda Komisie pre kvasinky pri Československej spoločnosti mikrobiologickej
	- člen Učenej spoločnosti SAV
RNDr. Ján Gajdoš, PhD.	- tajomník Odbornej skupiny Sacharidy a glykokonjugáty pri Slovenskej chemickej spoločnosti pri SAV
Ing. Peter Gemeiner, DrSc.	- podpredseda Slovenskej biotechnologickej spoločnosti
	- člen Učenej spoločnosti SAV

Ing. Ján Hirsch, DrSc.	- predseda Odbornej skupiny Sacharidy a glykokonjugáty pri Slovenskej chemickej spoločnosti pri SAV
RNDr. Desana Lišková, PhD.	- predseda Odbornej skupiny Rastlinné explantáty pri Slovenskej botanickej spoločnosti
Prof. RNDr. Alexander Lux, CSc.	- predseda Odbornej skupiny Rastlinná cytológia pri Slovenskej botanickej spoločnosti
Ing. Vladimír Pätoprstý, PhD.	- predseda Slovenskej spoločnosti hmotnostnej spektrometrie
Doc. Ing. Ladislav Petruš, DrSc.	- podpredseda Odbornej skupiny Organická chémia pri Slovenskej chemickej spoločnosti pri SAV
Ing. Igor Tvaroška, DrSc.	- člen Učenej spoločnosti SAV

10. Činnosť knižnično-informačného pracoviska

10.1. Knižničný fond

Tabuľka 10a. Knižničný fond

Knižničné jednotky spolu		25463
z toho	knihy a zviazané periodiká	25463
	audiovizuálne dokumenty	0
	elektronické dokumenty (vrátane digitálnych)	0
	mikroformy	0
	iné špeciálne dokumenty - dizertácie, výskumné správy	0
Počet titulov dochádzajúcich periodík		6
z toho zahraničné periodiká		5
Ročný prírastok knižničných jednotiek		155
v tom	kúpou	155
	darom	0
	výmenou	0
	bezodplatným prevodom	0
Úbytky knižničných jednotiek		0
Knižničné jednotky spracované automatizovane		5

10.2. Výpožičky a služby

Tabuľka 10b. Výpožičky a služby

Výpožičky spolu		183
z toho	odborná literatúra pre dospelých	12
	výpožičky periodík	43
	prezenčné výpožičky	128
MVS iným knižniciam		21
MVS z iných knižníc		12
MMVS iným knižniciam		2

MMVS z iných knižníc	6
Počet vypracovaných bibliografií	0
Počet vypracovaných rešerší	0

10.3. Používatelia

Tabuľka 10c. Užívatelia

Registrovaní používatelia	0
Návštevníci knižnice spolu (bez návštevníkov podujatí)	67

10.4. Iné údaje

Tabuľka 10d. Iné údaje

On-line katalóg knižnice na internete (1 = áno, 0 = nie)	1
Náklady na nákup knižničného fondu v €	307

10.5. Iné informácie o knižničnej činnosti

11. Aktivity v orgánoch SAV

11.1. Členstvo vo Výbore Snemu SAV

Ing. Miroslav Kooš, DrSc.
- člen Výboru Snemu SAV (za II. komoru snemu)

11.2. Členstvo v Predsedníctve SAV a vo Vedeckej rade SAV

doc. Ing. Ladislav Petruš, DrSc.
- člen Predsedníctva SAV
- člen Vedeckej rady SAV

11.3. Členstvo vo vedeckých kolégiách SAV

Ing. Peter Gemeiner, DrSc.	- člen Vedeckého kolégia SAV pre chemické vedy
Ing. Ján Hirsch, DrSc.	- člen Vedeckého kolégia SAV pre chemické vedy
RNDr. Desana Lišková, PhD.	- členka Vedeckého kolégia SAV pre biologicko-ekologické vedy
doc. Ing. Ladislav Petruš, DrSc.	- člen Vedeckého kolégia SAV pre chemické vedy
Ing. Igor Tvaroška, DrSc.	- člen Vedeckého kolégia SAV pre chemické vedy

11.4. Členstvo v komisiách SAV

Ing. Ján Hirsch, DrSc.

- člen Rady programu centier excelentnosti SAV
- člen Edičnej rady SAV

Ing. Miroslav Kooš, DrSc.

- člen Komisie SAV pre posudzovanie vedeckej kvalifikácie zamestnancov
- člen Komisie SAV pre duševné vlastníctvo
- člen Knižničnej rady SAV

Ing. Peter Magdolen

- člen Dislokačnej komisie SAV

doc. Ing. Ladislav Petruš, DrSc.

- predseda Komisie SAV pre medzinárodnú vedecko-technickú spoluprácu
- predseda Komisie SAV pre životné prostredie
- člen Komisie SAV pre zahraničné styky
- člen Komisie SAV pre duševné vlastníctvo
- člen Komisie SAV pre infraštruktúru
- člen Dislokačnej komisie SAV
- člen Poroty pre udeľovanie medzinárodnej ceny SAV

Ing. Elena Sláviková, PhD.

- členka Komisie SAV pre životné prostredie

Ing. Igor Tvaroška, DrSc.

- predseda Kontrolnej rady SAV pre činnosť SÚZ SAV
- člen Správnej rady Technologického inštitútu SAV

doc. Ing. Vladimír Farkaš, DrSc.

- Rada SAV pre vzdelávanie a doktorandské štúdium
- člen komisie pre FM EHP (Blokový grant)

11.5. Členstvo v orgánoch VEGA

Ing. Peter Gemeiner, DrSc.

- predseda Komisie VEGA č. 3 pre chemické vedy, chemické inžinierstvo a biotechnológie
- člen rozšíreného Predsedníctva grantovej agentúry VEGA

Ing. Miloš Hricovíni, PhD.

Ing. Miroslav Kooš, DrSc.

- členovia Komisie VEGA č. 3 pre chemické vedy, chemické inžinierstvo a biotechnológie

12. Hospodárenie organizácie

12.3. Náklady PO SAV

Tabuľka 12c. Náklady PO SAV (v €)

Kategória	Plán na	Skutočnosť	z toho:
-----------	---------	------------	---------

	rok 2009 (posl. uprav.)	k 31.12.2009 celkom		
Kapitálové výdavky	rd 180289	k 31.12.2009	30299	150260
	(posl. uprav.)	celkom		
Náklady spolu:	3030388	3030388	1930898	1099490
z toho:				
- mzdové náklady (účet 521)	1391727	1391727	1157606	234121
- odvody do poisťovni a NÚP (účet 524)	423868	423868	395307	28561
- vedecká výchova	84414	84414	84414	–
- náklady na projekty (VEGA, APVT, APVV, ŠPVV, MVTS, ESF a iné)	–	–	–	–
- náklady na vydávanie periodickej tlače	21535	21535	6606	14931

12.4. Tržby PO SAV

Tabuľka 12d. Tržby PO SAV (v €)

Kategória	Plán na rok 2009	Plnenie k 31.12.2009
Výnosy spolu:	2924289	2924289
z toho:		
- príspevok na prevádzku	1961197	1961197
- vlastné tržby spolu:	190157	190157
z toho:		
- tržby za nájomné	13822	13822
- tržby na riešenie projektov (tuzemských + zahraničných)	759113	759113

13. Nadácie a fondy pri organizácii SAV

Chemický ústav SAV nespravoval v roku 2009 žiadnu nadáciu ani fondy.

14. Iné významné činnosti organizácie SAV

Organickou súčasťou ústavu je Zbierka kultúr kvasiniek (Culture Collection of Yeasts), ktorá je členom Organizácie európskych zbierok (ECCO), Svetovej federácie zbierok mikroorganizmov (WFCC), je registrovaná vo Svetovom katalógu kultúr (CCY 333) a má štatút medzinárodného ukladacieho centra patentovo chránených kmeňov (je v nej uložených asi 3500 kmeňov kvasiniek a kvasinkovitých mikroorganizmov, z toho 350 typových kultúr a kmeňov chránených patentami). Počet vydaných kultúr v roku 2009: 90 (19 pre CHÚ, 28 pre iné pracoviská v SR a 43 pre zahraničie). Získané kultúry v roku 2009: 52 (36 samostatne izolovaných a 16 získaných zo zahraničia). Príjem za honorované služby (predané kultúry,

identifikované kmene, úschova a rekultivácia kmeňov) predstavoval 2214,77 € a úspora predstavovala 2130 € (570 € za kmene pre CHÚ a 1560 € za izolované a získané kmene).

Chemický ústav SAV je vydavateľom časopisu *Chemical Papers (Chemické Zvesti)* - jediného odborného periodika vydávaného na Slovensku, ktoré publikuje pôvodné vedecké práce z oblasti chémie v anglickom jazyku. Časopis je abstrahovaný/indexovaný v Analytical Abstracts, Biological Abstracts, Chemical Abstracts Service, Chemistry Citation Index, Current Contents/Physical, Chemical and Earth Sciences, Index to Scientific Reviews, Mass Spectrometry Bulletin, Mathematical Science Citation Index, Reaction Citation Index, Referativnyi Zhurnal a Science Citation Index Expanded. Činnosť redakcie časopisu zabezpečuje personálne aj materiálne Chemický ústav. Od roku 2007 prešlo publikovanie tlačenej aj elektronickej verzie časopisu do kompetencie vydavateľstva Springer-Verlag GmbH (Publisher: Versita, co-published with Springer-Verlag GmbH).

V Realizačnom oddelení ústavu sa na základe priebežne dosahovaných výsledkov základného výskumu vyrába široký sortiment vzácnych sacharidov. Tieto dodáva na zahraničný trh, niektoré ako jediný producent na svete. Ústav je v priamom styku s viacerými poprednými svetovými firmami a prostredníctvom obchodných partnerov má kontakty s najvýznamnejšími dodávateľmi čistých chemikálií. Celkové tržby z komerčnej činnosti Realizačného oddelenia dosiahli v roku 2009 ca 115671 €. V dôsledku celosvetovej finančnej a hospodárskej krízy poklesli tržby v porovnaní s rokom 2008 takmer o polovicu.

Analytické oddelenie poskytuje analytické, chromatografické, elektroforetické a spektroskopické stanovenia a merania ako aj kompletne analytické a štrukturálne charakterizácie produktov a študovaných látok iným pracoviskám. Príjmy zo služieb ústavom SAV, katedrám a ústavom vysokých škôl, rezortným a súkromným výskumným a výrobným organizáciám predstavovali 5458 €. Príjmy za rozborý vody, ktoré poskytuje špeciálne laboratórium zriadené na tieto účely, predstavovali sumu ca 14900 €.

15. Vyznamenania, ocenenia a ceny udelené pracovníkom organizácie v roku 2009

15.1. Domáce ocenenia

15.1.1. Ocenenia SAV

Národné centrum nukleárnej magnetickej rezonancie - v zastúpení:

RNDr. Mária Matulová, PhD., Ing. Miloš Hricovíni, PhD.

- *Cena Slovenskej akadémie vied za budovanie infraštruktúry pre vedu*

15.1.2. Iné domáce ocenenia

Doc. Ing. Ladislav Petruš, DrSc.

- *Pamätná medaila Slovenskej chemickej spoločnosti*

Chemický ústav SAV

- *Čestné uznanie ministra pôdohospodárstva SR za inovatívny prístup pri výrobe D-turanózy z medu*

na 36. medzinárodnej poľnohospodárskej a potravinárskej výstave AGROKOMPLEX 2009, Nitra.

Prof. Ing. Božena Košíková, DrSc.

- *Cena TOP 2009 - 3. miesto v kategórii „Progresívna idea“*

na 15. ročníku medzinárodnej konferencie Technika ochrany prostredia TOP 2009 - za prácu B. Košíková, J. Lábaj: Nové aplikácie lignínových odpadov chemického spracovania dreva.

Ing. Ján Hirsch, DrSc., Ing. Igor Tvaroška, DrSc.

- *Pozdravný list Slovenskej chemickej spoločnosti pri SAV*

za vedeckú, pedagogickú, organizátorskú a vedeckopopularizačnú prácu prispievajúcu k rozvoju chémie ako aj za zásluhy a rozvoj Slovenskej chemickej spoločnosti pri SAV.

Ing. Lucia Paulovičová

- *Cena Ľudovíta Drobnicu - 3. miesto*

v súťaži mladých vedeckých pracovníkov o najlepšiu vedeckú prácu v odboroch biochémie a molekulárna biológia, Drobnicov memoriál, 5. ročník.

PAULOVÍČOVÁ, L. - PAULOVÍČOVÁ, E. - BYSTRICKÝ, S. - KARELIN, A.A. - TSVETKOV, Y.E. - NIFANTIEV, N.E. Imunogénnosť semisyntetických oligosacharid-BSA konjugátov ako potenciálnych kandidátov antikandidovej vakcíny. In *Zborník príspevkov, Drobnicov memoriál, 5. ročník, 2.-4. september 2009, Rajecká Lesná*. Bratislava: Ústav molekulárnej biológie a genetiky a Slovenská spoločnosť pre biochémiu a molekulárnu biológiu, 2009. ISBN 978-80-970164-1-8. p. 62-63.

