

Chemický ústav
Slovenskej akadémie vied



SPRÁVA O ČINNOSTI
ZA ROK 2008

Bratislava
január 2009

O b s a h

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I. Základné údaje o organizácii

1. Kontaktné údaje

Názov organizácie: **Chemický ústav SAV**

Riaditeľ: **Ing. Igor Tvaroška, DrSc.**
Tel: 59410324, 59510200 Fax: 59410222 E-mail: chemitsa@savba.sk
chemdir@savba.sk

Zástupca riaditeľa (štatutárny): **Ing. Miroslav Kooš, DrSc.**
Tel: 59410254 Fax: 59410222 E-mail: chemmiro@savba.sk

Vedecká tajomníčka: **Ing. Mária Mastihubová, PhD.**
Tel: 59410246 Fax: 59410222 E-mail: chemjama@savba.sk

Predseda vedeckej rady: **RNDr. Ján Mucha, PhD.**
Tel: 59410351 Fax: 59410222 E-mail: chemjmuc@savba.sk

Adresa sídla: **845 38 Bratislava, Dúbravská cesta 9**
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Webstránka: <http://www.chem.sk/>

Typ organizácie: **rozpočtová od r. 2004**

2. Údaje o zamestnancoch

Tabuľka I.1. Počet a štruktúra zamestnancov

ŠTRUKTÚRA ZAMESTNANCOV	K	K - do 35 r.		K - ved. prac.		F	P
		M	Ž	M	Ž		
Celkový počet zamestnancov	147	17	30	-	-	136	129.6
Vedeckí pracovníci	63	8	7	33	30	53	50.3
Odborní pracovníci VŠ	32	6	13	-	-	31	23.6
Odborní pracovníci ÚS	32	1	3	-	-	32	35.2
Ostatní pracovníci	11	0	0	-	-	11	10.0
Doktorandi v dennej forme doktorandského štúdia	9	2	7	-	-	9	10.6

K - kmeňový stav zamestnancov v pracovnom pomere k 31.12.2008 (vrátane riadnej materskej dovolenky, zamestnancov pôsobiacich v zahraničí, v štátnych funkciách, členov Predsedníctva SAV, zamestnancov pôsobiacich v zastupiteľských zborech a na základnej vojenskej službe)

F - fyzický stav zamestnancov k 31.12.2008 (bez riadnej materskej dovolenky, zamestnancov pôsobiacich v zahraničí, v štátnych funkciách, zamestnancov pôsobiacich v zastupiteľských zborech a na základnej vojenskej službe)

P - celoročný priemerný prepočítaný počet zamestnancov

M, Ž - muži, ženy

Tabuľka I.2. Štruktúra vedeckých pracovníkov (kmeňový stav k 31.12.2008)

Rodová skladba	Pracovníci s hodnosťou				Vedeckí pracovníci v stupňoch		
	DrSc.	CSc., PhD.	prof.	doc.	I.	IIa.	IIb.
Muži	11	22	1	2	11	11	11
Ženy	1	29	1	0	1	17	12

Tabuľka I.3. Štruktúra pracovníkov podľa veku a rodu zo stĺpca F v tabuľke I.1. zaradených do riešenia projektov (domácich alebo medzinárodných)

Veková štruktúra (roky)	< 30	31-34	35-39	40-44	45-49	50-54	55-59	60-64	> 65
Muži	9	4	5	-	4	7	8	6	3
Ženy	15	7	5	5	7	15	7	7	1

Pozn. Pracovníci sú zaradení podľa veku, ktorí dosiahli v priebehu roka 2008.

Priemerný vek riešiteľov projektov podľa vyššie uvedenej tabuľky:

Muži: 45.5

Ženy: 43.5

Priemerný vek všetkých kmeňových zamestnancov k 31.12.2008: 46.5

Priemerný vek kmeňových vedeckých pracovníkov k 31.12.2008: 44

Pozn.: V Prílohe č. 1 je uvedený menný zoznam pracovníkov k 31.12.2008 s vyznačením úväzku a riešiteľskej kapacity.

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

V roku 2008 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 2008 sa ústav umiestnil medzi najlepšími pracoviskami II. odd. vied SAV.

Od roku 2009 prechádza ústav na príspevkovú formu hospodárenia.

II. Vedecká činnosť

1. Domáce projekty

Tabuľka II.1. Zoznam domácich projektov riešených v roku 2008

ŠTRUKÚRA PROJEKTOV	Počet projektov		Pridelené financie na rok 2008 (Sk)		
	A organizácia je nositeľom projektu*	B org. sa zmluvne podieľa na riešení projektu	A		B
			celkom	pre organ.	
1. Vedecké projekty, ktoré boli v r. 2008 financované VEGA	19	3	3 328 000	3 328 000	299 000
2. Projekty, ktoré boli v r. 2008 financované APVV**	10	5	12 967 000	9 229 000	501 000
3. Účasť na nových výzvach APVV v r. 2008***	0	0	-	-	-
4. Projekty riešené v rámci ŠPVV	0	1	1 323 200	1 323 200	0
5. Projekty centier excelentnosti SAV	1	1	1 000 000	900 000	309 000
6. Vedecko-technické projekty, ktoré boli v r. 2008 financované	0	0	0	0	0
7. Projekty podporované Európskym sociálnym fondom	1	0	3 884 721	3 884 721	0
8. Iné projekty (ústavné, na objednávku rezortov a pod.)	0	0	0	0	0

*Organizácia vedúceho projektu, zodpovedného riešiteľa, zhotoviteľa, vedúceho centra alebo manažéra projektu.

**Netýka sa medzinárodných projektov z výziev APVV (medzištátne zmluvy, COST a pod.).

***Projekty so začiatkom financovania v roku 2008 z výziev v roku 2008.

Tabuľka II.2. Zoznam domácich projektov podaných v roku 2008

Štruktúra projektov	Miesto podania	A organizácia je nositeľom projektu	B organizácia sa zmluvne podieľa na riešení projektu
1. Účasť na nových výzvach APVV r. 2008*	—	4	0
2. Projekty výziev OP ŠF 2.1., 4.1., 5.1. podané v r. 2008 **	Bratislava regióny	1 0	3 0
3. Projekty výziev FM EHP**	—	5	1

*Projekty so začiatkom financovania v roku 2009 z výziev 2008.

**Podané projekty z výziev.

K bodu 1. Účasť na nových výzvach APVV r. 2008

Výzva: Výzva APVV pre aktivity ENV v roku 2008 (RNP-2008)
Názov programu: *The EuroGlycosciences Forum (Euroglycoscience)*
Číslo programu: 07-RNP-015
Odborná komisia: LESC/EMRC
Podávateľ projektu: Chemický ústav SAV
Zodpovedný riešiteľ: Ing. Peter Gemeiner, DrSc.
Doba riešenia: 01/2009-12/2013
Stav projektu: podaný

Výzva: Výzva APVV pre aktivity ENV v roku 2008 (RNP-2008)
Názov programu: *The EuroGlycosciences Forum (Euroglycoscience)*
Číslo programu: 07-RNP-015
Odborná komisia: LESC/EMRC
Podávateľ projektu: Chemický ústav SAV
Zodpovedný riešiteľ: Ing. Slavomír Bystrický, DrSc.
Doba riešenia: 01/2009-12/2013
Stav projektu: podaný

Výzva: Výzva APVV pre aktivity ENV v roku 2008 (RNP-2008)
Názov programu: *The EuroGlycosciences Forum (Euroglycoscience)*
Číslo programu: 07-RNP-015
Odborná komisia: LESC/EMRC
Podávateľ projektu: Chemický ústav SAV
Zodpovedný riešiteľ: Doc. Ing. Ladislav Petruš, DrSc.
Doba riešenia: 01/2009-12/2013
Stav projektu: podaný

Výzva: Výzva APVV pre aktivity ENV v roku 2008 (RNP-2008)
Názov programu: *The EuroGlycosciences Forum (Euroglycoscience)*
Číslo programu: 07-RNP-015
Odborná komisia: LESC/EMRC
Podávateľ projektu: Chemický ústav SAV
Zodpovedný riešiteľ: RNDr. Ján Mucha, CSc.
Doba riešenia: 01/2009-12/2013
Stav projektu: podaný

K bodu 2. Projekty výziev OP ŠF 2.1., 4.1., 5.1. podané v r. 2008

Názov projektu: *Centrum excelentnosti pre glykomiku*
Kód výzvy: OPVaV-2008/4.1/01-SORO
Podávateľ projektu: Chemický ústav SAV
Partneri projektu: ÚEF SAV, ÚZo SAV, ÚVS SAV, ÚMB SAV
Stav projektu: vyradený z dôvodu formálnych nedostatkov - cit.: „Žiadosť o NFP spolu so všetkými prílohami nebola pevne zviazaná“; oznámené po 95 dňoch od podania žiadosti (2 týždne pred zverejnením výsledkov). Toto rozhodnutie považujeme za diskriminačné, pretože uvedený dôvod podľa vopred určených pokynov a pravidiel nepatrí medzi

explicitne vymenované nedostatky, kvôli ktorým mohli byť projekty vyradené, takže nemal byť dôvodom na vyradenie ale mali sme byť Agentúrou MŠ SR pre štrukturálne fondy EÚ vyzvaní tento formálny nedostatok odstrániť, podobne ako bolivyzvaní niektorí iní žiadatelia.