Mgr. Zuzana Neščáková

- *Čestné uznanie za najlepší poster*

v súťaži mladých vedeckých pracovníkov o najlepšiu vedeckú prácu v odboroch biochémie a molekulárna biológia, Drobnicov memoriál, 5. ročník.

NEŠČÁKOVÁ, Z. - BYSTRICKÝ, S. Prietoková cytometria-sledovanie imunofenotypu a stanovenie absolútnych počtov B lymfocytov počas imunizácie glykokonjugátmi. In *Zborník príspevkov, Drobnicov memoriál, 5. ročník, 2.-4. september 2009, Rajecká Lesná*. Bratislava: Ústav molekulárnej biológie a genetiky a Slovenská spoločnosť pre biochémiu a molekulárnu biológiu, 2009. ISBN 978-80-970164-1-8. p.84-85.

15.2. Medzinárodné ocenenia

Mgr. Ivan Zelko, PhD.

- *Poster Award*

za poster „Effect of root structure on root cadmium uptake in maize“ on 7th ISRR Symposium Root Research and Applications, BOKU Wien, Austria, 2009.

RNDr. Peter Biely, DrSc.

- *Fellow of International Academy of Wood Science* (zvolený za člena v roku 2009)

16. Poskytovanie informácií v súlade so zákonom č. 211/2000 Z. z. o slobodnom prístupe k informáciám v znení neskorších predpisov (Zákon o slobode informácií)

V tejto súvislosti Chemický ústav nebol kontaktovaný žiadnou fyzickou ani právnickou osobou. Informácie o pracovisku sú voľne dostupné na internete (www.chem.sk) ako aj z knižných brožúr vydaných za roky 1953-1993, 1993-1997 a 1998-2002.

17. Problémy a podnety na činnosť SAV

a) Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu

Chemický ústav SAV sa v roku 2003 zapojil do riešenia úlohy výskumu a vývoja „Dobudovanie špičkového laboratória so zameraním na NMR“ v rámci tematického štátneho programu výskumu a vývoja „Komplexné riešenie podpory a efektívneho využívania infraštruktúry výskumu a vývoja“. Riešenie tejto úlohy vyústilo do vzniku Národného centra NMR (NC NMR), v ktorom sa združilo šesť (FCHPT STU, PriF UK, CHÚ SAV a ÚM SAV v Bratislave a PriF UPJŠ a FEI TU v Košiciach) pracovísk NMR - špecializovaných centier s dôrazom na rôzne vedné oblasti.

V súvislosti s postupným dobudovaním NMR laboratória v CHÚ SAV - Centra pre štúdium štruktúry, dynamiky a interakcií biomolekúl, sa na základe výberového konania uzavrela dohoda s firmou Varian o dodaní dvoch NMR prístrojov (400 MHz a 600 MHz). Prvý z nich (400 MHz) bol dodaný už v roku 2008 a do prevádzky bol uvedený vo februári 2009. Druhý prístroj (600 MHz), ktorý spĺňa náročné požiadavky kladené na moderné prístroje tohto druhu využívané v oblasti štúdia biologicky aktívnych látok, bol uvedený do prevádzky v druhom polroku 2009. Národné centrum NMR - Centrum pre štúdium dynamiky a interakcií biomolekúl bolo na CHÚ SAV slávnostne otvorené 15. decembra 2009 za účasti predsedu SAV prof. J. Pastoreka, členov Predsedníctva SAV prof. D. Ježovej a doc. L. Petruša, vedúceho NC NMR doc. T. Liptaja a vedúcich organizácií a zodpovedných riešiteľov z pracovísk NC NMR.

b) Pridelovanie finančných prostriedkov zo ŠR na schválené projekty

Opätovne apelujeme na včasné pridelenie schválených finančných prostriedkov zo ŠR na všetky druhy grantových projektov v kalendárnom roku (aj keď v tomto smere už pozorujeme určité zlepšenie), aby oneskorené platby nekomplikovali organizáciu práce riešiacich kolektívov a plnenie harmonogramu etáp riešenia projektov a zároveň, aby mohla byť plnená požiadavka štátnej pokladnice na rovnomerné čerpanie štátnych finančných prostriedkov v priebehu roka.

Apelujeme na P SAV aby jednalo s MŠ SR o pridelení dostatočných finančných prostriedkov na pravidelné vyhlásenie všeobecnej výzvy APVV.

Oceňujeme rozhodnutie P SAV pri príprave rozpočtu na rok 2010, ktorým sa o 40 % navyšujú finančné prostriedky na granty akademickej agentúry VEGA.

c) Iné problémy pracoviska

Nedostatok kapitálových finančných prostriedkov neumožnil v roku 2009 výraznejšiu obnovu prístrojového vybavenia v Analytickom oddelení. Vzhľadom na morálne a fyzické opotrebovanie niektorých prístrojov musel ústav vynakladať značné úsilie na ich prevádzku a zabezpečenie činnosti. V havarijnom stave je najmä hmotnostný spektrometer (v súčasnosti nefunkčný) a plynová chromatografia. K určitému vylepšeniu dôjde už v roku 2010 vďaka

finančným prostriedkov z troch projektov OP ŠF, v ktorých ústav participuje ako partner. Situáciu by však uspokojivo vyriešilo schválenie aspoň jedného z dvoch projektov OP ŠF, v ktorých ústav figuruje ako podávateľ, kde sa výrazne počíta s nákupom modernej prístrojovej techniky.

V súvislosti s nevyhnutnou obnovou prístrojového a laboratórneho vybavenia, bude v najbližšom období potrebné dofinancovať Zbierku kvasiniek kapitálovými prostriedkami.

Vzhľadom k havarijnému stavu zdravotníckej techniky (vodoinštalácia, odpady) v celej budove, je nevyhnutné pripraviť projekt a následne plán na jej postupnú komplexnú rekonštrukciu. V tomto smere bude potrebné vyčleniť čo najskôr prostriedky z rozpočtu SAV, inak môže byť ohrozená činnosť šiestich ústavov sídliacich v budove.

Správu o činnosti CHÚ SAV spracovali:	Ing. Miroslav Kooš, DrSc.	tel.: 59410254
Ekonomická časť:	Ing. Antónia Barlíková	tel.: 59410202

Prílohy

Príloha A

Zoznam zamestnancov a doktorandov organizácie k 31. 12. 2009

Zoznam zamestnancov podľa štruktúry (nadväzne na údaje v Tabuľke 1a)

Vedúci vedeckí pracovníci DrSc.	úväzok v %	rieš. kapacita v h/rok
--	-------------------	-------------------------------

Biely Peter, RNDr., DrSc.	100	2000
Bystrický Slavomír, Ing., DrSc.	100	2000
Farkaš Vladimír, doc., Ing., DrSc.	100	2000
Gemeiner Peter, Ing., DrSc.	100	2000
Hirsch Ján, Ing., DrSc.	100	2000
Koós Miroslav, Ing., DrSc.	100	2000
Košíková Božena, prof., Ing., DrSc.	100	2000
Kováčik Vladimír, Ing., DrSc.	70	1400
Petruš Ladislav, doc., Ing., DrSc.	100	2000
Šimkovic Ivan, Ing., DrSc.	100	2000
Tvaroška Igor, Ing., DrSc.	100	2000

Samostatní vedeckí pracovníci CSc., PhD.

Breierová Emília, Ing., PhD.	100	2000
Capek Peter, Mgr., PhD.	100	2000
Gajdoš Ján, RNDr., CSc.	100	2000
Hricovíni Miloš, Ing., PhD.	100	2000
Hricoviniová Zuzana, RNDr., PhD.	100	2000
Hromádková Zdena, Ing., PhD.	100	2000
Kákoniová Daniela, RNDr., CSc.	100	2000
Katrlík Jaroslav, Ing., PhD.	100	2000
Klaudiny Jaroslav, RNDr., PhD.	100	2000
Kolarova Nadežda, RNDr., CSc.	60	1200
Kóňa Juraj, Mgr., PhD.	100	2000
Lišková Desana, RNDr., PhD.	100	2000
Lux Alexander, prof., RNDr., CSc.	11	220
Machová Eva, RNDr., PhD.	100	2000
Malovíková Anna, RNDr., PhD.	100	2000
Mastihuba Vladimír, Ing., PhD.	100	2000
Mastihubová Mária, Ing., PhD.	100	2000
Matulová Mária, RNDr., CSc.	100	2000
Mislovičová Danica, Ing., PhD.	100	2000
Mucha Ján, RNDr., PhD.	100	2000
Nahálka Jozef, Ing., PhD.	100	2000
Paulovičová Ema, Ing., CSc.	100	2000
Pätoprstý Vladimír, Ing., PhD.	100	2000
Petrušová Mária, RNDr., PhD.	100	2000
Poláková Monika, Ing., PhD.	100	2000

Sláviková Elena, Ing., PhD.	100	2000
Steiner Bohumil, RNDr., PhD.	100	2000
Stratilová Eva, Ing., PhD.	100	2000
Tkáč Ján, Ing., PhD.	100	2000
Vadkertiová Renáta, Ing., PhD.	100	2000
Vikartovská Alica, Ing., CSc.	100	2000
Vršanská Mária, RNDr., PhD.	100	2000

Vedeckí pracovníci CSc., PhD.

Baráth Marek, Mgr., PhD.	100	2000
Bekešová Slávka, RNDr., PhD.	100	2000
Bučko Marek, Ing., PhD.	100	2000
Farkaš Pavol, Ing., PhD.	100	2000
Garajová Soňa, Ing., PhD.	100	2000
Gregorová Adriána, Ing., PhD.	100	2000
Kákošová Anna, RNDr., PhD.	100	2000
Kollárová Karin, RNDr., PhD.	100	2000
Kozák Ján, RNDr., PhD.	100	2000
Kozmon Stanislav, Mgr., PhD.	10	200
Lattová Erika, RNDr., PhD.	100	2000
Mazán Marián, Ing., PhD.	100	2000
Medovarská Izabela, Ing., PhD.	100	2000
Mičová Júlia, Ing., PhD.	100	2000
Nemčovič Marek, Ing., PhD.	100	2000
Pribulová Božena, Ing., PhD.	100	2000
Spiwok Vojtech, Ing., PhD.	10	200
Šefčovičová Jana, Mgr., PhD.	100	2000
Šesták Sergej, Ing., PhD.	100	2000
Šuchová Katarína, Ing., PhD.	100	2000
Tomčová Ivana, Mgr., PhD.	100	2000
Zelko Ivan, Mgr., PhD.	100	2000

Odborní pracovníci VŠ

Alföldyová Barbora, Bc.	100	2000
Barlíková Antónia, Ing.	100	
Bedrichová Viera, Ing.	100	2000
Both Peter, Mgr.	100	2000
Dzúrová Mária, RNDr.	100	2000
Đuranová Miroslava, Mgr.	100	2000
Farkašová Erika, Bc.	100	2000
Hrabárová Eva, Ing.	100	2000
Košťálová Zuzana, Ing.	100	2000
Krupička Martin, Ing.	100	2000
Magdolen Peter, Ing.	100	2000
Pajtinka Martin, Mgr.	100	2000
Podobová Ema, Ing.	100	
Raab Michal, Mgr.	10	200
Riganová Eva, PhD.	100	

Ryabova Olena, Ing.	100	2000
Sasinková Vlasta, RNDr.	100	2000
Smrtičová Hana, Bc.	100	2000
Švancár Adrián, Ing.	100	2000
Švec Jozef, Ing.	100	2000
Tonka Jozef, Ing.	100	2000
Turjan Jozef, Ing.	100	2000
Uhliariková Iveta, RNDr.	100	2000
Vlčková Silvia, Ing.	100	2000

Odborní pracovníci ÚSV

Bednáriková Mária	100	
Bilačičová Janka	100	
Bordáčová Alena	100	2000
Cziszárová Mária	100	2000
Čigašová Helena	100	2000
Gažíková Ľudmila	100	2000
Guthová Jana	100	2000
Chválková Beáta	100	2000
Izáková Nataša	100	2000
Janáčiová Mária	100	
Kalivodová Beáta	100	2000
Kanská Alžbeta	100	2000
Karovičová Anna	100	2000
Kis Peter	100	2000
Komačková Janka	100	
Kompaník Ľudovít	100	2000
Köplingerová Jana	100	
Kráľovičová Viera	100	2000
Lednická Marta	100	
Morháčová Eva	100	2000
Novosad Milan	100	2000
Plšková Margita	100	2000
Rosová Emília	100	2000
Sabová Kvetoslava	100	2000
Sadloňová Oľga	65	1300
Smolková Zdena	100	2000
Šályová Radoslava	100	2000
Šoltésová Alena	100	2000
Šporánková Nadežda	100	2000
Tóth Vojtech	100	
Vaš Matej	100	2000
Voleková Erika	100	
Weinzettlová Scarlett	100	
Žiškova Dana	100	2000

Ostatní

Chochlík Milan	100	
Csölleová Antónia	100	
Činovský Ivan	50	
Fischerová Ľudmila	100	2000
Lešťanská Helena	100	
Masarovičová Elena	100	
Pazderová Eva	100	
Pír Miroslav	100	
Schneiderová Zita	100	
Špetko František	100	2000
Vavro Ivan	100	
Voleková Veronika	100	

Zoznam doktorandov

Interní doktorandi hrazení z prostředků SAV

Belák Miroslav, Mgr.	100	2000
Filip Jaroslav, Ing.	100	2000
Garaiová Martina, Mgr.	100	2000
Halgašová Lenka, Mgr.	100	2000
Husárová Slavomíra, Mgr.	100	2000
Mészáros Csilla, Ing.	100	2000
Molnárová Jana, Ing.	100	2000
Neščáková Zuzana, Mgr.	100	2000
Raab Michal, Mgr.	100	2000
Schenk Mayerová Andrea, Ing.	100	2000
Šimová Zuzana, Mgr.	100	2000
Korcová Jana, Mgr.	100	2000

Interní doktorandi hrazení z jiných zdrojů

— — —

Externí doktorandi

Đuranová Miroslava, Mgr.	100	2000
Krupička Martin, Ing.	100	2000
Pajtinka Martin, Mgr.	100	2000
Paulovičová Lucia, Ing.	100	2000
Švancár Adrián, Ing.	100	2000

Príloha B

Projekty organizácie - riešené a podané v roku 2009

- a) **Domáce projekty riešené v roku 2009** (členenie podľa tabuľky 2a v kapitole 2.1.)
(A = CHÚ je nositeľom projektu, B = CHÚ sa zmluvne podieľa na riešení projektu)

1A. Vedecké projekty, ktoré boli v roku 2009 financované VEGA

(názov slovenský a anglický, vedúci, doba riešenia, evidenčné číslo, pridelené financie)

Dešifrovanie glykokódu v biologických modeloch biorozpoznávacími technikami použitím exogénnych a nových syntetických lektínov

(Deciphering of the glycode in biological models via biorecognition techniques by the use of exogenous and novel synthetic lectins)

Ing. Peter Gemeiner, DrSc., 01/2007-12/2009, 2/7028/27, 5524 €

Biologické a imunologické vlastnosti sacharidových antigénov u patogénov - využitie pre prípravu subcelulárnych vakcín

(Biological and immunological properties of saccharidic antigens of pathogens - utilization for preparation of subcellular vaccines)

Ing. Slavomír Bystrický, DrSc., 01/2007-12/2009, 2/7029/27, 8209 €

Ionizácia sacharidov

(Ionization of carbohydrates)

Ing. Ivan Šimkovic, DrSc., 01/2007-12/2009, 2/7030/27, 1457 €

Diverzita kvasiniek osídľujúcich povrchy listov s ohľadom na ich vlastnosti, aktivitu a prežívanie

(Diversity of yeasts inhabiting the leaf surfaces with emphasis on their characteristics, activity, and survival)

Ing. Elena Sláviková, PhD., 01/2007-12/2009, 2/7031/27, 4474 €

Príprava nových polymérnych antioxidantov chemickou a biologickou modifikáciou lignínových odpadov z dreva a poľnohospodárskych rastlín

(Preparation of novel polymer antioxidants by chemical and biological modifications of lignin waste products from wood and agricultural plants)

Prof. Ing. Božena Košíková, DrSc., 01/2007-12/2009, 2/7032/27, 3535 €

Využitie stenových polysacharidov húb a kvasiniek v ochrane životného prostredia a prevencii ochorení živočíchov a rastlín

(Application of the fungal cell wall polysaccharides in environmental protection and disease prevention of animals and plants)

RNDr. Eva Machová, PhD., 01/2007-12/2009, 2/7033/27, 3713 €

Regulačný potenciál galaktoglukomanánových oligosacharidov v procese morfogénzy buniek a vývinu koreňa

(Regulatory potential of galactoglucomannan oligosaccharides in cell morphogenesis and root development)

RNDr. Desana Lišková, PhD., 01/2007-12/2009, 2/7048/27, 4232 €

Glykozylhudrolázy sekréčnej dráhy modelového organizmu: klonovanie, expresia, purifikácia a charakterizácia multigénnej rodiny manozidáz z *D. melanogaster*
(**Glycosylhydrolases of secretion pathway of model organism: cloning, expression, purification and characterisation of multigenic family of mannosidases from *D. melanogaster***)

RNDr. Ján Mucha, PhD., 01/2008-12/2010, 2/0095/08, 4338 €

Regulácia uvoľňovania kapsulárneho polysacharidu kvasiniek *Cryptococcus*
(**Regulation of shed of cryptococal capsular polysaccharide**)

RNDr. Nadežda Kolarova, PhD., 01/2008-12/2010, 2/0024/08, 3551 €

Katalytický mechanizmus glykozyltransferáz, dizajn a syntéza ich inhibítorov
(**Catalytic mechanism of glycosyltransferases; design and synthesis of their inhibitors**)

Ing. Ján Hirsch, DrSc., 01/2008-12/2010, 2/0128/08, 7863 €

Biologická aktivita natívnych a modifikovaných polysacharidov z liečivých rastlín
(**Biological activity of native and modified polysaccharides from medicinal plants**)

Mgr. Peter Capek, PhD., 01/2008-12/2010, 2/0155/08, 7863 €

Štúdium štruktúry biologicky aktívnych sacharidov a ich medzimolekulových komplexov metódami NMR spektroskopie a teoretickej chémie
(**Study of structure of biologically active saccharides and their intermolecular complexes using methods of NMR spectroscopy and theoretical chemistry**)

Ing. Miloš Hricovíni, PhD., 01/2008-12/2010, 2/0108/08, 3870 €

Biotenzidy na báze sacharidov
(**Biosurfactants from saccharides**)

Ing. Vladimír Mastihuba, PhD., 01/2008-12/2010, 2/0145/08, 3642 €

Štúdium exprese antimikrobiálnych peptidov-defenzínov vo včelstvách
(**Study of the expression of antibacterial peptides-defensins in honeybee colonies**)

RNDr. Jaroslav Klaudivy, PhD., 01/2009-12/2011, 2/0209/09, 4533 €

Syntéza dlhoreťazcových makrocyclických polyanhydroalditolov
(**Synthesis of the long-chain macrocyclic polyanhydroalditols**)

Doc. Ing. Ladislav Petruš, DrSc., 01/2009-12/2011, 2/0199/09, 19439 € (z toho 12002 € bežné a 7437 € kapitálové)

Glykomika a jej potenciál na charakterizáciu mikroorganizmov
(**Glycomics - its potential for rapid characterization of microorganisms**)

Ing. Vladimír Pätoprstý, PhD., 01/2009-12/2012, 2/0143/09, 5206 €

Prírodné a cielene hydrofobizované polysacharidy s antioxidačnými a asociatívnymi vlastnosťami
(**Natural and tailored hydrophobized polysaccharides with antioxidant and associative properties**)

Ing. Zdenka Hromádková, PhD., 01/2009-12/2012, 2/0062/09, 4693 €

Štruktúrálny dizajn, syntéza a biochemické testovanie indolizidínových zlúčenín s antirakovinotvornými účinkami

(Structure-based design, synthesis and biological evaluation of anti-cancer agents with indolizidine core)

Mgr. Juraj Kóna, PhD., 01/2009-12/2011, 2/0176/09, 5794 €

Transglykozylázy, ich vlastnosti a funkcia pri tvorbe a modifikácii bunkových stien rastlín a húb

(Transglycosylases, their characterization and function in the formation and modification of plant and fungal cell walls)

Doc. Ing. Vladimír Farkaš, DrSc., 01/2009-12/2011, 2/0011/09, 4724 €

Stimulácia konidiácie endogénnymi prchavými látkami v hube Trichoderma

(Stimulation of conidiation by endogenous volatile compounds in Trichoderma)

Ing. Marek Nemčovič, PhD., 01/2009-12/2011, 2/0131/09, 3648 €

1B. Vedecké projekty, ktoré boli v roku 2009 financované VEGA

(názov slovenský a anglický, vedúci, doba riešenia, evidenčné číslo, pridelené financie)

Modulácia adhérencie a rezistencie voči antifungálnym látkam u patogénnych kvasiniek rodu Candida počas tvorby biofilmu

(Modulation of adherence and resistance to antifungal agents in pathogenic yeasts of genus Candida during biofilm formation)

Doc. RNDr. Helena Bujdáková, CSc. (vedúci projektu - MŠ SR)

Ing. Ema Paulovičová, PhD. (zástupca vedúceho projektu pre SAV), 01/2007-12/2009, 1/4324/27, 671 €

Vybrané faktory ovplyvňujúce príjem a transport látok rastlinami využitelnými vo fytotechnológiách

(Selected factors affecting uptake and transport of elements in plants for the use in phytotechnologies)

Prof. RNDr. Alexander Lux, CSc. (vedúci projektu - MŠ SR)

RNDr. Desana Lišková, PhD. (zástupca vedúceho projektu pre SAV), 01/2007-12/2009, 1/4354/27, 1658 €

Vývoj nových imobilizovaných biooxidačných systémov na báze hyperoxygovaných celobunkových/enzýmových biokatalyzátorov pre nové biele biotechnológie

(Development of new immobilized biooxidation systems based on hyperoxygenated whole cell/enzyme biocatalysts for novel white biotechnologies)

Doc. Ing. Michal Rosenberg, PhD. (vedúci projektu - MŠ SR)

Ing. Peter Gemeiner, DrSc. (zástupca vedúceho projektu pre SAV), 01/2007-12/2009, 1/4452/27, 7713 €

Tvorba, vlastnosti a využitie kyslých banských odtokových vôd

(The creation, characteristics and reusing of acid mine drainage)

Doc. Ing. Eva Michalková, CSc. (vedúci projektu - MŠ SR)

Ing. Vladimír Pätoprstý, PhD. (zástupca vedúceho projektu pre SAV), 01/2009-12/2011, 1/0529/09, 1212 €

2A. Projekty, ktoré boli v roku 2009 financované APVV

(názov slovenský a anglický, vedúci, doba riešenia, výzva, evidenčné číslo, pridelené financie)

Mikrobiálne esterázy štiepiace väzby medzi sacharidmi a lignínom v bunkových stenách rastlín

(Microbial esterases cleaving linkages between saccharides and lignin in plant cell walls)

RNDr. Peter Biely, DrSc., 03/2006-10/2009, všeobecná výzva VV 2005, APVV-51-003805, 9559,85 €

Geneticky modifikované mikroorganizmy ako celobunkové katalyzátory enantioselektívnych biooxidácií pre nové imobilizované biotechnológie

(Genetically engineered microorganisms as whole-cell catalysts of enantioselective biooxidations performing novel immobilization biotechnologies)

Ing. Peter Gemeiner, DrSc., 03/2006-10/2009, všeobecná výzva VV 2005, APVV-51-033205, 2987,50 €

Oligosacharidy, neoglykopeptidy/proteíny a humanizované plasty – ich syntéza a aplikácie

(Oligosaccharides, neoglyco-peptides/proteins and humanized plastics – their synthesis and applications)

Ing. Jozef Nahálka, PhD., 03/2006-07/2009, všeobecná výzva VV 2005, APVV-51-040205, 4116,05 €

Syntéza a biologická evaluácia niektorých modelových zlúčenín s potenciálnou antimykobakteriálnou aktivitou

(Synthesis and biological evaluation of some model compounds with potential antimycobacterial activity)

Ing. Monika Poláková, PhD., 03/2006-02/2009, všeobecná výzva VV 2005, APVV-51-046505, 10987,19 € (z toho 2887,87 € pre CHÚ SAV)

Znovu hroziace patogény – vibriá. Štúdium virulencie a možnej aktívnej imunomodulačnej ochrany

(Newly emerging pathogens – vibrios. Study of virulence and possible active immunomodulative prevention)

Ing. Slavomír Bystrický, DrSc., 01/2007-12/2009, všeobecná výzva VV 2006, APVV-51-003206, 95598,49 € (z toho 61376,56 € pre CHÚ SAV)

Počítačové modelovanie, syntéza a biologické testovanie selektívnych inhibítorov Golgi manozidázy II

(Computer modeling, synthesis and biological evaluation of selective inhibitors of Golgi mannosidase II)

Mgr. Juraj Kóňa, PhD., 01/2007-12/2009, všeobecná výzva VV 2006, APVV-51-011706, 34588,06 €

Štúdium antioxidačnej aktivity a adsorpčnej afinity lignínových preparátov izolovaných z odpadov rastlinnej biomasy

(The study of antioxidant activity and adsorption affinity of lignin preparations isolated from wastes of plant biomass)

Prof. Ing. Božena Košíková, DrSc., 01/2007-12/2009, všeobecná výzva VV 2006, APVV-51-012106, 42554,60 € (z toho 39533,95 € pre CHÚ SAV)

Potenciálne inhibítory glykozyldroláz na báze iminosacharidov
(Potential glycosylhydrolases inhibitors based on iminosugar derivatives)