Názov projektu: *Centrum excelentnosti metód a procesov zelenej chémie*
Kód výzvy: OPVaV-2008/4.1/01-SORO
Podávateľ projektu: PriF UK, Bratislava
Partneri projektu: CHÚ SAV, FCHPT STU
Zodp. riešiteľ z CHÚ: Doc. Ing. Ladislav Petruš, DrSc.
Stav projektu: schválený; celkový príspevok: 39 929 576,05 Sk (z toho CHÚ požadoval: 4 761 455 Sk)

Názov projektu: *Centrum pre materiály, vrstvy a systémy pre aplikácie a chemické procesy v extrémnych podmienkach*
Kód výzvy: OPVaV-2008/4.1/01-SORO
Podávateľ projektu: Ústav anorganickej chémie SAV
Partneri projektu: CHÚ SAV, ÚPo SAV, FCHPT STU
Zodp. riešiteľ z CHÚ: Ing. Peter Gemeiner, DrSc.
Stav projektu: schválený; celkový príspevok: 39 999 370 Sk (z toho CHÚ požadoval: 2 700 000 Sk)

Názov projektu: *Centrum excelentnosti pre ochranu a využívanie krajiny a biodiverzitu*
Kód výzvy: OPVaV-2008/4.1/01-SORO
Podávateľ projektu: Ústav krajinnej ekológie SAV
Partneri projektu: CHÚ SAV, ÚZo SAV, UMB SAV, BoÚ SAV, ÚH SAV, PriF UK
Zodp. riešiteľ z CHÚ: RNDr. Desana Lišková, PhD., Ing. Elena Sláviková, PhD.
Stav projektu: schválený; celkový príspevok: 40 000 000 Sk (z toho CHÚ požadoval: 3 682 000 Sk)

K bodu 3. Projekty výziev FM EHP

Názov podprojektu: *Funkčné polysacharidy z rastlinných odpadov - spôsob trvalo udržateľného a efektívneho využívania rastlinnej biomasy*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Číslo podprojektu: SAV-FM-EHP-2008-03-05
Oblasť podpory: 3 - trvalo udržateľný rozvoj
Podávateľ projektu: Chemický ústav SAV
Vedúci podprojektu: Ing. Ján Hirsch, DrSc.
Doba realizácie: 09/2008-10/2010
Príspevok: 2 400 000 Sk (72 200 €) - z toho 960 000 Sk na rok 2008

Názov podprojektu: *Príprava účinných biopalivových článkov založených na využití nanoštruktúr na výrobu elektrickej energie z obnoviteľných zdrojov a organického odpadu*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Číslo podprojektu: SAV-FM-EHP-2008-04-04
Oblasť podpory: 4 - obnoviteľné zdroje energie
Podávateľ projektu: Chemický ústav SAV

Vedúci podprojektu: Ing. Ján Tkáč, PhD.
Doba realizácie: 10/2008-09/2010
Príspevok: 3 157 800 Sk (100 000 €) - z toho 1 263 120 Sk na rok 2008

Názov podprojektu: *Produkcia ľudských rekombinantných lyzozomálnych enzýmov pre liečbu dedičných metabolických ochorení v enzýmom náhradnej terapii*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Podávateľ projektu: Chemický ústav SAV
Vedúci podprojektu: RNDr. Ján Mucha, CSc.
Stav projektu: vyradený; dôvod: neuspel

Názov podprojektu: *Nové možnosti prevencie akútnych a chronických mykotických ochorení spôsobených kvasinkami rodu Candida – biotechnológia širokospektrálnych subcelulárnych vakcín*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Podávateľ projektu: Chemický ústav SAV
Vedúci podprojektu: Ing. Slavomír Bystrický, DrSc.
Stav projektu: vyradený z formálnych dôvodov - nebola dodaná jedna príloha

Názov podprojektu: *Nové spôsoby prípravy a ochrany materiálov z poľnohospodárskych odpadov pred požiarom*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Podávateľ projektu: Chemický ústav SAV
Vedúci podprojektu: Ing. Ivan Šimkovic, DrSc.
Stav projektu: vyradený; z dôvodu, že neboli dodané niektoré požadované prílohy

Názov podprojektu: *Slovinol: príprava, charakterizácia, chemické, biologické a liečebné účinky*
Kód výzvy: Blokový grant FM EHP (Nórsky blokový grant)
Podávateľ projektu: Ústav normálnej a patologickej fyziológie SAV
Partneri projektu: CHÚ SAV, ÚVS SAV, FCHPT STU
Vedúci podprojektu: RNDr. Oľga Pecháňová, DrSc. (ÚNPF)
Zodp. riešiteľ z CHÚ: RNDr. Mária Matulová, PhD.
Stav projektu: vyradený; dôvod neudáný

Medzinárodné projekty sú uvedené v kapitole IV. Medzinárodná vedecká spolupráca.
Bližšie vysvetlenie k domácim a medzinárodným projektom je v *Prílohe č. 2*.

2. Najvýznamnejšie výsledky vedeckej práce

a) základného výskumu

Metóda prípravy metylglykofuranozidov priamo z acyklických nitroalditolov (M.

Vojtech, M. Petrušová, B. Pribulová, L. Petruš)

Pôsobenie metanolického roztoku silnej kyseliny na sodnonitronátové formy nitroalditolov pri teplote $-30\text{ }^{\circ}\text{C}$ vedie k ich regioselektívnej premene na metylglykofuranozidy. Reakcia vykazuje podstatne vyššiu stereoselektivitu pre východiskové látky s 2,3-*erythro*-konfiguráciu ako pre 2,3-*treo*-substráty a hlavnými produktami sú vždy *cis*-methylglykozidy, na rozdiel od

Fischerovej glykozidácie, kde preferovane vznikajú *trans*-metylglykozidy. Projekty APVV-51-034504 a VEGA 2/6129/26 (**Chemický ústav SAV**).

The method of preparation of methyl glycofuranosides directly from nitroalditols.

VOJTECH, M. - PETRUŠOVÁ, M. - PRIBULOVÁ, B. - PETRUŠ, L. Direct conversion of 1-deoxy-1-nitroalditols to methyl glycofuranosides. In *Tetrahedron Letters*. Vol. 49, (2008), p. 3112-3116. (2.615 – IF2007)

Teoretické štúdium mechanizmu inhibície HIV-1 proteázy epoxidovými inhibítormi (J. Kóna)

Dva navrhnuté mechanizmy ireverzibilnej inhibície HIV-1 proteázy epoxidovými inhibítormi boli študované na enzýmových modeloch s použitím ab initio (MP2) a density functional theory (DFT) metód (B3LYP, MPW1K a M05-2X). Na základe vypočítanej geometrie tranzitného stavu boli definované štrukturálne dáta dôležité pre dizajn epoxidových inhibítorov HIV-1 proteázy. Projekt APVV-51-011706 (**Chemický ústav SAV**).

Theoretical study on the mechanism of a ring-opening reaction of oxirane by the active-site aspartic dyad of HIV-1.

KÓŇA, J. Theoretical study on the mechanism of a ring-opening reaction of oxirane by the active-site aspartic dyad of HIV-1 protease. In *Organic & Biomolecular Chemistry*. Vol. 6, (2008), p. 359-365. (3.167 – IF2007)

Izolácia a štrukturálna identifikácia nového arabinogalaktánu s vysokým obsahom 3-O-metyl-D-galaktózy zo Šalvie lekárskej (P. Capek)

Z nadzemných častí liečivej rastliny Šalvie lekárskej (*Salvia officinalis* L.) bol izolovaný významný typ arabinogalaktánu majúci vysoký obsah 3-O-metyl-D-galaktózy. Chemické ako i spektroskopické štrukturálne štúdiá naznačili, že ide o polysacharid, ktorého hlavný reťazec pozostáva z β -1,6-viazaných jednotiek D-galaktózy, z ktorých asi jedna tretina je substituovaná v polohe C-3 metylovými skupinami a jedna tretina nesie krátke bočné reťazce, zložené z jednotiek L-arabinózy. Podobný typ polysacharidu nebol doposiaľ izolovaný a v literatúre opísaný. Projekty VEGA 2/6131/26 a 2/0155/08 (**Chemický ústav SAV**).

Isolation and structural identification of a novel arabinogalactan carrying a high content of 3-O-methyl-D-galactose residues from *Salvia officinalis* L.

CAPEK, P. An arabinogalactan containing 3-O-methyl-D-galactose residues isolated from the aerial parts of *Salvia officinalis* L. In *Carbohydrate Research*. Vol. 343, (2008), p. 1390-1393. (1.723 – IF2007)

b) aplikačného typu

Preparáty na báze huby *Trichoderma* pre biologickú ochranu rastlín (V. Farkaš, M. Nemčovič)

V spolupráci s firmou Azoter, spol. s r.o., boli vyvinuté preparáty pre biologickú ochranu rastlín (predovšetkým hustosiatych obilnín) na báze huby *Trichoderma*. Vo fermentačnom

závoďte v Petrovej Vsi prebiehajú overovacie skúšky technológie prípravy spór polosuchou fermentáciou. Doterajšie pilotné experimenty boli úspešné a v budúcom roku firma Azoter, spol. s r.o. plánuje prejsť na komerčnú výrobu preparátov pre poľnohospodárstvo. Používateľ: Azoter, spol. s r.o., Nové Zámky (**Chemický ústav SAV**).

Formulations based on fungus *Trichoderma* for biological protection of plants.

Stabilizácia priemyselného enzýmu kyselina sialová-aldolázy (J. Nahálka, A. Vikartovská, E. Hrabárová)

Bola vyvinutá nová technológia stabilizácie priemyselného enzýmu, sialová kyselina-aldoláza, enzýmu potrebného pri výrobe antivirov. Kyselina sialová predstavuje základnú molekulovú štruktúru pre prípravu inhibítorov chrípkových neuramidáz-antivirov proti chrípke. Biologická aktivita rekombinantného enzýmu je stiahnutá do inklúzných teliesok, ktoré sú zachytené do alginátu a zosieťované glutaraldehydom (CLIB-technology). Projekt APVV-51-040205 (**Chemický ústav SAV**).

Stabilization of the industrial enzyme sialic acid aldolase.

NAHÁLKA, J. - VIKARTOVSKÁ, A. - HRABÁROVÁ, E. A crosslinked inclusion body process for sialic acid synthesis. In *Journal of Biotechnology*. Vol. 134, (2008), p. 146-153. (2.565 – IF2007).

Proces súčasnej produkcie endoxylanázy a vetvených xylooligosacharidov (V. Puchart, P. Biely)

Termofilná huba *Thermomyces lanuginosus*, ktorá patrí medzi z najlepších prírodných producentov priemyselne významného enzýmu endoxylanázy, má xylanolytický enzýmový systém, ktorý jej umožňuje využívať iba lineárne časti glukurónoxylánu a arabinoxylánu. Vetvené fragmenty oboch polysacharidov, aldourónové kyseliny resp. arabinoxylooligosacharidy sa akumulujú v rastovom médiu v dôsledku absencie α -glukuronidázy a α -L-arabinofuranosidázy. Tieto vlastnosti huby sú základom procesu simultánnej produkcie vysokej hladiny endoxylanázy a xylooligosacharidov, ktoré majú možnosť využitia ako probiotiká, teda látky, ktoré podporujú v tráviacom trakte rast mikroorganizmov pozitívnych pre zdravie človeka. Projekt VEGA 2/6130/26 (**Chemický ústav SAV**).

Process of simultaneous production of endoxylanase and branched xylooligosaccharides.