Ing. Miroslav Kooš, DrSc., 09/2008-12/2010, verejná výzva VV 2007, APVV-0366-07, 33691,83 €

Pohyblivosť proteínov a katalýza
(Protein motions and catalysis)

Ing. Igor Tvaroška, DrSc., 09/2008-12/2010, verejná výzva VV 2007, APVV-0607-07, 55500,24 € (z toho 27550,95 € pre CHÚ SAV)

Nová metodológia štrukturálnej analýzy sacharidov a glykokonjugátov
(New methodology of structural analysis of saccharides and glycoconjugates)

Ing. Vladimír Pätoprstý, PhD., 09/2008-12/2010, verejná výzva VV 2007, APVV-0650-07, 32164,91 €

Výber manánového epitopu pre prípravu účinnej antifungálnej vakcíny
(Selection of mannan epitope for the preparation of effective antifungal vaccine)

RNDr. Eva Machová, PhD., 09/2009-08/2012, verejná výzva LPP 2009, APVV-LPP-0194-09, 5533 €

2B. Projekty, ktoré boli v roku 2009 financované APVV

(názov slovenský a anglický, vedúci, doba riešenia, evidenčné číslo, pridelené financie)

Molekulové mechanizmy pôsobenia nových liečiv ovplyvňujúcich oxidačný stres - významný etiopatogenický faktor početných ochorení
(Molecular mechanisms of action of new drugs interfering with oxidative stress - the important factor in etiopathogenesis of numerous diseases)

Doc. MUDr. Svorad Štolc, DrSc. (vedúci projektu - Ústav experimentálnej farmakológie SAV), Ing. Vladimír Kováčik, DrSc. (zodp. riešiteľ z CHÚ SAV), 03/2006-02/2009, všeobecná výzva VV 2005, APVV-51-017905, 1161,79 € (z Ústavu experimentálnej farmakológie SAV)

Celulárne a molekulárne aspekty farmakologickej regulácie prozápalovej aktivity neutrofilov

(Cellular and molecular aspects of pharmacological regulation of proinflammation activity of neutrophils)

Prof. MUDr. Radomír Nosál, DrSc. (vedúci projektu - Ústav experimentálnej farmakológie SAV), Mgr. Martin Pajtinka (zodp. riešiteľ z CHÚ SAV), 09/2008-12/2010, verejná výzva VV 2007, APVV-0315-07, 1461 € (z Ústavu experimentálnej farmakológie SAV)

Využitie rastlinných polysacharidov v liečbe kašľa
(The utilization of plant polysaccharides in the therapy of cough)

Prof. MUDr. Gabriela Nosáľová, DrSc. (vedúca projektu - Jesséniova lekárska fakulta v Martine, Univerzity Komenského v Bratislave), RNDr. Peter Capek, PhD. (zodp. riešiteľ z

CHÚ SAV), 09/2008-12/2010, verejná výzva VV 2007, APVV-0030-07, 12248,56 € (z Jesséniovej lekárskej fakulty v Martine)

Syntéza enantiomérne čistého chalkogranu

(Synthesis of enantiomerically pure chalcogran)

Ing. Pavel Čepec, PhD. (vedúci projektu - Tau-chem, spol. s r.o., Bratislava), Ing. Vladimír Mastihuba, PhD., (zodp. riešiteľ z CHÚ SAV), 09/2009-08/2011, verejná výzva VSMP 2009, VMSP-P-0106-09, 8275 € (z Tau-chem, spol. s r.o., Bratislava)

3A. Projekty OP ŠF

3B. Projekty OP ŠF

Názov projektu: Centrum pre materiály, vrstvy a systémy pre aplikácie a chemické procesy v extrémnych podmienkach
Anglický názov: Centre for materials, layers and systems for applications and chemical processes under extreme conditions
Akronym: MACHINA I
Kód ITMS: 26240120007
Kód výzvy: OPVaV-2008/4.1/01-SORO
Nositeľ projektu: Ústav anorganickej chémie SAV
Zmluvný spoluriešiteľ: CHÚ SAV, ÚPo SAV, FCHPT STU
Zodpovedný riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc.
Doba riešenia: 05/2009-04/2011
Pridelené financie: 1327735,83 € (1128575,46 € z EÚ a 199160,37 € zo ŠR) (z toho 69323,45 € pre CHÚ SAV)

Názov projektu: Centrum excelentnosti metód a procesov zelenej chémie
Anglický názov: Excellence centre for methods and processes of green chemistry
Akronym: CE GREEN I
Kód ITMS: 26240120001
Kód výzvy: OPVaV-2008/4.1/01-SORO
Nositeľ projektu: Univerzita Komenského v Bratislave
Zmluvný spoluriešiteľ: CHÚ SAV, STU v Bratislave
Zodpovedný riešiteľ z CHÚ: Doc. Ing. Ladislav Petruš, DrSc.
Doba riešenia: 05/2009-04/2011
Pridelené financie: 1325418,11 € (z toho 1185900,42 € z EÚ, 139517,69 € zo ŠR a 69758,85 spolufinancovanie)

Názov projektu: Centrum excelentnosti pre ochranu a využívanie krajiny a biodiverzitu
Anglický názov: Center for excellence for protection and use of landscape and biodiversity
Kód ITMS: 26240120014
Kód výzvy: OPVaV-2008/2.1/01-SORO
Nositeľ projektu: Ústav krajinnej ekológie SAV
Zmluvný spoluriešiteľ: CHÚ SAV, ÚZo SAV, ÚMB SAV, BoÚ SAV, ÚH SAV, PriF UK

Zodpovedný riešiteľ z CHÚ: RNDr. Desana Lišková, PhD., Ing. Elena Sláviková, PhD.
Doba riešenia: 05/2009-04/2011
Pridelené financie: 1327756,72 € (1128593,21 € z EÚ a 199163,51 € zo ŠR) (z toho 66388 € pre CHÚ SAV)

4A. Projekty FM EHP

Číslo podprojektu: SAV-FM-EHP-2008-03-05
Názov podprojektu: Funkčné polysacharidy z rastlinných odpadov – spôsob trvalo udržateľného a efektívneho využívania rastlinnej biomasy
Anglický názov: Functional polysaccharides from plant wastes – the way towards a sustainable and effective utilization of the plant biomass
Nositeľ podprojektu: Chemický ústav SAV
Vedúci podprojektu: Ing. Ján Hirsch, DrSc.
Doba riešenia: 10/2008-10/2010
Výška NFP FM EHP: 83858,33 € (na celé 2 roky), z toho: 67715,59 € z FM EHP, 11949,91 € zo ŠR a 4192,93 € z vlastných zdrojov

Číslo podprojektu: SAV-FM-EHP-2008-04-04
Názov podprojektu: Príprava účinných biopalivových článkov založených na využití nanoštruktúr na výrobu elektrickej energie z obnoviteľných zdrojov a organického odpadu
Anglický názov: Preparation of effective biofuel cells based on nanostructure modified interfaces for production of electrical energy from renewable resources and organic waste
Nositeľ podprojektu: Chemický ústav SAV
Vedúci podprojektu: Ing. Ján Tkáč, PhD
Doba riešenia: 10/2008-10/2010
Výška NFP FM EHP: 98925,63 € (na celé 2 roky), z toho: 79882,45 € z FM EHP, 14096,90 € zo ŠR a 4946,28 € z vlastných zdrojov

4B. Projekty FM EHP

5A. Projekty riešené v rámci ŠPVV

5B. Projekty riešené v rámci ŠPVV

Štátny program výskumu a vývoja „Komplexné riešenie podpory a efektívneho využívania infraštruktúry výskumu a vývoja“
(Complex solution of support of research and development infrastructure utilization)
Evidenčné číslo projektu: 2003SP200280203
Úloha: **Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu**

(Completing of top-level nuclear magnetic resonance laboratory)
Kordinátor: Doc. Ing. Tibor Liptaj, CSc. (FCHPT STU)

Spoluriešiteľské organizácie: PRIF UK, FCHPT STU, ÚM SAV, PRIF UPJŠ Košice, HF TU
Košice

Zodp. riešiteľ z CHÚ SAV: Ing. Miloš Hricovíni, PhD.

Doba riešenia: 2006-2010 (druhá etapa)

Pridelovateľ finančných prostriedkov: MŠ SR

Pridelené finančné prostriedky: 43922 €

6A. Projekty centier excelentnosti SAV

**Výskum medicínsky významných sacharidových derivátov
(Research on medically significant saccharide derivatives)**

Akronym: GLYCOMED

Vedúci: Ing. Slavomír Bystrický, DrSc.

Doba riešenia: 01/2009-12/2012

Pridelovateľ finančných prostriedkov: SAV

Pridelené finančné prostriedky: 39832,70 € (z toho pre CHÚ SAV: 28214 €)

6B. Projekty centier excelentnosti SAV

Evidenčné číslo projektu: Zmluva č. II/1/2007

**Centrum pokročilej výpočtovej chémie
(Centre of Advanced Computational Chemistry)**

Akronym: COMCHEM

Nositel' projektu: Ústav anorganickej chémie SAV

Vedúci: Prof. RNDr. Jozef Noga, DrSc.

Zodp. riešiteľ za CHÚ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 01/01/2007-31/12/2010

Pridelovateľ finančných prostriedkov: SAV

Pridelené finančné prostriedky: 10000 €

7A. Vedecko-technické projekty, ktoré boli v roku 2009 financované

7B. Vedecko-technické projekty, ktoré boli v roku 2009 financované

8A. Projekty podporované Európskym sociálnym fondom

8B. Projekty podporované Európskym sociálnym fondom

9A. Podpora medzinárodnej spolupráce z národných zdrojov (MVTS, APVV, ...)

Evidenčné číslo projektu: COST-0004-06

Výzva: APVV COST 2006

Faktory ovplyvňujúce príjem a transport minerálnych látok v rastlinách využiteľných vo fytotechnológiách

(Factors affecting uptake and transport of mineral elements in plants utilizable in phytotechnologies)

Zodp. riešiteľ: Prof. RNDr. Alexander Lux, CSc.

Doba riešenia: 01/2007-12/2009

Finančný príspevok z APVV: 12241,92 € (z toho 5536,75 € pre CHÚ SAV)

Evidenčné číslo projektu: SK-ZA-0005-07

Výzva APVV: Bilaterálna „Slovensko – Juhoafrická republika 2007“

Xylanolytic system of the xylose-fermenting yeast *Pichia stipitis*: Properties and engineering

(Xylanolytický systém xylózu-fermentujúcej kvasinky *Pichia stipitis*: vlastnosti a modifikácia)

Zodp. riešiteľ zo Slovenska: RNDr. Peter Biely, DrSc.

Zodp. riešiteľ z Juhoafrickej republiky: Prof. Willem H. van Zyl

Doba riešenia: 08/2008-12/2010

Dvojstranný projekt: Slovensko, Juhoafrická republika

Finančný príspevok z APVV: 4746,73 €

Evidenčné číslo projektu: SK-FR-0009-07

Výzva APVV: Bilaterálna „Slovensko – Francúzsko 2007“

NMR study of the metabolism of bacteria isolated from cloud water. Relation with chemistry of atmosphere

(NMR štúdium metabolizmu baktérie izolovanej z vody oblakov. Vzťah s chémiou atmosféry)

Zodp. riešiteľ zo Slovenska: RNDr. Mária Matulová, PhD.

Zodp. riešiteľ z Francúzska: Dr. Anne-Marie Delort

Dvojstranný projekt: Slovensko, Francúzsko

Doba riešenia: 01/2008-12/2009

Finančný príspevok z APVV: 2655,51 €

Evidenčné číslo projektu: SK-AT-0024-08

Výzva APVV: Bilaterálna „Slovensko – Rakúsko 2008“

Design of aggregation and encapsulation processes for improved biocatalyst preparation (Projektovanie agregáčnych a enkapsulačných procesov pre vylepšenie biokatalyzátorov)

Zodp. riešiteľ zo Slovenska: Ing. Jozef Nahálka, PhD.

Zodp. riešiteľ z Rakúska: Prof. Bernd Nidetzky

Dvojstranný projekt: Slovensko, Rakúsko

Doba riešenia: 02/2009-12/2010

Finančný príspevok z APVV: 1991,64 €

9B. Podpora medzinárodnej spolupráce z národných zdrojov (MVTS, APVV, ...)

Evidenčné číslo projektu: APVV-DO7RP-0013-08

Výzva: APVV DO7RP

Nanoparticles for therapy and diagnosis of Alzheimer disease - NAD
(Nanočastice pre terapiu a diagnózu Alzheimerovej choroby)

Akronym: NAD

Hlavný koordinátor: Prof. Massimo Masserini (Taliansko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 09/2008-06/2013

Dvadsaťstranný projekt: BE, DK, ES (4), FR (3), FI, GR, HU, IT (3), NL, PT, SE, SK, UK

Finančný príspevok z APVV: 16524,46 €

Finančný príspevok z MVTs SAV: 9029 €

Evidenčné číslo projektu: APVV-PP7RP-0115-08

Výzva: APVV PP7RP 2008

Enhancing access and services to East European users towards an efficient and coordinated Pan-European pool of NMR capacities to enable global collaborative research & boost technological advancements (EAST-NMR)

(Zlepšenie prístupu a servisu pre užívateľov NMR z východnej Európy za účelom vytvorenia koordinovanej pan-Európskej komunity umožňujúcej spoluprácu vo výskume a na podporu technologického pokroku)

Akronym: EAST-NMR

Hlavný koordinátor: Prof. Harald Schwalbe (Nemecko)

Zodp. riešiteľ: Ing. Miloš Hricovíni, PhD.