PUCHART, V. - BIELY, P. Simultaneous production of *endo*- β -1,4-xylanase and branched xylooligosaccharides by *Thermomyces lanuginosus*. In *Journal of Biotechnology*. Vol. 137, (2008), p. 34-43. (2.565 – IF2007)

c) medzinárodných vedeckých projektov

Nová rodina sacharidovej esterázy identifikovaná na báze génu acetylerázy *Hypocrea jecorina* (V. Puchart, P. Biely)

Gén kódujúci acetylerázu *aes1* z *Hypocrea jecorina* (*Trichoderma reesei*) sa identifikoval na základe sekvenácie N-konca purifikovaného enzýmu, hmotnostnej spektrometrie peptidov a sekvenčnej analýzy genómu. Medzi génom tejto acetylerázy a doteraz známymi sacharidovým esterázami sa nenašla zhoda, ale gény podobnej sekvencie kódujúce bielkoviny

o neznámej funkcii sa našli v genómoch viacerých húb a baktérií, ktoré vegetujú v rastlinných zvyškoch. Expresiou génu *ael* sa získal rekombinantný proteín, ktorý vykazoval rovnaké katalytické vlastnosti ako natívny enzým. V sacharidoch preferuje deacetyláciu pozície 3 a 4 a katalyzuje trans-esterifikačné reakcie vo vodnom prostredí nasýtenom vinylacetátom. Výsledky sa stali základom zriadenia novej rodiny sacharidových esteráz (číslo 16 v CAZY) vhodných na enzýmovú degradáciu lignocelulózy. Bilaterárny projekt č. 58-3620-2-F133 (USDA, ARS, REE, Peoria, IL 61604, USA a CHÚ SAV) (**Chemický ústav SAV**).

Novel family of carbohydrate esterases, based on identification of the *Hypocrea jecorina* acetyl esterase gene.

LI, X.-L. - SKORY, C.D. - COTTA, M.A. - PUCHART, V. - BIELY, P. Novel family of carbohydrate esterases, based on identification of the *Hypocrea jecorina* acetyl esterase gene. In *Applied and Environmental Microbiology*. Vol. 74, (2008), p. 7482-7489. (4.004 – IF2007)

Metóda prípravy fluorescenčne značených oligosacharidov (O. Kosík, V. Farkaš)

Vypracovaná bola jednoduchá a rýchla metóda prípravy fluorescenčne značených oligosacharidov ich konjugáciou so sulforodamínom. Uvedené látky použité ako substráty umožnia vysokocitlivé stanovenie aktivity enzýmov typu transglykozyláz. Nakoľko transglykozylázy zohrávajú dôležitú úlohu pri výstavbe a modifikácii bunkových stien rastlín a húb, má stanovenie ich aktivity zásadný význam pre pochopenie procesov výstavby bunkových stien rastlín a húb. Projekt FP6-MRTN-CT-2004-512265, akronym WALLNET (**Chemický ústav SAV**).

One-pot fluorescent labeling of xyloglucan oligosaccharides with sulforhodamine.

KOSÍK, O. - FARKAŠ, V. One-pot fluorescent labeling of xyloglucan oligosaccharides with sulforhodamine. In *Analytical Biochemistry*. Vol. 375, (2008), p. 232-236. (3.002 – IF2007)

d) zámery na čerpanie štrukturálnych fondov EÚ v ďalších výzvach

Chemický ústav SAV participoval v roku 2008 v 4 návrhoch projektov výzvy OPVaV-2008/4.1/01-SORO štrukturálnych fondov EÚ - z toho v jednom projekte ako podavateľ a v troch projektoch ako partner. Nakoľko projekt „Centrum excelentnosti pre glykomiku“ bol vyradený iba pre formálne nedostatky, bude tento podaný opätovne v ďalšej výzve v roku 2009. Čerpanie bude zamerané najmä na vybavenie pracoviska prístrojmi, ktoré sú nevyhnutné pre udržanie unikátneho postavenia Chemického ústavu SAV v oblasti výskumu sacharidov. Vzhľadom na dlhodobé podfinancovanie kapitálovými prostriedkami je infraštruktúra nedostatočná. Doteraz sa tento nedostatok čiastočne riešil spoluprácou so zahraničnými pracoviskami avšak z dlhodobého hľadiska takýto stav nie je akceptovateľný.

3. Vedecký výstup (bibliografické údaje výstupov sú v Prílohe č. 3)
Tabuľka II.3. Zoznam publikácií a edícií

PUBLIKAČNÁ A EDIČNÁ ČINNOSŤ	Počet v r. 2008/ doplňky z r. 2007
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 vydané v domácich vydavateľstvách (BAB)	0/0
4. Odborné monografie vydané v domácich vydavateľstvách (BAA)	0/0
5. Kapitoly vo vedeckých monografiách a vysokoškol. učebniciach vydané v domácich vydavateľstvách (ABD, ACD)	1/0
6. Kapitoly vo vedeckých monografiách a vysokoškol. učebniciach vydané v zahraničných vydavateľstvách (ABC, ACC)	2/0
7. Kapitoly v odborných monografiách vydané v domácich vydavateľstvách (BBB)	0/0
8. Kapitoly v odborných monografiách vydané v zahraničných vydavateľstvách (BBA)	0/0
9. Vedecké práce v časopisoch evidovaných a/ v Current Contents (ADC, ADCA, ADCB, ADD, ADDA, ADDB, CDC, CDCA, CDCB, CDD, CDDA, CDDB) b/ v iných medzinárodných databázach	76/5 9/1
10. Vedecké a odborné práce v ostatných časopisoch (ADE, ADEA, ADEB, ADF, ADFA, ADFB, CDE, CDEA, CDEB, CDF, CDFA, CDFB)	2/0
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) b/ nerecenzovaných (AEE, AEF, AFC, AFD, AFDA, AFDB, BEE, BEF)	8/0 2/0
12. Vedecké a odborné práce v zborníkoch rozšírených abstraktov (AFE, AFF, BFA, BFB)	0/0
13. Recenzie vedeckých prác vo vedeckých časopisoch (EDI)	0/0
14. Vydané periodiká evidované v Current Contents	1/0
15. Ostatné vydané periodiká	0/0
16. Vydané alebo editované zborníky z vedeckých podujatí (FAI)	3/0
17. Vysokoškolské učebnice a učebné texty (ACA, ACB)	0/0
18. Vedecké práce uverejnené na internete (GHG)	0/0

19. Preklady vedeckých a odborných textov (EAJ)	0/0
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**Publikácia prináša nové vedecké poznatky alebo sa opiera o vedecké práce.*

Tabuľka II.4. Vedecké recenzie, oponentúry a prednášky

VEDECKÉ RECENZIE, OPONENTÚRY A PREDNÁŠKY	Počet v r. 2008/ doplnok z r. 2007
Vyžiadané recenzie rukopisov monografií a vedeckých prác v zahraničných časopisoch, príspevkov na konferencie s medzinárodnou účasťou, oponovanie grantových projektov	117/0
Prednášky a vývesky na vedeckých podujatiach s min. 30% zahraničnou účasťou	125/0
Ostatné prednášky a vývesky	4/0

Tabuľka II.5. Ohlasy

OHLASY	Počet v r. 2007	Doplnok za 2006
Citácie vo WOS	1048	41
Citácie v SCOPUS	99	15
Citácie v iných citačných indexoch a databázach	0	0
Citácie v publikáciách neregistrovaných v citačných indexoch	79	131
Recenzie a umelecké kritiky	0	0

Zoznam pozvaných príspevkov na medzinárodných konferenciách:

BIELY, P. Carbohydrate esterases: Emergence of new biocatalysts. In *11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice*. (plenárna prednáška - Dr. Biely)

Abstract published in *Program and Abstracts: 11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice*. Bratislava: Institute of Chemistry, VEDA, 2008. p. 17-18..

BIELY, P. Diversity of substrate recognition by microbial endoxylanases. In *International Seminar „Novozymes Science Infusion“, 25 March 2008, Bagsvaerd, Denmark*. (pozvaná prednáška - Dr. Biely)

BIELY, P. - MALIŠKOVÁ, S. - LI, X-L. - DE VRIES, R.P. - ĐURANOVÁ, M. Glucuronoyl esterase, a novel component of microbial plant cell wall enzyme systems. In *International Workshop „MIE Bioforum 2008“, 1-5 September 2008, Shima-Isobe, Japan*. (plenárna prednáška - Dr. Biely)

Abstract published in SAKKA, K. - KARITA, S. - KIMURA, T. - SAKKA, M. - MATSUI, H. - MIYAKE, H. - TANAKA, A. *Abstracts and Proceedings of MIE BIOFORUM 2008: Biotechnology of Lignocellulose Degradation, Biomass Utilization and Biorefinery, September 1-5, 2008, Shima-Isobe, Japan*. Tsu: Ito Print Publishing Division, 2008. ISBN 978-4-9903219-4-9 C3045. p. 53-54.

BIELY, P. - VRŠANSKÁ, M. - PUCHART, V. Xylanolytic enzymes of microorganism: production properties and applications. In *4th Congress of the Slovenian Microbiological Society with International Participation: Microbiology for Today, 19-22 November 2008, Portorož, Slovenia*. (plenárna prednáška - Dr. Biely)
Abstract published in *BARLIČ, D.* - *RASPOR, P.* *Book of Abstracts: 4th Congress of the Slovenian Microbiological Society with International Participation: Microbiology for Today, 19-22 November 2008, Portorož, Slovenia*. Ljubljana: Slovenian Microbiological Society, 2008. ISBN 978-961-90346-4-4. p. 26.

BUČKO, M. - GEMEINER, P. - VIKARTOVSKÁ, A. - LACÍK, I. - KOLLÁRIKOVÁ, G. - CHORVÁT, D. - MIHOVILOVIČ, M.D. - RUDROFF, F. Controlled encapsulation of biocatalysts for chiral immobilized biotechnology. In *COST Action 865 - XVI International Conference on Bioencapsulation, 4-6 September 2008, Dublin, Ireland*. (plenárna prednáška - Dr. Bučko)
Abstract published in *Proceedings of COST Action 865 - XVI International Conference on Bioencapsulation, 4-6 September 2008, Dublin, Ireland*. Dublin: Dublin City University, 2008. Session 7, O07-13, p. 1-4.

CAPEK, P. - MATULOVÁ, M. Reinvestigation of polysaccharides isolated from instant coffee powder of *Coffea arabica* beans. In *Seminar at Division of Medicinal Chemistry and Microbiology, Wroclaw University of Technology, 12 December 2008, Wroclaw*. (pozvaná prednáška - Dr. Capek)

HRICOVÍNI, M. Roles of natural and chemically-induced flexibility on protein binding properties of heparin sequences. In *16th Symposium on Glycosaminoglycans, 18-20 September 2008, Lovenjo, Italy*. (pozvaná prednáška - Dr. Hricovíni)

KOLENOVÁ, K. - DE VRIES, R.P. - STÅLBRAND, H. Comparison of three *Aspergillus nidulans* endo- β -mannanases. In *11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice*. (pozvaná prednáška - Dr. Kolenová)
Abstract published in *Program and Abstracts: 11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice*. Bratislava: Institute of Chemistry, VEDA, 2008. p. 31.

KOŠÍKOVÁ, B. Potential replacement of petrochemicals by lignin-based preparations. In *Medzinárodná vedecká konferencia „Zem v pasci? 2008: Analýza zložiek životného prostredia“, 28.-30. apríl 2008, Vyhne*. (pozvaná prednáška - prof. Košíková)
Full text published in *Zborník z medzinárodnej vedeckej konferencie „Zem v pasci? 2008: Analýza zložiek životného prostredia“, 28.-30. apríl 2008, Vyhne*. Zvolen: Technická univerzita vo Zvolene, 2008. ISBN 978-80-228-1848-3. CD-Rom. p. 282-287.

KOŠÍKOVÁ, B. Novel lignin-based anticarcinogenic agents for protecting of living organisms. In *BIT Life Sciences' 1st Annual World Cancer Congress-2008 „From Basic Research to Therapeutics“, June 12-15, 2008, Shanghai, China*. (pozvaná prednáška - prof. Košíková)
Abstract published in *Book of Abstracts: BIT Life Sciences' 1st Annual World Cancer Congress-2008 „From Basic Research to Therapeutics“, June 12-15, 2008, Shanghai, China*. Dalian: BIT Life Sciences, Inc., 2008. p. 203.

KOŠÍKOVÁ, B. Potential medicinal application of lignin biomass component. In *ERA-Chemistry Workshop „Chemistry of Raw Material Change/Chemical Transformation of Biomass, 13-16 April 2008, Kraków, Poland.* (pozvaná prednáška - prof. Košíková)
Abstract published in *Workshop Programme: ERA-Chemistry Workshop „Chemistry of Raw Material Change/Chemical Transformation of Biomass, 13-16 April 2008, Kraków, Poland.*
Warszawa: Institute of Organic Chemistry, Polish Academy of Sciences, 2008. p. Lecture 12.

KOŠÍKOVÁ, B. Lignin stabilizers as an alternative to petrochemicals based antioxidants for plastic and rubber. In *Pacific Rim Summit on Industrial Biotechnology & Bioenergy, September 10-12, 2008, Vancouver, Canada.* (pozvaná prednáška - prof. Košíková)
Abstract published in *Conference Brochure: 2008 Bio Pacific Rim Summit.* Washington: Biotechnology Industry Organization, 2008. p. 57-58.

MASTIHUBA, V. - KRAKOVÁ, T. - MASTIHUBOVÁ, M. Enzymatic acylations of saccharides in bulk water phase. In *11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice.* (pozvaná prednáška - Dr. Mastihuba)
Abstract published in *Program and Abstracts: 11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice.* Bratislava: Institute of Chemistry, VEDA, 2008. p. 33.

PAULOVÍČOVÁ, E. - KOVÁČOVÁ, E. - BYSTRICKÝ, S. Indukcia prozápalových cytokínov detoxifikovaným LPS-kandidátom pre subcelulárne vakcíny. In *VI. Martinské dni imunológie, 26.-29. marec 2008, Martin.* (pozvaná prednáška - Dr. Paulovičová)
Abstrakt publikovaný in *Klinická imunológia a alergológia.* Vol. 2008, č. 1 (2008), s. 36.

PETRUŠ, L. - VOJTECH, M. - PETRUŠOVÁ, M. - PRIBULOVÁ, B. - LATTOVÁ, E. - PERREAULT, H. Study of the competitive five- versus six-membered ring closure addition reactions using a cascade reaction sequence. In *11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice.* (pozvaná prednáška - Dr. Petruš)
Abstract published in *Program and Abstracts: 11th Bratislava Symposium on Saccharides, 21-26 September 2008, Smolenice.* Bratislava: Institute of Chemistry, VEDA, 2008. p. 27.

PETRUŠ, L. - VOJTECH, M. - PETRUŠOVÁ, M. - PRIBULOVÁ, B. - LATTOVÁ, E. - PERREAULT, H. Competitive five- vs. six-membered ring closure study using a cascade transformation of nitroalditol derivatives. In *10 More Years of Chirality in Chemistry and Medicinal Chemistry, 16-19 October 2008, Bratislava.* (plenárna prednáška - Dr. Petruš)
Abstract published in *SALIŠOVÁ, M. - FIŠERA, Ľ. Book of Abstracts: 10 More Years of Chirality in Chemistry and Medicinal Chemistry, 16-19 October 2008, Bratislava.* Bratislava: Vydavateľstvo STU – Publishing House of Slovak University of Technology, 2008. ISBN 978-227-2955-0. PL-9, p. 24.

6. Patentová a licenčná činnosť

a) Vynálezy, na ktoré bol udelený patent v roku 2008

- na Slovensku: 0
- v zahraničí: 0

b) Vynálezy prihlásené v roku 2008

- na Slovensku: 1

ÚRAD PRIEMYSELNÉHO VLASTNÍCTVA SLOVENSKEJ REPUBLIKY: *Kmene mikroorganizmu Trichoderma atroviride a Trichoderma harzianum a prostriedok na ochranu rastlín, ktorý ich obsahuje*. Prihlasovateľ: Chemický ústav SAV. Pôvodca: FARKAŠ, Vladimír - NEMČOVIČ, Marek - JAKUBÍKOVÁ, Lucia - ŠUBÍKOVÁ, Valéria - DRIMAL, Jozef - JANITOR, Anton - KUNCA, Andrej - LEONTOVYČ, Roman. Číslo prihlášky: 5108-2008. Dátum podania prihlášky: 5.12.2008.

- v zahraničí: 0

c) Predané licencie

- na Slovensku: 0
- v zahraničí: 0
- finančný prínos pre organizáciu v roku 2008 a súčet za predošlé roky: 0

d) Realizované patenty

- na Slovensku: 0
- v zahraničí: 0

7. Komentáre k vedeckému výstupu a iné dôležité informácie k vedeckým aktivitám pracoviska

Z celkového počtu 93 vedeckých prác v časopisoch je 81 (87%) publikovaných v periodikách evidovaných v Current Contents, pričom na 18.5% z týchto prác sú autormi len pracovníci ústavu, 31% je publikovaných v spolupráci s domácimi a 50.5% so zahraničnými spoluautormi.

Impakt faktor periodík, v ktorých sú publikácie uverejnené, sa pohybuje od 0.148 do 5.581, pričom jeho priemerná hodnota je 1.785, čo spolu s úhrnným počtom 1413 citácií (z toho 1089 vo WOS) možno považovať za cenný kvalitatívny ukazovateľ.

V porovnaní s minulým rokom sa počet karentovaných publikácií zvýšil o 7 (74 verzus 81). Priemerný impakt faktor poklesol o 0.239 avšak jeho hodnota 1.785 je blízka hodnote priemerného mediánu impakt faktora (1.826) pre vedné oblasti, v ktorých na ústave dominuje výskumná činnosť a doktorandské štúdium (MIF = 1.808, 2.550, 1.040, 1.954 a 1.780 pre Chemistry Organic, Biochemistry & Molecular Biology, Polymer Science, Biotechnology & Applied Microbiology a Chemistry Physical). Celkový počet citácií vzrástol o 86 (1413 verzus 1327), pričom výrazne - o 175 (210 verzus 35) vzrástol počet knižných citácií. Počet citácií v SCOPUS vzrástol o 21 (114 verzus 93) a počet citácií vo WOS je o 110 nižší ako vlani (1089 verzus 1199). Tento pokles však spôsobila vlnajšia komplexná dohľadávka citácií vo WOS. Uvedené výstupy indikujú, že sa už pozitívne prejavujú organizačné opatrenia v štruktúre ústavu a motivácia vedeckých pracovníkov podľa pravidiel odmeňovania, 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 2008 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, ...), 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 pochýb, 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 vyžiadaných 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 62 projektov - z toho 43 domácich (22 VEGA, 15 APVV, 1 ŠPVV, 2 projekty Centra excelentnosti SAV, 1 projekt podporovaný Európskym sociálnym fondom a 2 projekty výziev FM EHP) a 19 zahraničných (3 projekty 6. RP, 2 projekty 7. RP, 6 projektov COST, 4 projekty v rámci medzivládnych dohôd o VTS, 1 bilaterálny projekt nadväzujúci na MAD a 3 iné projekty financované zo zahraničných zdrojov) a pridelené finančné prostriedky predstavujú sumu ca 31.258 mil. Sk (z toho je ca 6.545 mil. Sk zo zahraničia, 21.997 mil. Sk z domácich projektov a 2.716 mil. Sk je príspevok zo ŠR na projekty 5. RP, 6. RP EÚ a MVTS), čo je vzhľadom na nedostatočnú výšku inštitucionálnej dotácie ústavu zo ŠR významný finančný prínos, pomáhajúci zabezpečiť prevádzku pracoviska. V porovnaní s rokom 2007, vzrástol celkový finančný prínos z grantovej činnosti o ca 5.7 mil. Sk.

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 umiestenie dosiahnuté pri evaluácii pracovísk II. odd. SAV začiatkom roka 2008.