Doba riešenia: 02/2009-02/2012

Dvadsaťjedenstranný projekt: BG, CH, CZ, DE (3), EE, FR, GR, HU, IL, IT, LV (2), NL, PL (2), SI, SK, TR, UK

Finančný príspevok z APVV: 2961,96 €

Finančný príspevok z MVTs SAV: 3850 €

Evidenčné číslo projektu: SK-ZA-0007-07

Výzva: APVV „Slovensko – Juhoafrická republika 2007“

Uptake, transport and translocation of heavy metals and essential elements in selected model plants and in some widely used medicinal plants of South Africa

(Príjem, transport a translokácia ťažkých kovov a esenciálnych prvkov vo vybraných modelových rastlinách a v najpoužívanejších liečivých rastlinách Južnej Afriky)

Zodp. riešiteľ zo Slovenska: Prof. RNDr. Alexander Lux, CSc. (PRIF UK)

Zodp. riešiteľ za CHÚ SAV: RNDr. Desana Lišková, PhD.

Zodp. riešiteľ z Juhoafrickej republiky: Prof. Johannes Van Staden

Doba riešenia: 08/2008-12/2010

Dvojstranný projekt: Slovensko, Juhoafrická republika

Finančný príspevok z APVV: 4979,09 € (z toho pre CHÚ SAV refundácie cestovných nákladov)

Evidenčné číslo projektu: COST FP0901 WG1

Analytical techniques for biorefinerie

(Analytické techniky pre biorefinérie)

Hlavný koordinátor: Prof. Stefan Willför (Fínsko)

Zodp. riešiteľ: Ing. Zdenka Hromádková, PhD.

Doba riešenia: 08/2009-05/2013

Dvadsaťjedenstranný projekt: AT, BE, CZ, DE, ES, FI, FR, GR, IT, NL, NO, PL, PT, RU, SK, TR, UK

Finančný príspevok z MVTs SAV: 1383 €

Evidenčné číslo projektu: COST Action CM0701

Cascade chemoenzymatic processes - new synergies between chemistry and biochemistry

(Kaskádovité chemoenzymatické procesy - nové synergie medzi chémiou a biochémiou)

Hlavný koordinátor: Dr. Sergio Riva (Taliansko)

Doba riešenia: 10/2008-04/2012

Dvadsaťjedenstranný projekt: AT, BE, CH, CRO, CZ, D, DK, E, F, FI I, IE, IS, LT, N, NL, RO, S, SK, TR, UK

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Finančný príspevok z MVTs SAV: 1660 €

Evidenčné číslo projektu: COST CM8T D43

Colloid and interface chemistry for nanotechnology

(Koloidná chémia a chémia povrchov v nanotechnológii)

Hlavný koordinátor: Prof. Peter Kralchevsky (Bulharsko)

Doba riešenia: 11/2006-11/2011

Dvadsaťosemstranný projekt: AT, BG, CH, CRO, CYP, CZ, D, E, F, FI, GR, H, I, IE, IS, LT, LV, N, NL, P, PL, RO, S, SK, SLO, SRB, TR, UK

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Finančný príspevok z MVTs SAV: 1660 €

Evidenčné číslo projektu: COST Action 865

Bioencapsulation multiscale interaction analysis

(Multiúrovňová interakčná analýza v bioenkapsulácii)

Hlavný koordinátor: Prof. Denis Poncelet (Francúzsko)

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Doba riešenia: 10/2005-01/2010

Dvadsaťosemstranný projekt: AT, BE, BG, BR, CA, CH, CZ, DE, ES, FI, FR, GR, IL, IN, IT, KZ, NL, NO, PL, PT, RU, SE, SI, SK, TR, UK, UZ, YU

Finančný príspevok z MVTs SAV: 3319 €

Evidenčné číslo projektu: COST Action 859

Phytotechnologies to promote sustainable land use management and improve food safety

(Fytotechnológie na podporu udržateľného využitia krajiny a zvýšenia bezpečnosti potravín)

Hlavný koordinátor: Dr. Jean-Paul Schwitzguébel (Švajčiarsko)

Zodp. riešiteľ: RNDr. Desana Lišková, PhD.

Doba riešenia: 07/2004-07/2009

Dvadsaťsedemstranný projekt: AT, BG, CZ, DK, EE, FI, FR, DE, GR, HU, IE, IL, IT, LT, LU, NL, NO, PL, PT, RO, SK, SI, ES, SE, CH, TR, UK

Finančný príspevok z MVTs SAV: 1925 €

Evidenčné číslo projektu: COST Action 928

Control and exploitation of enzymes for added-value food products

(Kontrola a využitie enzýmov pre potraviny s pridanou hodnotou)

Hlavný koordinátor: Prof. Johanna Buchert (Fínsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 10/2005-01/2010

Dvadsaťtristranný projekt: AT, BE, BG, DK, EE, FI, FR, DE, IS, IE, IT, LT, NL, NO, PL, PT, RO, YU, SK, SI, ES, TK, UK

Finančný príspevok z MVTS SAV: 3319 €

Evidenčné číslo projektu: COST Action 868

Biotechnical functionalisation of renewable polymeric materials

(Biotechnická funkcionalizácia obnoviteľných polymérnych materiálov)

Hlavný koordinátor: Prof. Georg M. Gübitz (Rakúsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 05/2006-03/2011

Dvadsaťdvastranný projekt: AT, BE, CZ, DK, EG, FI, FR, DE, IT, LV, LT, NL, PL, PT, RO, RU, SK, SI, ES, SE, CH, UK

Finančný príspevok z MVTS SAV: 3319 €

Evidenčné číslo projektu: COST Action FP0602

Biotechnology for lignocellulose biorefineries

(Biotechnológie pre skvalitňovanie lignocelulózy)

Akronym: BIOBIO

Hlavný koordinátor: Prof. Liisa Viikari (Fínsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 02/2007-06/2011

Osemnásťstranný projekt: BE, BG, CZ, CH, DE, DK, ES, FI, FR, GR, HU, IT, NO, PT, SK, SE, TR, UK

Finančný príspevok z MVTS SAV: 3319 €

Evidenčné číslo projektu: 05-PGM-022 (ESF-Research Networking Programmes-PESC)

Multidisciplinary frontiers of magnetic resonance

(Multidisciplinárne hranice magnetickej rezonancie)

Akronym: EMAR

Hlavný koordinátor: Prof. Miquel Pons (Španielsko)

Zodp. riešiteľ: RNDr. Mária Matulová, PhD.

Doba riešenia: 04/2007-04/2012

Päťnásťstranný projekt: AT, BE, CZ, EE, FI, FR, DE, HU, PL, PT, SK, SI, ES, SE, CH

Finančný príspevok z MVTS SAV: 1660 €

Evidenčné číslo projektu: 005645 (FP6-2004-HRM-Marie Curie Actions-RTN)

Evidenčné číslo kontraktu: MRTN-CT-2004-005645

GlycoGold: Exploration of the nature and potential of Glyco-nano-particles

(GlycoGold: Skúmanie charakteru a potenciálu glyko-nano-častíc)

Akronym: GLYCOGOLD

Hlavný koordinátor: Prof. Johannis P. Kamerling (Holandsko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 04/2005-04/2009

Jedenásťstranný projekt: NL (4), UK (2), FR, FI, ES, HR, SK

Finančný príspevok z MVTS SAV: 2025 €

Evidenčné číslo projektu: 504192 (FP6-2002-Mobility-1-HRM-MCA-RTN)

Evidenčné číslo kontraktu: MRTN-CT-2004-512265

**Functional genomics for biogenesis of the plant cell wall
(Funkčná genomika pre biogénu bunkových stien rastlín)**

Akronym: WALLNET

Hlavný koordinátor: Prof. Henrik Vibe Scheller (Dánsko)

Zodp. riešiteľ: Doc. Ing. Vladimír Farkaš, DrSc.

Doba riešenia: 04/2005-04/2009

Desaťstranný projekt: FR (3), DK (2), NL (2), DE, UK, SK

Finančný príspevok z MVTs SAV: 2788 €

Evidenčné číslo projektu: MRTN-CT-2006-035866

(R)Evolutionary catalysis

((R)Evolučná katalýza)

Akronym: REVCAT

Hlavný koordinátor: Prof. Joost Nicolaas Hendrik Reek (Holandsko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 10/2006-09/2010

Deväťstranný projekt: NL (2), DE, CH, UK, AT, IT, PL, SK

Finančný príspevok z MVTs SAV: 9825 €

10A. Iné projekty (ústavné, na objednávku rezortov a pod.)

10B. Iné projekty (ústavné, na objednávku rezortov a pod.)

- b) Domáce projekty podané v roku 2009** (členenie podľa tabuľky 2b v kapitole 2.1.)
(A = CHÚ je nositeľom projektu, B = CHÚ sa zmluvne podieľa na riešení projektu)

1A. Účasť na nových výzvach APVV r. 2009

Názov projektu:	Využitie rôznych druhov kvasiniek pri sorpcii ťažkých kovov z vonkajšieho prostredia
Anglický názov:	The application of different yeast species in the sorption of heavy metals from the external environment
Kód výzvy:	Bilaterálna výzva MVTs SK-CZ 2009
Nositeľ projektu:	Chemický ústav SAV
Zmluvný spoluriešiteľ:	Ústav chémie potravín a biotechnológií, Fakulta chemická, Vysoké učení v Brne
Zodpovedný riešiteľ z CHÚ:	Ing. Emília Breierová, PhD.
Doba riešenia:	01/2010-12/2011
Stav projektu:	neschválený

1B. Účasť na nových výzvach APVV r. 2009

Evidenčné číslo projektu:	VMSP-II-0005-09
Názov projektu:	Výskum biokatalytickej prípravy tioesterov

Anglický názov: Research on biocatalytic production of thioesters
 Kód výzvy: VMSP 2009-II
 Nositeľ projektu: LiAxx Biotech, s.r.o.
 Zmluvný spoluriešiteľ: Chemický ústav SAV
 Zodpovedný riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc.
 Doba riešenia: 01/2010-12/2011
 Stav projektu: podaný

Evidenčné číslo projektu: VMSP-P-0045-09
 Názov projektu: Biokatalytická výroba tioesterov
 Anglický názov: Biocatalytic production of thioesters
 Kód výzvy: VMSP 2009
 Nositeľ projektu: LiAxx Biotech, s.r.o.
 Zmluvný spoluriešiteľ: Chemický ústav SAV
 Zodpovedný riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc.
 Stav projektu: vyradený z dôvodu formálnych nedostatkov

2A. Projekty výziev OP ŠF podané r. 2009

Názov projektu: Centrum excelentnosti pre Glykomiku
 Anglický názov: Excellence centre for Glycomics
 Kód výzvy: OPVaV-2009/4.1/03-SORO
 Nositeľ projektu: Chemický ústav SAV
 Zmluvný spoluriešiteľ: ÚEFT SAV, ÚMB SAV, ÚZo SAV, ÚVS SAV, ÚMFG SAV, FF UK v Bratislave
 Zodpovedný riešiteľ z CHÚ: RNDr. Ján Mucha, CSc.
 Doba riešenia: 06/2010-06/2013
 Stav projektu: podaný

Názov projektu: Centrum excelentnosti pre bielo-zelenú biotechnológiu
 Anglický názov: Excellence centre for white-green biotechnology
 Kód výzvy: OPVaV-2009/2.1/03-SORO
 Nositeľ projektu: Chemický ústav SAV
 Zmluvný spoluriešiteľ: Slovenská poľnohospodárska univerzita v Nitre
 Zodpovedný riešiteľ z CHÚ: Ing. Jozef Nahálka, PhD.
 Doba riešenia: 06/2010-05/2013
 Stav projektu: podaný

2B. Projekty výziev OP ŠF podané r. 2009

Názov projektu: Centrum pre materiály, vrstvy a systémy pre aplikácie a chemické procesy v extrémnych podmienkach - etapa II
 Anglický názov: Centre for materials, layers and systems for applications and chemical processes under extreme conditions
 Akronym: MACHINA II
 Kód ITMS: 26240120021
 Kód výzvy: OPVaV-2009/4.1/02-SORO
 Nositeľ projektu: Ústav anorganickej chémie SAV

Zmluvný spoluriešiteľ: Chemický ústav SAV, ÚPo SAV, STU v Bratislave
 Zodpovedný riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc., Ing. Ján Tkáč, PhD.
 Doba riešenia: 12/2009-03/2012
 Stav projektu: schválený