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

1. Údaje o doktorandskom štúdiu

Tabuľka III.1. Zoznam akreditovaných študijných odborov s uvedením univerzity a fakulty alebo vysokej školy kde sa doktorandský študijný program uskutočňuje

Názov študijného odboru (ŠO)	Číslo ŠO	Doktorandský študijný program uskutočňovaný na: (uviest' univerzitu a fakultu alebo vysokú školu)
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 III.2. Počet doktorandov celkovo a počet ukončených v r. 2008

Forma	Počet k 31.12.2008				Počet ukončených doktorantúr v r. 2008					
	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	8	2	3	2	0	4	0	1	0
Externá	2	2	0	1	1	1	0	0	0	0

2. Zmena formy doktorandského štúdia

Tabuľka III.3. Preradenie z dennej formy štúdia na externú a opačne

	Počet
Preradenie z dennej formy na externú	4
Preradenie z externej formy na dennú	0

3. Prehľad údajov o doktorandoch, ktorí ukončili doktorandské štúdium úspešnou obhajobou

Tabuľka III.4. Menný zoznam ukončených doktorandov v r. 2008

Meno doktoranda	Forma DŠ	Dátum nástupu na DŠ	Dátum obhajoby	Číslo a názov vedného odboru	Meno a organizácia školiteľa	Fakulta udeľujúca vedeckú hodnotu
Ing. Petra Šedová-Mlčochová	externá	10.2002	04.2008	14-05-9 makromolekulová chémia	Ing. S. Bystrický, DrSc. CHÚ SAV	FCHPT STU
Ing. Pavol Farkaš	denná	09.2002	06.2008	14-02-9 organická chémia	Ing. S. Bystrický, DrSc. CHÚ SAV	PriF UK
Ing. Marek Bučko	externá	10.2002	10.2008	27-07-9 biotechnológia	Ing. P. Gemeiner, DrSc. CHÚ SAV	FCHPT STU
Ing. Marián Mazán	denná	09.2003	10.2008	15-10-9 mikrobiológia	Doc. Ing. V. Farkaš, DrSc. CHÚ SAV	PriF UK

4. Údaje o pedagogickej činnosti

Tabuľka III.5. Prednášky a cvičenia vedené v r. 2008

PEDAGOGICKÁ ČINNOSŤ	Přednášky		Cvičenia*	
	doma	v zahraničí	doma	v zahraničí
Počet prednášateľov alebo vedúcich cvičení**	10	1	0	1
Celkový počet hodín v r. 2008	105	25	870	36

* - vrátane seminárov, terénnych cvičení a preddiplomovej praxe

** - pracovníci, ktorí sú na dlhodobých stážach na univerzitách sa neuvádzajú

Prehľad prednášateľov predmetov a vedúcich cvičení, s uvedením názvu predmetu, úväzku, katedry a vysokej školy je uvedený v Prílohe č. 4.

Tabuľka III.6. Aktivity pracovníkov na VŠ

1.	Počet pracovníkov, ktorí pôsobili ako vedúci alebo konzultanti diplomových prác	6
2.	Počet vedených alebo konzultovaných diplomových prác	5
3.	Počet pracovníkov, ktorí pôsobili ako školitelia doktorandov (PhD.)	16
4.	Počet oponovaných dizertačných a habilitačných prác	11
5.	Počet pracovníkov, ktorí oponovali dizertačné a habilitačné práce	8
6.	Počet pracovníkov, ktorí pôsobili ako členovia komisií pre obhajoby DrSc. prác	4

7.	Počet pracovníkov, ktorí pôsobili ako členovia komisií pre obhajoby PhD. prác	10
8.	Počet pracovníkov, ktorí pôsobili ako členovia komisií, resp. oponenti v inauguračnom alebo habilitačnom konaní na vysokých školách	2

Tabuľka III.7. Členstvá v odborových komisiách pre doktorandské štúdium

Menný prehľad pracovníkov, ktorí boli menovaní do spoločných odborových komisií pre doktorandské štúdium**	Menný prehľad pracovníkov, ktorí pôsobili ako členovia vedeckých rád fakúlt a univerzít* a správnych rád univerzít	Menný prehľad pracovníkov, ktorí získali vyššiu vedeckú, pedagogickú hodnotu alebo vyšší kvalifikačný stupeň (s uvedením hodnoty/stupňa)*
Doc. Ing. Ladislav Petruš, DrSc. (4.1.16 organická chémia)	Doc. Ing. Ladislav Petruš, DrSc. (PRIF UK)	
Ing. Ján Hirsch, DrSc. (4.1.16 organická chémia)		
Ing. Vladimír Kováčik, DrSc. (4.1.17 analytická chémia)		
Ing. Igor Tvaroška, DrSc. (4.1.18 fyzikálna chémia)		
Prof. Ing. Božena Košíková, DrSc. (4.1.19 makromolekulová chémia)		
Ing. Anna Ebringerová, PhD. (4.1.19 makromolekulová chémia)		
RNDr. Anna Malovíková, PhD. (4.1.19 makromolekulová chémia)		
RNDr. Peter Biely, DrSc. (4.1.22 biochémia)		
Doc. Ing. Vladimír Farkaš, DrSc. (4.2.7 mikrobiológia)		
RNDr. Desana Lišková, PhD. (4.2.9 fyziológia rastlín)		
Ing. Peter Gemeiner, DrSc. (5.2.25 biotechnológie)		
Ing. Igor Tvaroška, DrSc. (2808V004 chemie materiálov, Fakulta technologická UTB, Zlín)		

* V zátvorke sú uvedené príslušné univerzity.

** V zátvorke sú uvedené čísla a názvy vedných odborov.

RNDr. Peter Biely, DrSc., Doc. Ing. Vladimír Farkaš, DrSc.

- členovia štátnej skúšobnej komisie pre študijný odbor „Biochémia a biotechnológia”,
zameranie „0720 Biotechnológia” na FCHPT STU v Bratislave.

Prof. Ing. Božena Košíková, DrSc.

- členka štátnej skúšobnej komisie pre študijný odbor „5.2.42 Drevárstvo“ na Drevárskej fakulte Technickej univerzity vo Zvolene.

5. Iné dôležité informácie k vedeckej výchove a pedagogickej činnosti

Chemický ústav SAV bol v roku 2008 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 2008 sa na CHÚ SAV celkom skolilo 23 doktorandov, z toho 11 riadnych doktorandov denného štúdia a 4 externí doktorandi. Traja zahraniční (ČR) externí doktorandi boli platení z grantového systému 6. RP EÚ. Hoci v roku 2007 bol menší záujem o DŠ na ústave a nastúpili iba 2 doktorandi, v roku 2008 bolo 5 novoprijatých doktorandov v dennom štúdiu a 1 v externom štúdiu. Dvaja z novoprijatých doktorandov sú zo zahraničia (Poľsko) a 1 kmeňová zamestnankyňa ústavu sa rozhodla zvýšiť si kvalifikáciu formou externej doktorandúry v odbore biochémia. 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 fyzikálna chémia (2), ďalej organická chémia (1), biotechnológia (1) a mikrobiológia (1). Dlhodobý 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 2008 piati doktorandi úspešne vykonali dizertačnú skúšku v požadovanom termíne a 4 doktorandi úspešne obhájili doktorandskú dizertačnú prácu. Boli to 2 externí doktorandi a 2 doktorandi, ktorí po ukončení 3-ročného doktorandského štúdia boli zamestnancami CHÚ s termínovanými pracovnými zmluvami. Všetky posudky oponentov dizertačných prác boli priaznivé, úroveň prác bola kvalitná, začo treba vysloviť uznanie školiteľom - vedeckým pracovníkom Chemického ústavu SAV.

Na jeseň 2008 prvým 4 doktorandom doktorandského štúdia riadeného podľa zákona č. 131/2002 Z. z. o vysokých školách uplynulo určené 3-ročné študijné obdobie. Na základe termínovaných pracovných zmlúv sa im však umožnilo predĺžiť si toto obdobie o jeden rok. Jeden doktorand z tohto ročníka predčasne ukončil vedeckú výchovu z dôvodu nedostatku kvalitných experimentálnych výsledkov.

Obhájiť dizertačné práce v roku 2009 sa chystajú aj ďalší doktorandi študujúci ešte podľa starého vysokoškolského zákona (3 v rámci termínovaných zmlúv na ústave a 3 už pôsobiaci mimo ústavu). Na základe výsledkov kontrolných dní, ktoré sa konali v októbri 2008 sa dá predpokladať, že v roku 2009 by mal obhajovať doktorandskú dizertačnú prácu nadpriemerný počet doktorandov (štyria doktorandi podľa nového vysokoškolského zákona a najmenej 4 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.

IV. Medzinárodná vedecká spolupráca

1. Medzinárodné projekty

Tabuľka IV.1. Informácie o medzinárodných projektoch

DRUH PROJEKTU	Počet projektov		Pridelené financie na rok 2008 zo zahranič. zdrojov (prepočítané na Sk)		Pridelené financie na rok 2008 z domácich zdrojov (Sk)	
	A organizácia je nositeľom projektu*	B organizácia sa podieľa na riešení projektu	A	B	A	B
1. Projekty 6. rámcového programu EÚ (riešené v r. 2008)	0	3	0	4 486 777	0	934 000
2. Projekty 7. rámcového programu EÚ (riešené v r. 2008)	0	2	0	1 544 214	0	154 000
3. Multilaterálne projekty v rámci vedec. programov COST, EUREKA, INTAS, ESPIRIT, PHARE, NATO, UNESCO, CERN, IAEA, ESF a iné	0	6	0	0	0	550 000
4. Projekty v rámci medzivládnych dohôd o vedecko-techn. spolupráci (Grécko, ČR, Nemecko a iné)	3	1	0	0	1 078 000	0
5. Bilaterálne projekty	1	0	0	0	0	0
6. Iné projekty financované alebo spolufinancované zo zahr. zdrojov	3	0	514 316	0	0	0

*Koordinátor alebo analogicky ako pri tabuľke II.1. Bližšie údaje sú uvedené v Prílohe č. 2.

Úspešnosť v získavaní projektov 7. RP EÚ:

- počet akceptovaných, resp. financovaných projektov/počet podaných návrhov: 1/7
(Bližšie údaje sú uvedené v Prílohe č. 2.)

2. Najvýznamnejšie prínosy MVTS ústavu vyplývajúce z uskutočnenej mobility a riešenia medzinárodných projektov

Okrem participácie na spoločných vedeckých projektoch umožňuje MVTS pracovníkom ústavu najmä dofinancovanie projektov 6. 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, ...).

Prostredníctvom MVTS sa viacerí riešitelia projektov mohli zúčastniť významných zahraničných vedeckých podujatí (konferencie, semináre, workshopy) a nadviazať nové kontakty a spolupráce.

Z MVTS vyplynula tiež dohoda o záštite 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 druhý rok. Okrem toho, viacerým doktorandom umožnila MVTS stáž na zahraničných pracoviskách.

V rámci uskutočnenej mobility získali pracovníci ústavu veľmi cenné experimentálne skúsenosti a teoretické poznatky z najmodernejších metodík využívaných v súčasnosti pri riešení vedeckých problémov.

Z dvojstrannej spolupráce s ARS, USDA v Peorii (IL) a Univerzitou v Stellenbosch (ZA) vyplynuli objavy nových rodín hemicelulolytických enzýmov: jednej rodiny sacharidovej esterázy a jednej rodiny glykozidhydrolázy. Enzýmy môžu nájsť uplatnenie v procesoch enzýmovej hydrolýzy rastlinnej biomasy

V rámci projektu 6. RP WALLNET absolvoval doktorand Ing. Ondřej Kosík 14-dňovú stáž na Department of Genetics, University of Cambridge vo Veľkej Británii, kde s použitím prístroja DNA-printera vyrobili polysacharidový glykočip na stanovenie aktivity transglykozyláz.