Názov projektu: Dobudovanie Centra excelentnosti metód a procesov zelenej chémie
 Anglický názov: Completion of Excellence centre for methods and processes of green chemistry
 Akronym: CE GREEN II
 Kód ITMS: 26240120025
 Kód výzvy: OPVaV-2009/4.1/02-SORO
 Nositeľ projektu: Univerzita Komenského v Bratislave
 Zmluvný spoluriešiteľ: Chemický ústav SAV, STU v Bratislave
 Zodpovedný riešiteľ z CHÚ: Ing. Mária Mastihubová, PhD.
 Doba riešenia: 01/2010-12/2012
 Stav projektu: schválený

Názov projektu: Národné centrum excelentnosti pre priemyselnú biotechnológiu
 Anglický názov: National excellence centre for industrial biotechnology
 Kód výzvy: OPVaV-2009/4.1/03-SORO
 Nositeľ projektu: Slovenská technická univerzita v Bratislave
 Zmluvný spoluriešiteľ: Chemický ústav SAV
 Zodpovedný riešiteľ z CHÚ: Ing. Marek Bučko, PhD.
 Doba riešenia: 06/2010-05/2013
 Stav projektu: podaný

Názov projektu: Centrum excelentnosti pre štruktúrálnu biológiu
 Anglický názov: Excellence centre for structural biology
 Kód výzvy: OPVaV-2009/4.1/03-SORO
 Nositeľ projektu: Ústav molekulárnej biológie SAV
 Zmluvný spoluriešiteľ: Chemický ústav SAV
 Zodpovedný riešiteľ z CHÚ: RNDr. Peter Biely, DrSc.
 Doba riešenia: 06/2010-05/2013
 Stav projektu: podaný

Názov projektu: Medzinárodná integrácia a rozvoj Centra excelentnosti pre ochranu a využívanie krajiny a biodiverzitu
 Kód výzvy: OPVaV-2009/2.1/02-SORO
 Nositeľ projektu: Ústav krajinnej ekológie SAV
 Zmluvný spoluriešiteľ: Chemický ústav SAV, ÚZo SAV, ÚMB SAV, BoÚ SAV, ÚH SAV, PriF UK v Bratislave
 Zodpovedný riešiteľ z CHÚ: RNDr. Desana Lišková, PhD., Ing. Elena Sláviková, PhD.
 Doba riešenia: 06/2010-05/2013
 Stav projektu: vyradený z dôvodu formálnych nedostatkov

Názov projektu: Príprava prírodných aróm pomocou biotransformácií
 Kód výzvy: OPVaV-2009/4.2/03-SORO
 Nositeľ projektu: LiAxx Biotech, s.r.o.
 Zmluvný spoluriešiteľ: Chemický ústav SAV, FCHPT STU, PriF UK

Zodpovedný riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc.
Stav projektu: vyradený z dôvodu formálnych nedostatkov

3A. Projekty výziev FM EHP podané r. 2009

3B. Projekty výziev FM EHP podané r. 2009

c) Medzinárodné projekty riešené v roku 2009 (členenie podľa tabuľky 2c v kapitole 2.2.)

(A = CHÚ je nositeľom projektu, B = CHÚ sa zmluvne podieľa na riešení projektu)

1B. Projekty 6. rámcového programu EÚ

Evidenčné číslo projektu: 005645 (FP6-2004-HRM-Marie Curie Actions-RTN)

Evidenčné číslo kontraktu: MRTN-CT-2004-005645

GlycoGold: Exploration of the nature and potential of Glyco-nano-particles
(**GlycoGold: Skúmanie charakteru a potenciálu glyko-nano-častíc**)

Akronym: GLYCOGOLD

Hlavný koordinátor: Prof. Johannes P. Kamerling (Holandsko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 04/2005-04/2009

Jedenásťstranný projekt: NL (4), UK (2), FR, FI, ES, HR, SK

Finančný príspevok z EC Brussels: 21846,92 €

Evidenčné číslo projektu: 504192 (FP6-2002-Mobility-1-HRM-MCA-RTN)

Evidenčné číslo kontraktu: MRTN-CT-2004-512265

Functional genomics for biogenesis of the plant cell wall
(**Funkčná genomika pre biogénu bunkových stien rastlín**)

Akronym: WALLNET

Hlavný koordinátor: Prof. Henrik Vibe Scheller (Dánsko)

Zodp. riešiteľ: Doc. Ing. Vladimír Farkaš, DrSc.

Doba riešenia: 04/2005-04/2009

Desaťstranný projekt: FR (3), DK (2), NL (2), DE, UK, SK

Finančný príspevok z EC Brussels: 11274 €

Evidenčné číslo projektu: MRTN-CT-2006-035866

(R)Evolutionary catalysis
(**(R)Evolučná katalýza**)

Akronym: REVCAT

Hlavný koordinátor: Prof. Joost Nicolaas Hendrik Reek (Holandsko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 10/2006-09/2010

Deväťstranný projekt: NL (2), DE, CH, UK, AT, IT, PL, SK

Finančný príspevok z EC Brussels: 49260,15 €

2B. Projekty 7. rámcového programu EÚ

Evidenčné číslo projektu: NMP4-LA-2008-212043

Nanoparticles for therapy and diagnosis of Alzheimer disease - NAD
(**Nanočastice pre terapiu a diagnózu Alzheimerovej choroby**)

Akronym: NAD

Hlavný koordinátor: Prof. Massimo Masserini (Taliansko)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 09/2008-06/2013

Dvadsaťstranný projekt: BE, DK, ES (4), FR (3), FI, GR, HU, IT (3), NL, PT, SE, SK, UK

Finančný príspevok z EC Brussels: 50218,43 €

Evidenčné číslo projektu: 228461-EAST-NMR

Enhancing access and services to East European users towards an efficient and coordinated Pan-European pool of NMR capacities to enable global collaborative research & boost technological advancements (EAST-NMR)

(**Zlepšenie prístupu a servisu pre užívateľov NMR z východnej Európy za účelom vytvorenia koordinovanej pan-Európskej komunity umožňujúcej spoluprácu vo výskume a na podporu technologického pokroku**)

Akronym: EAST-NMR

Hlavný koordinátor: Prof. Harald Schwalbe (Nemecko)

Zodp. riešiteľ: Ing. Miloš Hricovíni, PhD.

Doba riešenia: 02/2009-02/2013

Dvadsaťjedenstranný projekt: BG, CH, CZ, DE (3), EE, FR, GR, HU, IL, IT, LV (2), NL, PL (2), SI, SK, TR, UK

Finančný príspevok z EC Brussels: 27417 €

3A. Multilaterálne projekty v rámci vedeckých programov COST, INTAS, EUREKA, ESPIRIT, PHARE, NATO, UNESCO, CERN, IAEA, ESF a iné)

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3B. Multilaterálne projekty v rámci vedeckých programov COST, INTAS, EUREKA, ESPIRIT, PHARE, NATO, UNESCO, CERN, IAEA, ESF a iné)

Evidenčné číslo projektu: COST FP0901 WG1

Analytical techniques for biorefinerie
(**Analytické techniky pre biorefinérie**)

Hlavný koordinátor: Prof. Stefan Willför (Fínsko)

Zodp. riešiteľ: Ing. Zdenka Hromádková, PhD.

Doba riešenia: 08/2009-05/2013

Dvadsaťjedenstranný projekt: AT, BE, CZ, DE, ES, FI, FR, GR, IT, NL, NO, PL, PT, RU, SK, TR, UK

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST Action CM0701

Cascade chemoenzymatic processes - new synergies between chemistry and biochemistry

(**Kaskádovité chemoenzymatické procesy - nové synergie medzi chémiou a biochémiou**)

Hlavný koordinátor: Dr. Sergio Riva (Taliansko)

Doba riešenia: 10/2008-04/2012

Dvadsaťjedestranný projekt: AT, BE, CH, CRO, CZ, D, DK, E, F, FI I, IE, IS, LT, N, NL, RO, S, SK, TR, UK

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST CM8T D43

Colloid and interface chemistry for nanotechnology

(Koloidná chémia a chémia povrchov v nanotechnológii)

Hlavný koordinátor: Prof. Peter Kralchevsky (Bulharsko)

Doba riešenia: 11/2006-11/2011

Dvadsaťosemstranný projekt: AT, BG, CH, CRO, CYP, CZ, D, E, F, FI, GR, H, I, IE, IS, LT, LV, N, NL, P, PL, RO, S, SK, SLO, SRB, TR, UK

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST Action 865

Bioencapsulation multiscale interaction analysis

(Multiúrovňová interakčná analýza v bioenkapsulácii)

Hlavný koordinátor: Prof. Denis Poncelet (Francúzsko)

Zodp. riešiteľ: Ing. Peter Gemeiner, DrSc.

Doba riešenia: 10/2005-01/2010

Dvadsaťosemstranný projekt: AT, BE, BG, BR, CA, CH, CZ, DE, ES, FI, FR, GR, IL, IN, IT, KZ, NL, NO, PL, PT, RU, SE, SI, SK, TR, UK, UZ, YU

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST Action 859

Phytotechnologies to promote sustainable land use management and improve food safety

(Fytotechnológie na podporu udržateľného využitia krajiny a zvýšenia bezpečnosti potravín)

Hlavný koordinátor: Dr. Jean-Paul Schwitzguébel (Švajčiarsko)

Zodp. riešiteľ: RNDr. Desana Lišková, PhD.

Doba riešenia: 07/2004-10/2009

Dvadsaťsedemstranný projekt: AT, BG, CZ, DK, EE, FI, FR, DE, GR, HU, IE, IL, IT, LT, LU, NL, NO, PL, PT, RO, SK, SI, ES, SE, CH, TR, UK

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST Action 928

Control and exploitation of enzymes for added-value food products

(Kontrola a využitie enzýmov pre potraviny s pridanou hodnotou)

Hlavný koordinátor: Prof. Johanna Buchert (Fínsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 10/2005-01/2010

Dvadsaťtristranný projekt: AT, BE, BG, DK, EE, FI, FR, DE, IS, IE, IT, LT, NL, NO, PL, PT, RO, YU, SK, SI, ES, TK, UK

Finančný príspevok z EC Brussels: žiadny

Finančný príspevok z MVTS SAV: 3319 €

Evidenčné číslo projektu: COST Action 868

Biotechnical functionalisation of renewable polymeric materials

(Biotechnická funkcionalizácia obnoviteľných polymérnych materiálov)

Hlavný koordinátor: Prof. Georg M. Gübitz (Rakúsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 05/2006-03/2011

Dvadsaťdvastranný projekt: AT, BE, CZ, DK, EG, FI, FR, DE, IT, LV, LT, NL, PL, PT, RO, RU, SK, SI, ES, SE, CH, UK

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: COST Action FP0602

Biotechnology for lignocellulose biorefineries

(Biotechnológie pre skvalitňovanie lignocelulózy)

Akronym: BIOBIO

Hlavný koordinátor: Prof. Liisa Viikari (Fínsko)

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 02/2007-06/2011

Osemnásťstranný projekt: BE, BG, CZ, CH, DE, DK, ES, FI, FR, GR, HU, IT, NO, PT, SK, SE, TR, UK

Finančný príspevok z EC Brussels: žiadny

Evidenčné číslo projektu: 05-PGM-022 (ESF-Research Networking Programmes-PESC)

Multidisciplinary frontiers of magnetic resonance

(Multidisciplinárne hranice magnetickej rezonancie)

Akronym: EMAR

Hlavný koordinátor: Prof. Miquel Pons (Španielsko)

Zodp. riešiteľ: RNDr. Mária Matulová, PhD.

Doba riešenia: 04/2007-04/2012

Päťnásťstranný projekt: AT, BE, CZ, EE, FI, FR, DE, HU, PL, PT, SK, SI, ES, SE, CH

Finančný príspevok z European Science Foundation: žiadny

Evidenčné číslo projektu: 07-RNP-015 (ESF-Research Networking Programmes-LESC)

The EuroGlycosciences Forum

(EuroGlycosciences fórum)

Akronym: Euroglycoscience

Hlavný koordinátor: Prof. Sabine L. Flitsch (Anglicko)

Zodp. riešiteľ: RNDr. Ján Mucha, PhD.

Doba riešenia: 05/2009-04/2014

Deväťnásťstranný projekt: AT, BE, CH, CZ, DE, EE, ES, FI, FR, HR, IE, NL, NO, PL, PT, RO, SE, SK, UK

Finančný príspevok z European Science Foundation: žiadny

4A. Projekty v rámci medzivládnych dohôd o vedecko-technickej spolupráci

Evidenčné číslo projektu: SK-ZA-0005-07

Xylanolytic system of the xylose-fermenting yeast *Pichia stipitis*: Properties and engineering

(Xylanolytický systém xylózu-fermentujúcej kvasinky Pichia stipitis: vlastnosti a modifikácia)

Zodp. riešiteľ zo Slovenska: RNDr. Peter Biely, DrSc.

Zodp. riešiteľ z Juhoafrickej republiky: Prof. Willem H. van Zyl

Doba riešenia: 08/2008-12/2010

Dvojstranný projekt: Slovensko, Juhoafrická republika

Evidenčné číslo projektu: SK-FR-0009-07

NMR study of the metabolism of bacteria isolated from cloud water. Relation with chemistry of atmosphere

(NMR štúdium metabolizmu baktérie izolovanej z vody oblakov. Vzťah s chémiou atmosféry)

Zodp. riešiteľ zo Slovenska: RNDr. Mária Matulová, PhD.

Zodp. riešiteľ z Francúzska: Dr. Anne-Marie Delort

Dvojstranný projekt: Slovensko, Francúzsko

Doba riešenia: 01/2008-12/2009

Evidenčné číslo projektu: SK-AT-0024-08

Design of aggregation and encapsulation processes for improved biocatalyst preparation
(Projektovanie agregáčnych a enkapsulačných procesov pre vylepšenie biokatalyzátorov)

Zodp. riešiteľ zo Slovenska: Ing. Jozef Nahálka, PhD.

Zodp. riešiteľ z Rakúska: Prof. Bernd Nidetzky

Dvojstranný projekt: Slovensko, Rakúsko

Doba riešenia: 02/2009-12/2010

4B. Projekty v rámci medzivládnych dohôd o vedecko-technickej spolupráci

Evidenčné číslo projektu: SK-ZA-0007-07

Uptake, transport and translocation of heavy metals and essential elements in selected model plants and in some widely used medicinal plants of South Africa

(Príjem, transport a translokácia ťažkých kovov a esenciálnych prvkov vo vybraných modelových rastlinách a v najpoužívannejších liečivých rastlinách Južnej Afriky)

Zodp. riešiteľ zo Slovenska: Prof. RNDr. Alexander Lux, CSc. (PRIF UK)

Zodp. riešiteľ za CHÚ SAV: RNDr. Desana Lišková, PhD.

Zodp. riešiteľ z Juhoafrickej republiky: Prof. Johannes Van Staden

Doba riešenia: 08/2008-12/2010

Dvojstranný projekt: Slovensko, Juhoafrická republika

5A. Bilaterálne projekty

Evidenčné číslo projektu: neuvedené

Glycoenzyme inhibitors: Design, molecular modelling, and synthesis
(Glykoenzýmové inhibítory: Dizajn, molekulové modelovanie a syntéza)

Zodp. riešiteľ: Ing. Igor Tvaroška, DrSc.

Doba riešenia: 01/2007-12/2009

Dvojstranný projekt: Slovensko, Maďarsko (program vedeckej spolupráce MAD)

Prideľovateľ finančných prostriedkov: SAV

Finančný príspevok zo zahraničia: žiadny
Finančný príspevok zo ŠR SR: žiadny

6A. Iné projekty financované alebo spolufinancované zo zahraničných zdrojov

Evidenčné číslo projektu: 40930817

Izolácia lignínových preparátov z výluhov

(Isolation of lignin preparations from spent liquors)

Zodp. riešiteľ: Prof. Ing. Božena Košíková, DrSc.

Doba riešenia: 01/2009-12/2010

Pridelovateľ finančných prostriedkov: VIDIA, spol. s r.o., Česká republika

Pridelené finančné prostriedky: 36500 €

Evidenčné číslo projektu: Consulting Agreement

Roasted coffee arabinogalactan structural study

(Štúdium štruktúry arabinogalaktanu izolovaného z praženej kávy)

Zodp. riešiteľ: RNDr. Mária Matulová, PhD.

Doba riešenia: 03/2009-12/2009

Pridelovateľ finančných prostriedkov: Illycaffè S.p.A., Trieste, Taliansko

Pridelené finančné prostriedky: 4000 €

6B. Iné projekty financované alebo spolufinancované zo zahraničných zdrojov

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d) Medzinárodné projekty v 7. RP EÚ podané v roku 2009 (tabuľka 2d v kapitole 2.2.)

Názov projektu:	Biofuel cells based on nanoscale integrated organic-inorganic hybrid interfaces for direct production of electricity
Akronym:	BIONANHYB
Kód výzvy:	FP7-NMP-2010-SMALL-4, NMP.2010.2.2-1
	Organic-inorganic hybrids for electronics and photonics
Podprogram:	COOPERATION-NMP
Typ projektu:	CP-Small
Nositeľ projektu:	Chemický ústav SAV
Spoluriešitelia:	Slovakia (Chemický ústav SAV), Finland (VTT), Sweden (Lunds universitet), Austria (BOKU)
Zodp. riešiteľ z CHÚ:	Ing. Ján Tkáč, PhD.
Stav projektu:	podaný
Názov projektu:	Towards the engineering of in vitro systems for production of glyco-diagnostic and glyco-treatment tools
Akronym:	SynBioGlycTech
Kód výzvy:	FP7- ERC-2010-StG_20091118
Podprogram:	IDEAS-ERC
Typ projektu:	ERC Starting Independent Researcher Grant
Nositeľ projektu:	Chemický ústav
Zodp. riešiteľ z CHÚ:	Ing. Jozef Nahálka, PhD.
Stav projektu:	podaný

Názov projektu: Production of Pleurotus spp. biomass on different plant raw materials, isolation, characterisation, and testing of biologically active compounds and possibilities of industrial production

Akronym: MUSHROOMBIOTECH

Kód výzvy: FP7-REGPOT-2010-5

Podprogram: Capacities - Research Potential

Typ projektu: Coordination and Support Actions

Nositeľ projektu: Prof. Mirjana Stajic, University of Belgrade, Serbia

Zodp. riešiteľ z CHÚ: RNDr. Mária Matulová, PhD.

Stav projektu: podaný

Názov projektu: Biofuel cell based on nanostructured interfaces for direct production of electricity

Akronym: BIONANEL

Kód výzvy: MNT-ERA.NET, Transnational Call 2009

Nositeľ projektu: Prof. Lo Gorton, Lunds universitet, Sweden

Spoluriešitelia: Slovakia (Chemický ústav SAV), Sweden (Lunds universitet), Finland (VTT), Denmark (DTU)

Zodp. riešiteľ z CHÚ: Ing. Ján Tkáč, PhD.

Stav projektu: zamietnutý

Príloha C

Publikačná činnosť organizácie – bibliografické údaje (členenie podľa Tabuľky 2e)

6. Kapitoly vo vedeckých monografiách vydaných v zahraničných vydavateľstvách:

ČERTÍK, M. - HANUSOVÁ, V. - BREIEROVÁ, E. - MÁROVÁ, I. - RAPTA, P. Biotechnological production and properties of carotenoid pigments. In HOU, C.T. - SHAW, J-F. *Biocatalysis and Agricultural Biotechnology*. Boca Raton: CRC Press, Taylor & Francis Group, 2009. ISBN 978-1-42007-703-2. Chapter 25. p. 355-376.

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SVITEL, J. - TKÁČ, J. - VOSTIAR, I. - NAVRATIL, M. - GEMEINER, P. Microbial biosensors and biofuel cells based on Acetobacter and Gluconobacter cells. In COMEAUX, R. - NOVOTNY, P. *Biosensors: Properties, Materials and Applications*. New York: Nova Science Publishers, Inc., 2009. ISBN 978-1-60741-617-3. Chapter 8, p. 247-264.

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9. Vedecké a odborné práce v časopisoch evidovaných v Current Contents:

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BAUEROVÁ, K. - PAULOVÍČOVÁ, E. - MIHALOVÁ, D. - ŠVÍK, K. - PONIŠT, S. Study of new ways of supplementary and combinatory therapy of rheumatoid arthritis with immunomodulators. Glucmannan and Imunoglukan® in adjuvant arthritis. In *Toxicology and Industrial Health*. Vol. 25, (2009), p. 329-335. (0.731 – IF2008)

CAPEK, P. A water soluble glucomannan isolated from an immunomodulatory active polysaccharide of *Salvia officinalis* L. In *Carbohydrate Polymers*. Vol. 75, (2009), p. 356-359. (2.644 – IF2008)

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9. Vedecké a odborné práce v časopisech evidovaných v Current Contents -

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ŠIMONOVÁ, I. - KAROVIČOVÁ, J. - MASTIHUBA, V. Využitie enzýmových preparátov na stanovenie inulínu. In *Potravinárstvo*. Roč. 3, č.1 (2009), s. 16-17. ISSN 1337-0960. (FAO AGRIS)

10. Vedecké a odborné práce v nekarentovaných časopisoch - doplnky z roku 2008:

ŠOLTÉS, L. - KOGAN, G. Impact of transition metals in the free-radical degradation of hyaluronan biopolymer. In *Polymers Research Journal*. Vol. 2, Iss. 3, (2008), p. 269-288. ISSN: 1935-2530.

11. Vedecké a odborné práce v zborníkoch (konferenčných aj nekonferenčných, vydaných tlačou alebo na CD)

a) recenzovaných:

BIELY, P. - ĎURANOVÁ, M. - LI, X.-L. - DE VRIES, R.P. - MALIŠKOVÁ, S. Glucuronoyl esterase, a novel component of microbial plant cell wall degrading enzyme systems. In SAKKA, K. - KARITA, S. - KIMURA, T. - SAKKA, M. - MATSUI, H. - MIYAKE, H. - TANAKA, A. *Biotechnology of lignocellulose degradation and biomass utilization. Proceedings of the MIE BIOFORUM 2008, Shima-Isobe, Japan, September 1-5, 2008*. Shima-Isobe: Ito Print Publishing Division, 2009. ISBN 978-4-9903-219-6-3 C-3845. p. 318-323.

GDOVIN, M. - ROSENBERG, M. - MASTIHUBA, V. - HRONSKÁ, H. Enzymatická príprava a využitie alkyl-glykozidov. In STARUCH, L. *Laboralim 2009: Recent progress in analytical methods of food*. Bratislava: Slovenská technická univerzita v Bratislave, 2009. ISBN 978-80-227-3071-6. s. 163-165.

HANUSOVÁ, V. - ČERTÍK, M. - ZALIBERA, M. - RAPTA, P. - BREIEROVÁ, E. Vplyv rôznych izolačných metód na profil a vlastnosti extraktov pigmentotvorných kvasiniek. In STARUCH, L. *Laboralim 2009: Recent progress in analytical methods of food*. Bratislava: Slovenská technická univerzita v Bratislave, 2009. ISBN 978-80-227-3071-6. s. 99-106.

KLAUDINY, J. - BACHANOVÁ, K. - ALBERT, Š. - HALGAŠOVÁ, L. - DZÚROVÁ, M. - KOPERNICKÝ, J. Honeybee defensins: their characterization and studies of their expression in honeybee colonies. In SLANINOVÁ, J. - VALTER, B. *Collection Symposium Series: Biologically Active Peptides - XIth Conference, April 22-24, 2009, Prague*. Prague: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, v.v.i., 2009. ISBN 978-80-86241-31-9. Vol. 11, p. 59-63.

KOŠÍKOVÁ, B. Novel applications of lignin preparations isolated from wastes of pulp and paper industry. In ČABALOVÁ, I. - GEFFERTOVÁ, J. - DIBDIAKOVÁ, J. *VIII. International Symposium „Selected Processes at the Wood Processing“, Štúrovo 2009*. Zvolen: Technical University in Zvolen, 2009. CD-Rom. Volume of Articles. ISBN 978-80-228-2006-6. 6 p.

11. Vedecké a odborné práce v zborníkoch (konferenčných aj nekonferenčných, vydaných tlačou alebo na CD)

b) nerecenzovaných:

BUČKO, M. - GEMEINER, P. - KRAJČOVIČ, T. - VIKARTOVSKÁ, A. - LACÍK, I. - MIHOVILOVIČ, M.D. - RUDROFF, F. Encapsulation of recombinant cells *E. coli* catalysing Baeyer-Villiger oxidations. In *Proceedings of XVII International Conference on Bioencapsulation, September 24-26, 2009, Groningen, Netherlands*. Groningen: Bioencapsulation Research Group, 2009. p. P56-page 1- 4.

KOŠŤÁLOVÁ Z. - HROMÁDKOVÁ, Z. - EBRINGEROVÁ, A. - HIRSCH, J. Potential antioxidant capacity of water soluble polysaccharides of the oil pumpkin biomass. In *5th*

International Conference on Polysaccharides-Glycoscience, 11-13 November 2009, Prague.
Prague: Czech Chemical Society, 2009. ISBN 978-80-86238-72-2. CD-Rom. s. 1-13.
Abstrakt publikovaný: In *Chemické listy*. Vol. 103, (2009), p. 763.

ŠEFČOVIČOVÁ, J. - TOMČÍK, P. - FILIP, J. - GEMEINER, P. - TKÁČ, J. A mediatorless electrochemical detection of NADH on a biopolymer dispersed carbon nanotube layer. In *ISABEL 2009: 2nd International Symposium on Applied Sciences in Biomedical and Communication Technologies, November 24-27, 2009, Bratislava, Slovak Republic.* Bratislava: Slovak University of Technology, 2009. CD Rom, 5 p.
Also published in: *Applied Sciences in Biomedical and Communication Technologies, 2009. ISABEL 2009. 2nd International Symposium on.* Bratislava, 2009. ISBN 978-1-4244-4640-7. p. 1-5. DOI: 10.1109/ISABEL.2009.5373678.