3. 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, COST Action D25 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

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

RNDr. Daniela Kákoniová, PhD.

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

RNDr. Nadežda Kolarova, PhD.

- členka výboru Komisie pre kvasinky Československej spoločnosti mikrobiologickej

Ing. Miroslav Kooš, DrSc.

- člen International Society of Heterocyclic Chemistry

Ing. Vladimír Kováčik, DrSc.

- člen American Society for Mass Spectrometry
- člen Arbeitsgruppe für Molekül-Spektroskopie der Österreichischen Gesellschaft für Analytische Chemie
- člen Executive Committee of European Mass Spectrometry Society
- reprezentant Slovenska v International Society for Mass Spectrometry
- zástupca Slovenska vo Verification Group, Organization for the Prohibition of Chemical Weapons

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

RNDr. Mária Matulová, PhD.

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

Ing. Vladimír Pätoprstý, PhD.

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

Doc. Ing. Ladislav Petruš, DrSc.

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

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. Členstvo v redakčných radách časopisov v zahraničí

RNDr. Peter Biely, DrSc.	- Yeast Newsletter (Associate Editor)
Ing. Peter Gemeiner, DrSc.	- Biotechnology and Applied Biochemistry - Biotechnology Letters/Biotechnology Techniques - Artificial Cells, Blood Substitutes, and Biotechnology
Ing. Miloš Hricovíni, PhD.	- Open Glycoscience
Ing. Miroslav Kooš, DrSc.	- Molecules (Regional Editor) - Open Glycoscience
Ing. Vladimír Kováčik, DrSc.	- Chemia Analityczna—Chemical Analysis (Regional Editor)
Prof. RNDr. Alexander Lux, CSc.	- Environmental Experimental Botany - Plant Growth Regulation - Root Journal
Doc. Ing. Ladislav Petruš, DrSc.	- Arkiv of Organic Chemistry (ARKIVOC)
Ing. Igor Tvaroška, DrSc.	- Open Glycoscience - International Journal of Carbohydrate Chemistry

5. Medzinárodné vedecké podujatia, ktoré ústav organizoval alebo sa na ich organizácii podieľal a vyhodnotenie ich prínosu

36th Annual Conference on Yeasts, Smolenice, May 14-16, 2008

(36. Výročná konferencia o kvasinkách, Smolenice, 14.-16. máj 2008)

Vedecký program konferencie bol rozdelený do troch sekcií: 1. biotechnológia a biokatalýza; 2. genetika a molekulárna biológia kvasiniek; 3. bunková biológia a biochémia kvasiniek. Úvodná plenárna prednáška, ktorú predniesol prof. W. Tanner z Institute of Cell Biology and Plant Physiology, University of Regensburg, Germany, bola tradične venovaná pamiatke zakladateľky Komisie pre kvasinky Dr. A. Kockovej-Kratochvílovej. Vďaka sponzorskej podpore a občianskemu združeniu NATURA odznali ďalšie prednášky renomovaných vedcov ako prof. S. Shimizu (Graduate School of Agriculture, Kyoto University, Japan), prof. G.G. Haraldsson (Science Institute, University of Iceland, Reykjavik), prof. A. Rapoport (University of Latvia, Riga, Latvia), Dr. A. Gacser (University of Szeged, Szeged, Hungary), Dr. T. Ferreira (Université de Poitiers, France) a Dr. F. Madeo (University of Graz, Austria). Celkovo odznalo 24 prednášok a prezentovaných bolo 44 plagátových vývesiek. Na tejto konferencii sa stretli pracovníci z VŠ, SAV a z priemyslu. Čoraz viac o ňu prejavujú záujem vedeckí pracovníci zo všetkých krajín V4 ale aj ostatných krajín.

Počet účastníkov: 87, z toho 43 zahraničných.

11th Bratislava Symposium on Saccharides, Smolenice, September 21-26, 2008
(11. Bratislavské sympóziu o sacharidoch, Smolenice, 21.-26. september 2008)

Sympóziu organizoval Chemický ústav SAV v spolupráci so združením Slovcarb, Slovenskou chemickou spoločnosťou, Slovenskou spoločnosťou pre biochémiu a molekulárnu biológiu, za podpory Európskeho sociálneho fondu a zúčastnilo sa ho 74 vedeckých a odborných pracovníkov z 13 krajín - Austrálie, Českej republiky, Kanady, Švédska, Francúzska, Poľska, Maďarska, Ruska, Rakúska, Nemecka, Japonska, USA a Slovenska. Hlavnou témou konferencie bola problematika chémie, biochémie, biológie, biotechnológie ako aj medicínskych a enviromentálnych aplikácii mono-, oligo-, polysacharidov a glykokonjugátov. Najnovšie trendy z týchto oblastí výskumu boli prezentované formou plenárnych (10) a pozvaných (9) prednášok, krátkych orálnych prezentácií (17) a posterov (25). Viac ako 1/3 účastníkov sympózia tvorili doktorandi a mladí tvoriví pracovníci. Vedecký i spoločenský program sympózia splnil očakávania účastníkov a nepochybne prispel k posilneniu existujúcich kontaktov, ale aj k nadviazaniu nových spoluprác, ktoré sú nutné predovšetkým v zapájaní sa do medzinárodných projektov, financovaných Európskou komisiou pre vedu a výskum.

Počet účastníkov: 74, z toho 35 zahraničných.

COST 868 Workshop „Biotechnical functionalization of renewable polymeric materials“, Bratislava, April 17-18, 2008
(COST 868 Workshop „Biotechnická funkcionalizácia obnoviteľných polymérnych materiálov“, Bratislava, 17.-18. apríl 2008)

Tématicky bolo podujatie zamerané predovšetkým na vývoj a aplikácie nových materiálov na báze prírodných materiálov využitím enzýmov.

Počet účastníkov: 69 (z 21 krajín), z toho 48 zahraničných.

COST 859 Workshop „Phytotechnologies to promote sustainable land use and improve food safety. Contaminants and nutrients: availability, accumulation/exclusion and plant-microbia-soil interactions“, Smolenice, May 21-25, 2008
(COST 859 Workshop „Fytotechnológie na podporu udržateľného využitia krajiny a zvýšenia bezpečnosti potravín“, Smolenice, 21.-25. máj, 2008)

Podujatie pozostávalo z konferencie, na ktorej odznelo 27 prednášok a bolo prezentovaných 26 posterov a z exkurzie do dvoch kontaminovaných lokalít na Slovensku - Banská Štiavnica a Špania dolina. Stručné zhodnotenie konferencie je zhrnuté v článku:

MARKERT, B. - LUX, A. - KIDD, P. - VERKLEIJ, J. - SCHWITZGUEBEL, J.P. EU COST 859 Workshop at Smolenice, Slovakia, 22–24 May 2008, Contaminants and Nutrients: availability, accumulation/exclusion and plant-microbial-soil interactions. In *INTECOL e-Bulletin*. Vol. 2, No. 3 (2008), p. 8-9. Available at http://www.intecol.net/info-esk/e-bulletin/INTECOL_e-Bulletin-Aug_2008.pdf

Počet účastníkov: 80, z toho 51 zahraničných.

6. Medzinárodné vedecké podujatia, ktoré usporiada ústav v r. 2009

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

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

Ing. Emília Breierová, PhD., 02/59410241, chememi@savba.sk

7. Počet pracovníkov v programových a organizačných výboroch medzinárodných konferencií

36th Annual Conference on Yeasts (36. Výročná konferencia o kvasinkách), Smolenice, May 14-16, 2008

4 (Farkaš, Breierová, Kolarova, Guthová)

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

5 (Farkaš, Breierová, Kolarova, Paulovičová, Guthová)

4th Central European Conference - Chemistry towards Biology (CTB-2008), Dobogókő, Hungary, September 8-11, 2008

1 (Petruš)

11th Bratislava Symposium on Saccharides (11. Bratislavské sympóziu o sacharidoch), Smolenice, September 21-26, 2008

6 (Hirsch, Tvaroška, Kolarova, Gajdoš, Farkaš, Mastihuba)

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

1 (Tvaroška)

International Conference Glyco XXI, Vienna, 2011

1 (Tvaroška)

COST 859 Workshop „Phytotechnologies to promote sustainable land use and improve food safety. Contaminants and nutrients: availability, accumulation/exclusion and plant-microbia-soil interactions“, Smolenice, May 21-25, 2008

2 (Lišková, Lux)

COST 868 Workshop „Biotechnical functionalization of renewable polymeric materials“, Bratislava, April 17-18, 2008

3 (Biely, Vršanská, Puchart)

8. Účasť expertov na hodnotení projektov RP, ESF a iných

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

- experti 6. Rámcového programu EÚ

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

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

Ing. Igor Tvaroška, DrSc.

- predseda oponentnej rady projektu LC06030 „Biomolekulární centrum“, riešeného v rámci programu Centra základného výskumu (MŠMT). Do tejto funkcie bol Dr. Tvaroška zvolený na korešpondenčnom jednaní Rady Biomolekulárneho centra v dňoch 25.-30.11.2008 v Brne.

9. Medzinárodné ocenenia a iné informácie k medzinárodnej vedeckej spolupráci

Pozvania do komisií pre obhajoby dizertačných prác na zahraničných univerzitách

RNDr. Peter Biely, DrSc.

- člen komisie pre obhajobu dizertačnej práce (Tribunal to judge the PhD thesis)
„Characterization of cellulose degrading fungal strains. Study of β -glucanase Cel12A from *Stachybotrys atra*“, ktorú predložil Pere Picart z Faculty of Biology, University of Barcelona, Spain, 28 November 2008.

Doc. Ing. Vladimír Farkaš, DrSc.

- medzinárodný poradca (advisor) doktorandskej dizertačnej práce Mgr. Marie Lopez (školiteľ Dr. Hugues Driguez) z CERMAV-CNRS, Grenoble, Francúzsko.
- oponentúra doktorandskej dizertačnej práce Mgr. Naomi X. Z. Ling (školiteľ Anthony Bacic) zo School of Botany, University of Melbourne, Australia.
- oponentúra doktorandskej dizertačnej práce Mgr. Wioleta Górka-Nieč (školiteľ prof. Grazyna Palamarczyk), Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warszawa, Poľsko.

Prehľad údajov o medzinárodnej vedeckej spolupráci je uvedený v Prílohe č. 5.