12. Vydané periodiká evidované v Current Contents:

Chemical Papers. Milan Polakovič (hlavný redaktor), Ján Hirsch (editorial manager).
Bratislava: Chemický ústav SAV. ISSN 0336-6352 (Print), 1336-9075 (Online). 6 × ročne.
Publikovanie tlačenej a elektronickej verzie zabezpečuje vydavateľstvo Springer-Verlag GmbH (Versita).

14. Vydané alebo editované zborníky z vedeckých podujatí:

37th Annual Conference on Yeasts: Programme and Abstracts, 13-15 May 2009, Smolenice, Slovakia. Bratislava: Institute of Chemistry SAS, 2009, 113 p. ISSN 1336-4839.

14. Vydané alebo editované zborníky z vedeckých podujatí - doplnky z roku 2008:

Contaminants and nutrients: availability, accumulation/exclusion and plant-microbia-soil interactions: COST Action 859 – Meeting of WGI Book of Abstracts, May 22-24, 2008, Smolenice, Slovakia. Editors Desana Lišková, Alexander Lux, Michal Martinka. Bratislava: Copycentrum PACI, 2008. 74 p. ISBN: 978-80-969950-0-4.

Príloha D

Údaje o pedagogickej činnosti organizácie

(meno pracovníka, názov predmetu/cvičenia/seminára, názov katedry a VŠ, počet hodín)

Prednášatelia semestrálnych predmetov v bakalárskom a magisterskom štúdiu

Ing. Miloš Hricovíni, PhD.

Rezonančná spektroskopia (4. ročník).

Katedra fyzikálnej chémie, Prírodovedecká fakulta UK, Bratislava.

1 h týždenne, úhrnne 12 h

RNDr. Desana Lišková, PhD.

Signálne a regulačné molekuly v rastlinných bunkách.

Katedra fyziológie rastlín, Prírodovedecká fakulta UK, Bratislava.

Úhrnne 12 h (letný semester)

Doc. Ing. Ladislav Petruš, DrSc.

Chémia sacharidov (5. ročník).

Katedra organickej chémie, Prírodovedecká fakulta UK, Bratislava.

2 h týždenne, úhrnne 26 h

Ing. Ivan Šimkovic, DrSc.

Chemické spracovanie dreva (5. ročník).

Oddelenie chemickej technológie dreva, celulózy a papiera, Ústav polymérnych materiálov, Fakulta chemickej a potravinárskej technológie STU, Bratislava.

2 h týždenne, úhrnne 24

Špeciálne prednášky

RNDr. Jaroslav Klaudiny, PhD.

Výskum antimikrobiálnych peptidov včely medonosnej ako faktorov rezistencie včelstiev voči chorobám (v rámci predmetu 5. ročníka štúdia: Vybrané kapitoly z biochémie a molekulárnej biológie I.).

Katedra biochémie, Prírodovedecká fakulta UK, Bratislava.

Úhrnne: 2 h

Ing. Vladimír Mastihuba, PhD.

Mliekárstvo

Oddelenie potravinárskej technológie, Ústav biotechnológie a potravinárstva, Fakulta chemickej a potravinárskej technológie STU, Bratislava.

Úhrnne 3 h

Enzymológia a enzýmové inžinierstvo.

Oddelenie biochemickej technológie, Ústav biotechnológie a potravinárstva, Fakulta chemickej a potravinárskej technológie STU, Bratislava.

Úhrnne 2 h

Ing. Renáta Vadkertiová, PhD.

Kvasinky a kvasinkovité mikroorganizmy - ich výskyt, vlastnosti a úschova.

Katedra mikrobiológie a virológie, Prírodovedecká fakulta UK, Bratislava.

Úhrnné 2 h

Ing. Igor Tvaroška, DrSc.

Introduction into molecular modeling methods.

Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany

Úhrnné 1 h

RNDr. Peter Biely, DrSc.

Lecturer in the postgraduate course „Sustainable Products and Resources“ as a part of the „Master in Advanced Microbiology“:

1. Xylanolytic enzymes: production, properties and applications.
2. Diversity of endo-xylanases in substrate recognition.
3. Accessory xylanolytic enzymes.

Department of Microbiology, Faculty of Biology, University of Barcelona, March 23-28, 2009.

Úhrnné 16 h

Guest teacher on the PhD course „Biotechnology for Bioethanol Production“:

1. Enzyme discovery for bioethanol production.
2. Hemicellulolytic depolymerisation enzymes.
3. Hemicellulolytic accessory enzymes and enzyme synergism.
4. The challenge of measuring enzyme activities.

Department of Chemical and Biological Engineering, Chalmers University of Technology, Göteborg, Sweden, 18-23 October 2009.

Úhrnné 5 h

Visiting professor to present special lectures/workshops to postgraduate students and short course „Basic Carbohydrate Chemistry and Biochemistry“

Department of Biotechnology, School of Engineering of Lorena, University of Sao Paulo, Brazil, March 2-21, 2009.

Úhrnné 36 h (z toho 6 h cvičenia)

Vedúci cvičení v bakalárskom a magisterskom štúdiu

Ing. Vladimír Mastihuba, PhD.

Vedúci odbornej praxe

Oddelenie biochemickej technológie, Ústav biotechnológie a potravinárstva, Fakulta chemickej a potravinárskej technológie STU, Bratislava.

Úhrnné 120 h

Vedúci odbornej praxe

Katedra hodnotenia a spracovania živočíšnych produktov, Fakulta biotechnológie a potravinárstva SPU, Nitra.

Úhrnné 160 h

Ing. Marek Bučko, PhD.

Cvičenie z biotechnológie (projekt študijného programu I)

Ústav biotechnológie a potravinárstva, Fakulta chemickej a potravinárskej technológie STU, Bratislava

Úhrnne 24 h

RNDr. Karin Kollárová, PhD.

Diplomový seminár (4. a 5. ročník študijného odboru „Biológia a chémia“)

Katedra fyziológie rastlín, Prírodovedecká fakulta UK, Bratislava.

2 h týždenne, úhrnne 24 h (zimný a letný semester)

Ing. Igor Tvaroška, DrSc.

Computing training

Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Cologne, Germany

Úhrnne 4 h

Mgr. Ivan Zelko, PhD.

Diplomový seminár (4. a 5. ročník študijného odboru „Biológia a chémia“)

Katedra fyziológie rastlín, Prírodovedecká fakulta UK, Bratislava.

2 h týždenne, úhrnne 24 h

Vedúci diplomovej a preddiplomovej praxe

Ing. Emília Breierová, PhD.

Študent: Bc. Lucia Mikušová (FCHPT STU)

Úhrnne 120 h

RNDr. Karin Kollárová, PhD.

Študenti: Zuzana Vatehová (PriF UK), Danica Richterová (PriF UK)

Úhrnne 120 h

Mgr. Ivan Zelko

Študent: Sandra Vašiová (PriF UK)

Úhrnne 60 h

Príloha E**Medzinárodná mobilita organizácie****Tabuľka E1. Vyslanie vedeckých pracovníkov do zahraničia na základe dohôd**

Krajina	Druh dohody					
	MAD, KD, VTS		Medziústavná		Ostatné	
	Meno pracovníka	Počet dní	Meno pracovníka	Počet dní	Meno pracovníka	Počet dní
Brazília					Biely	23
Česká republika	Garajová Stratilová	9 9			Breierová Capek Husárová Kolarova Košíková Medovarská Nemčovič Paulovičová E. Paulovičová L. Tkáč Tvaroška	4 24 2 3 1 6 1 4 4 1 2
Dánsko					Tvaroška	1
Francúzsko	Matulová	15	Matulová Capek	44 15	Both Husárová Mucha Zelko	11 61 4 365
Grécko	Tvaroška	5				
Nemecko	Krupička Tvaroška	11 3			Paulovičová L.	7
India					Capek	14
Juhoafrická republika	Biely Lišková	23 14				
Kanada					Lattová	365
Maďarsko	Hricovíni Lišková	3 3				
Poľsko					Capek	6
Rakúsko	Kóňa Nahálka	26 14			Both Capek Gregorová Nemčovič Tomčová Tvaroška	25 1 365 1 71 1
Slovinsko	Hricovíni	5				
Spojené štáty americké					Bekešová Biely Košíková Kozák Tomčová	365 20 9 11 92
Španielsko					Biely	7
Švajčiarsko	Krupička Tvaroška	4 3				
Švédsko	Biely	4				
Taliansko	Biely Hricovíni Vršanská	3 5 3	Hricovíni	5	Petruš	5

Veľká Británia					Baráth Šesták	46 257
Počet vyslaní spolu		162		64		2185

MAD - medziakademické dohody; KD - kultúrne dohody; VTS - vedecko-technická spolupráca v rámci vládnych dohôd.

Tabuľka E2. Prijatie vedeckých pracovníkov zo zahraničia na základe dohôd

Krajina	Druh dohody					
	MAD, KD, VTS		Medziústavná		Ostatné	
	Meno pracovníka	Počet dní	Meno pracovníka	Počet dní	Meno pracovníka	Počet dní
Česká republika	Flodrová D. Čmelík R.	12 12				
India					Ray B.	92
Japonsko					Makishima S	3
Juhoafrická republika					van Staden H. van Zyl W.H.	7 10
Maďarsko	Sipiczki M.	7				
Poľsko					Pawlaczyk I.	120
Počet prijatí spolu		31				232

Tabuľka E3. Účast' pracovníkov organizácie na konferenciách v zahraničí

Krajina	Názov konferencie	Meno pracovníka	Počet dní
Česká republika	7th Discussions in Structural Molecular Biology	Krupička	3
	XIII. Setkání biochemiků a molekulárních biologů	Halgašová	2
	CUKRBLIK 2009	Vráblová	2
		Neščáková	2
	Biologically Active Peptides XI	Klaudiny	4
	8. Európske fórum o vede	Hirsch	4
	SMEs go Health & Health NCP Net	Katrlík	2
	Kvasinkové dny III	Farkaš V.	4
	5th International Conference on Polysaccharides- Glycoscience 2009	Capek	5
		Hirsch	5
		Hromádková	5
Čína	BIT's 2nd Annual World Cancer Congress-2009	Košíková	10
Fínsko	EPNOE 2009 - Polysaccharides as a Source of Advanced Materials	Hromádková	7
	13th ICQC	Kóňa	8
Francúzsko	6. International Conference on Proteoglycans	Hricovíni	6
	Tenth Tetrahedron Symposium	Tvaroška	7

Holandsko	XVII. Int. Conference on Bioencapsulation, Groningen	Bučko	4
India	24th Carbohydrate Conference - CARBO-XXIV	Capek	3
Maďarsko	Annual Meeting of the Carbohydrate group of has 2009	Mészárosová	2
	2nd Central European Forum for Microbiology (CEFORM)	Farkaš V.	3
Mexiko	Polymer Chemistry Conference 2009	Košíková	8
Nemecko	18th International Mass Spectrometry Conference	Mičová	7
		Pätoprstý	7
	2nd European Congress of Immunology	Bystrický	9
		Medovarská	7
		Neščáková	7
		Paulovičová	7
Poľsko	IV International Conference on Molecular Mechanisms in Fungal Cell Wall Biogenesis	Farkaš V.	7
		Mazáň	7
Portugalsko	CORM V - Carbohydrates as Organic Raw Materials	Poláková	6
Rakúsko	15th European Carbohydrate Symposium - Eurocarb 15	Bystrický	6
		Capek	6
		Đuranová	6
		Farkaš P.	6
		Hirsch	6
		Hricovíni	6
		Hricovíniová	6
		Husárová	6
		Kóňa	6
		Mičová	6
		Nahálka	5
		Petrus	6
		Pätoprstý	6
		Poláková	6
		Raab	6
		Tomčová	6
		Turjan	6
		Tvaroška	6
		Uhliariková	1
	7th ISRR Symposium Root Research and Applications - RootRAP	Kollárová	3
		Lišková	3
		Zelko	3
	SMEs go Health & NCP Net	Katrlík	1
Spojené štáty americké	20th International Symposium on Glycoconjugates - GLYCO XX	Hirsch	10
		Tvaroška	10
	Pacific Rim Summit on Industrial Biotechnology & Bioenergy	Košíková	11
	237th American Chemical Society National Meeting	Košíková	9
Srbsko	Meeting COST 928	Đuranová	4
		Kolenová	4
Švajčiarsko	SCHRÖDINGER 2009	Kóňa	4
	Final Int. Conference - COST Action 859	Lišková	7
Švédsko	Meeting COST Action FP 0602	Biely	4
	EUROMAR 2009	Matulová	7
Taliansko	8th Carbohydrate Bioengineering Meeting	Hirsch	6
		Tvaroška	6

	Meeting COST Action 868 „Biotechnical functionalization of renewable polymeric materials“	Biely	5
	Workshop Quantum Monte Carlo in the Apuan Alps V	Krupička	11
Turecko	International Symposium on Biotechnology: Developments and Trends - BIOTECH METU 2009	Biely	4

Príloha F

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