V. 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 pribudla ešte významná účasť na nových výzvach OP ŠF 2.1. a 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. 6. 2004) k Zriaďovacej listine s účinnosťou od 1. 4. 2004, Pracovný poriadok, Organizačný poriadok, Platový poriadok, Bezpečnostné predpisy, Traumatologický plán, Pokyny pre kontrolnú činnosť, Dohoda medzi ústavmi SAV sídlacimi 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 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 25 doktorandov, pričom každoročne sa vypisuje konkurzné konanie na ca 4 nové miesta interného doktorandského štúdia. Po úspešnej obhajobe doktorandských dizertačných prác sa mladí vedecí 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. O doktorandské štúdium resp. postdoktorandský pobyt na CHÚ SAV je prejavovaný čoraz väčší záujem aj zo zahraničia (v roku 2008 to boli 5 doktorandi a 1 postdoktorand). 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, ...).

VI. Spolupráca s VŠ, univerzitami a inými subjektmi v oblasti vedy a techniky v SR

1. Prehľad spolupracujúcich vysokých škôl (fakúlt) a výsledkov spolupráce

Slovenská technická univerzita, Bratislava

Fakulta chemickej a potravinárskej technológie

Ústav chemického a environmentálneho inžinierstva

Oddelenie chemického a biochemického inžinierstva

Spoluúčasť na riešení projektu APVV-51-033205. Vývoj matematického modelu Baeyer-Villigerovej oxidácie katalyzovanej enkapsulovanými bunkami *E. coli*.

Ústav biotechnológie a potravinárstva

Oddelenie biochemickej technológie

Biotechnologické aplikácie nadprodukcie karotenoidných pigmentov, sorbcia ťažkých kovov exopolysacharidmi, bunkovými lipidmi a fosfolipidmi buniek červených kvasiniek.

3 publikácie, 1 kapitola v knihe v tlači, 1 publikácia v tlači, 2 prednášky, 1 poster

Spoluúčasť na riešení projektu VEGA 1/4452/07. Testovanie enkapsulácie glukóza oxidázy, enkapsulácie *E. coli* a testovanie kapsúl ako biokatalyzátora Baeyer-Villigerovej oxidácie v laboratórnom fermentore; enkapsulácia buniek *G. oxydans* a ich testovanie pre oxidáciu D-sorbitolu a príprava biosenzora pre monitorovanie D-sorbitolu.

1 publikácia, 1 prednáška, 1 poster

Ústav biotechnológie a potravinárstva

Oddelenie potravinárskej technológie

Štúdium biodegradabilných polymérov na báze sacharidov a prírodných fenolických látok.

1 poster

Vývoj metód riadenia kvality potravín a výrobkov pre ochranu zdravia.

1 poster

Konzultačná činnosť pri štúdiu enzýmových transglykozylačných reakcií.

Ústav biochémie, výživy a ochrany zdravia

Oddelenie výživy a hodnotenia potravín

Štúdium ovplyvnenia DNA cyklu mutagénnymi látkami.
1 publikácia

Ústav organickej chémie, katalýzy a petrochémie

Oddelenie organickej chémie

Syntéza sacharidových aldehydov - reaktantov pre prípravu chirálnych nitrónov.

2 publikácie, 1 prednáška, 1 publikácia odoslaná do tlače

Stanovenie elementárneho zloženia (CHN) vzoriek.

Finančný prínos: 500 Sk

Ústav fyzikálnej chémie a chemickej fyziky

Oddelenie fyzikálnej chémie

Spoluúčasť na riešení projektu centier excelencie SAV „Centrum pokročilej výpočtovej chémie“ (COMCHEM).

Ústav analytickej chémie

Oddelenie NMR a hmotnostnej spektrometrie

Spoluúčasť na riešení projektu ŠPVV „Národné centrum NMR spektroskopie“.

Univerzita Komenského, Bratislava

Prírodovedecká fakulta

Katedra fyziológie rastlín

Spoluúčasť na riešení projektov COST Action 859, APVV-COST-0004-06, VEGA 2/7048/27 a VEGA 1/4354/07. Štúdium využitia rastlín pre dekontamináciu životného prostredia od toxických kovov a obohatenie poľnohospodárskych rastlín o dôležité minerálne látky a štúdium biologickej aktivity galaktoglukománových oligosacharidov vo vývinových procesoch a obrane rastlín.

1 publikácia, 1 publikácia prijatá do tlače, 2 publikácie v recenznom konaní, 9 postrov

Stanovenie elementárneho zloženia (CHN) vzoriek.

Finančný prínos: 23 500 Sk

Katedra genetiky

Antioxidačné vlastnosti stenových polysacharidov kvasiniek a ich využitie ako možné protinádorové liečivá.

1 publikácia

Katedra mikrobiológie a virológie

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

2 publikácie, 1 poster, spoluúčasť na riešení projektu VEGA 1/4324/07

Katedra fyzikálnej a teoretickej chémie

Spoluúčasť na riešení projektu centier excelencie SAV „Centrum pokročilej výpočtovej chémie“ (COMCHEM).

Katedra organickej chémie

Syntéza a biologická evaluácia niektorých modelových zlúčenín s potenciálnou antimykobakteriálnou aktivitou. Spoluúčasť na riešení projektu APVV-51-046505.

Katedra biochémie

Syntéza a biologická evaluácia niektorých modelových zlúčenín s potenciálnou antimykobakteriálnou aktivitou. Spoluúčasť na riešení projektu APVV-51-046505.

1 poster

Kvasinkové spoločenstvo osídľujúce bryndzu.

1 publikácia

Katedra pedológie

Meranie a interpretácia IČ spektier.

Finančný prínos: 3 600 Sk; 1 publikácia

Ústav bunkovej biológie

Príprava lipopolysacharidov z rôznych kmeňov *Vibrio cholerae*. Znovu hroziace patogény – vibriá. Štúdium virulencie a možnej aktívnej imunomodulačnej ochrany.

Spoluúčasť na riešení projektu APVV-51-003206.

Farmaceutická fakulta

Katedra farmakognózie a botaniky

Príprava a kultivácia rastlinných kultúr *in vitro* pre produkciu, resp. elicitáciu sekundárnych látok so zaujímavými vlastnosťami pre farmáciu a medicínu.

1 práca v recenznom konaní, 1 poster

Katedra farmaceutickej analýzy a nukleárnej farmácie

Konštrukcia biosenzorov pre prietokovú injekčnú analýzu. Spoluúčasť na riešení projektu VEGA 1/4452/07.

1 publikácia, 2 postre

Fakulta matematiky, fyziky a informatiky

Katedra jadrovej fyziky a biofyziky

Oddelenie chemickej fyziky

Spoluúčasť na riešení projektu centier excelencie SAV „Centrum pokročilej výpočtovej chémie“ (COMCHEM).

Oddelenie biofyziky

Antioxidačné vlastnosti stenových polysacharidov kvasiniek a ich využitie ako možné protinádorové liečivá.

1 publikácia

Lekárska fakulta

Imunologický ústav

Spolupráca pri serodiagnostike zápalových markerov vo vzťahu ku koronárnym ochoreniam.

1 prednáška

Fakultná nemocnica - pracovisko Staré Mesto

Oddelenie klinickej imunológie a alergológie

Diferenciálna diagnostika vaginálnych kandidóz - detekcia sérových antikandidových izotypových protilátok.

Vedenie diplomovej práce

Detská fakultná nemocnica s poliklinikou Bratislava - pracovisko Kramáre

II. Detská klinika, Endokrinologicko-metabolická ambulancia

Spolupráca pri diagnostike Fabryho choroby a syndrómu hyper-IgD - stanovenie sérových hladín IgD.

2 prednášky, spoluúčasť na riešení projektu VEGA 1/4314/07

Onkologický ústav sv. Alžbety, s.r.o., Bratislava

Ústav laboratórnych a vyšetrovacích metód LF UK a OÚSA

Oddelenie klinickej imunológie

Diferenciálna diagnostika respiračných kandidóz - detekcia sérových antikandidových izotypových protilátok.

Vedenie diplomovej práce

Jesséniova lekárska fakulta, Martin

Ústav farmakológie

Spolupráca na riešení projektov VEGA 2/6131/26 a APVV-0030-08. Štúdium vzťahu chemickej štruktúry a antitusického účinku rastlinných substancií, ktoré predstavujú potenciálne pomocné prípravky vo fytoterapii kašľa.

1 poster

Univerzita P. J. Šafárika, Košice

Prírodovedecká fakulta

Katedra organickej chémie

Spoluúčasť na riešení projektu ŠPVV „Národné centrum NMR spektroskopie“.

Merania a interpretácia hmotnostných MALDI-TOF spektier.

2 postre

Lekárska fakulta

Ústav patologickej fyziológie

Spolupráca v oblasti merania antioxidačného stresu v leukocytoch atopických pacientov.

1 prednáška

Trenčianska univerzita Alexandra Dubčeka, Trenčín

Fakulta priemyselných technológií, Púchov

Katedra chémie a technológie polymérnych materiálov a textilu

Spoluúčasť na riešení projektov VEGA 2/6131/26 a APVT-20-017304. Príprava parciálne hydrofobizovaných derivátov komerčných a nekomerčných polysacharidov.

3 publikácie, 2 zborníkové práce, 13 postrov, spoločný VEGA projekt na roky 2009-2012

Technická univerzita vo Zvolene

Drevárska fakulta

Katedra chémie a chemickej technológie

Charakterizácia extraktívnych látok v biologicky poškodenom bukovom dreve.

1 publikácia

Technická univerzita v Košiciach

Fakulta elektrotechniky a informatiky

Spoluúčasť na riešení projektu ŠPVV „Národné centrum NMR spektroskopie“.

Slovenská zdravotnícká univerzita, Bratislava

Vedeckovýskumná základňa SZU

Oddelenie mikrobiológie

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

Spoluúčasť na riešení projektu APVV-51-003206.

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.

Vedenie 1 diplomovej práce, preddiplomová prax

2. Významné aplikácie výsledkov výskumu v spoločenskej praxi

3. Úplný prehľad vyriešených problémov pre mimoakademické organizácie, s uvedením finančného efektu

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

Stanovenie elementárneho zloženia (CHN) vzoriek.

Finančný prínos: 10 000 Sk

HighChem, Ltd., Bratislava

Testovanie softvéru Mass Frontier 4.0 k interpretácii fragmentácie organických zlúčenín.

4. Spoločné pracoviská s VŠ a univerzitami

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 Ústavu 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 bude podieľať na zakúpení prístroja dohodnutým finančným príspevkom. Chemický ústav sa podieľal na výstupoch združeného pracoviska 9 pôvodnými vedeckými prácami a 5 príspevkami na medzinárodných 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 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 biomolekulárne štúdiá*, ktoré by malo byť v roku 2009 vybavené 600 MHz a 400 MHz NMR spektrometrami.

VII. Spolupráca s aplikačnou a hospodárskou sférou

1. Spoločné pracoviská s aplikačnou sférou

Chemický ústav SAV, Ústav molekulárnej fyziológie a genetiky SAV, Virologický ústav SAV a spoločnosť Chémia-Servis, spol. s r.o., Bratislava sú od roku 1998 zriaďovateľmi a prevádzkovateľmi spoločného pracoviska MALDI-TOF hmotnostnej spektrometrie. Hmotnostný spektrometer je inštalovaný v priestoroch CHÚ SAV a slúži k vedeckej a pedagogickej činnosti zúčastnených inštitúcií i vysokých škôl.

2. Spoločné multilaterálne alebo bilaterálne projekty s účasťou organizácií aplikač. sféry

Názov projektu: Elektrochemické biosenzory na báze nanobiokompozitov pre rýchlu a efektívnu analýzu technologicky a zdravotne významných zložiek potravín a nápojov
(Nanocomposite-based electrochemical biosensors for fast and effective analysis of technologically and medically important components of foods and beverages)
Číslo projektu: VMSP-P-0052-07
Partner: Biorealis, spol. s r.o., Bratislava
Doba riešenia: 01/2008-12/2009
Zameranie: Výskum a aplikácie elektrochemických biosenzorov

3. Kontraktový – zmluvný výskum (vrátane zahraničných kontraktov)

Názov kontraktu: Analýza biopolymérov z detergentov (Analysis of biopolymers from detergents)
Zodp. riešiteľ z CHÚ: Mgr. Peter Capek, PhD.
Spolupracujúca firma: Procter & Gamble Ltd, Newcastle upon Tyne, UK
Objem získaných prostriedkov v roku 2008: 223 930 Sk
Celková dĺžka kontraktu: 03/2008-08/2008

Názov kontraktu: Biologicky aktívne fungálne polysacharidy a výber kvasiniek vhodných pre komerčné využitie

Zodp. riešiteľ z CHÚ: Ing. Grigorij Kogan, DrSc.

Spolupracujúca firma: Alltech, Inc., Nicholasville, KY, USA

Objem získaných prostriedkov v roku 2008: 28 258 Sk

Celková dĺžka kontraktu: 01/2006-12/2008

Názov kontraktu: Roasted coffee arabinogalactan structural study

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

Spolupracujúca firma: ILLYCAFFE S.p.A., Trieste, Taliansko

Objem získaných prostriedkov v roku 2008: 232 442 Sk (7 000 EUR) (vyúčtované v r. 2007)

Celková dĺžka kontraktu: 11/2007-07/2008

4. Krátkodobé spolupráce s finančným efektom, celková suma prostriedkov, ktoré v danom roku prišli na účet organizácie, zoznam spolupracujúcich firiem, zameranie spolupráce

Monoprix, spol. s r.o., Bratislava

Návrh enzýmovej esterifikácie trans-2-hexenolu.

Finančný prínos: 30 000 Sk

5. Vývoj nových produktov a technológií

Azoter, spol. s r.o., Nové Zámky

Vývoj biopesticídov na báze huby *Trichoderma*. Odborná garancia a príprava produkčných kmeňov.

6. Iná činnosť potenciálne využiteľná pre potreby praxe (biomedicínsky, farmaceutický výskum, výskum ekologického charakteru, činnosť s nepriamymi hospodárskymi prínosmi)

Biogema, v.d., Košice

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

Slovenské centrum poľnohospodárskeho výskumu, Výskumný ústav rastlinnej výroby, Piešťany, Ústav vinohradníctva a vinárstva, Bratislava

Enologické vlastnosti ne-saccharomycetových kvasiniek asociovaných s vinárskou výrobou. 3 publikácie, 1, prednáška, 2 postre

Biotika, a.s., Slovenská Ľupča

Zmluva o vedecko-technickej spolupráci – súhlas k používaniu priemyselných kmeňov *Escherichia coli* a *Trigonopsis variabilis* na riešenie projektov APVV a VEGA.

Vypracovávanie metódy odstránenia glukózy z nízkomolekulového dextransu použitím biotransformácie s imobilizovaným enzýmom. Stanovenie elementárneho zloženia vzoriek.

Finančný prínos: 7 500 Sk

CMS Chemicals, spol. s r.o., Bratislava

Meranie a interpretácia IČ a NMR spektier, CHN a organická analýza vzoriek.

Finančný prínos: 27 700 Sk

Anand Chem, spol. s r.o., Piešťany

Stanovenia elementárneho zloženia (CHN) vzoriek.

Finančný prínos: 2 000 Sk

Medzinárodné laserové centrum, Bratislava

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

7. Najdôležitejšie výsledky spolupráce s aplikačnou sférou

V rámci vývoja technologického postupu výroby preparátov pre biologickú ochranu rastlín na báze huby *Trichoderma* prebiehajú v spolupráci s firmou Azoter, spol. s r.o., Nové Zámky vo fermentačnom závode v Petrovej Vsi overovacie skúšky technológie prípravy spór huby *Trichoderma* polosuchou fermentáciou. Doterajšie výsledky sú sľubné a v budúcom roku firma Azoter, spol. s r.o. plánuje prejsť na ich komerčnú výrobu.

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

1. *Prehľad aktuálnych spoločenských problémov, ktoré riešilo pracovisko v spolupráci s Kanceláriou prezidenta SR, vládnyimi a parlamentnými orgánmi alebo pre ich potrebu*

2. *Členstvo v poradných zboroch vlády SR, Národnej rady SR, ministerstiev a podobne*

3. *Expertízna činnosť a iné služby pre štátnu správu a samosprávu*

Ing. Slavomír Bystrický, DrSc.

Ing. Peter Gemeiner, DrSc.

RNDr. Mária Matulová, PhD.

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

4. *Členstvo v radách štátnych programov a podprogramov ŠPVV, ŠO, APVV a pod.*

Ing. Peter Gemeiner, DrSc.

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

IX. Vedecko-organizačné a popularizačné aktivity

1. Vedecko-popularizačná činnosť (počet knižných publikácií, prednášok, príspevkov v tlači, rozhlase, televízii a pod.)

Prednášky: 2
Príspevky v tlači: 6/1

(podrobnejšie údaje sú uvedené v Prílohe č. 6)

2. Usporiadanie vedeckých podujatí (vrátane kurzov a škôl), s uvedením názvu podujatia, dátumu a miesta konania a počtu účastníkov

a) zahraničné

36th Annual Conference on Yeasts, Smolenice, May 14-16, 2008
(36. Výročná konferencia o kvasinkách, Smolenice, 14.-16. máj 2008)

Vedecký program konferencie bol rozdelený do troch sekcií: 1. biotechnológia a biokatalýza; 2. genetika a molekulárna biológia kvasiniek; 3. bunková biológia a biochémia kvasiniek. Úvodná plenárna prednáška, ktorú predniesol prof. W. Tanner z Institute of Cell Biology and Plant Physiology, University of Regensburg, Germany, bola tradične venovaná pamiatke zakladateľky Komisie pre kvasinky Dr. A. Kockovej-Kratochvílovej. Vďaka sponzorskej podpore a občianskemu združeniu NATURA odznali ďalšie prednášky renomovaných vedcov ako prof. S. Shimizu (Graduate School of Agriculture, Kyoto University, Japan), prof. G.G. Haraldsson (Science Institute, University of Iceland, Reykjavik), prof. A. Rapoport (University of Latvia, Riga, Latvia), Dr. A. Gacser (University of Szeged, Szeged, Hungary), Dr. T. Ferreira (Université de Poitiers, France) a Dr. F. Madeo (University of Graz, Austria). Celkovo odznalo 24 prednášok a prezentovaných bolo 44 plagátových vývesiek. Na tejto konferencii sa stretli pracovníci z VŠ, SAV a z priemyslu. Čoraz viac o ňu prejavujú záujem vedeckí pracovníci zo všetkých krajín V4 ale aj ostatných krajín.

Počet účastníkov: 87, z toho 43 zahraničných.

11th Bratislava Symposium on Saccharides, Smolenice, September 21-26, 2008
(11. Bratislavské sympóziu o sacharidoch, Smolenice, 21.-26. september 2008)

Sympóziu organizoval Chemický ústav SAV v spolupráci so združením Slovcarb, Slovenskou chemickou spoločnosťou, Slovenskou spoločnosťou pre biochémiu a molekulárnu biológiu, za podpory Európskeho sociálneho fondu a zúčastnilo sa ho 74 vedeckých a odborných pracovníkov z 13 krajín - Austrálie, Českej republiky, Kanady, Švédska, Francúzska, Poľska, Maďarska, Ruska, Rakúska, Nemecka, Japonska, USA a Slovenska. Hlavnou témou konferencie bola problematika chémie, biochémie, biológie, biotechnológie ako aj medicínskych a enviromentálnych aplikácii mono-, oligo-, polysacharidov a glykokonjugátov. Najnovšie trendy z týchto oblastí výskumu boli prezentované formou plenárnych (10) a pozvaných (9) prednášok, krátkych orálnych prezentácií (17) a posterov (25). Viac ako 1/3 účastníkov sympózia tvorili doktorandi a mladí tvoriví pracovníci. Vedecký i spoločenský program sympózia splnil očakávania účastníkov a nepochybne prispel k posilneniu existujúcich kontaktov, ale aj k nadviazaniu nových

spolupráce, ktoré sú nutné predovšetkým v zapájaní sa do medzinárodných projektov, financovaných Európskou komisiou pre vedu a výskum.

Počet účastníkov: 74, z toho 35 zahraničných.

COST 868 Workshop „Biotechnical functionalisation of renewable polymeric materials“, Bratislava, April 17-18, 2008

(COST 868 Workshop „Biotecnická funkcionálna obnoviteľných polymérnych materiálov“, Bratislava, 17.-18. apríl 2008)

Tematicky bolo podujatie zamerané predovšetkým na vývoj a aplikácie nových materiálov na báze prírodných materiálov využitím enzýmov.

Počet účastníkov: 69 (z 21 krajín), z toho 48 zahraničných.

COST 859 Workshop „Phytotechnologies to promote sustainable land use and improve food safety. Contaminants and nutrients: availability, accumulation/exclusion and plant-microbia-soil interactions“, Smolenice, May 21-25, 2008

(COST 859 Workshop „Fytotechnológie na podporu udržateľného využitia krajiny a zvýšenia bezpečnosti potravín“, Smolenice, 21.-25. máj, 2008)

Podujatie pozostávalo z konferencie, na ktorej odznelo 27 prednášok a bolo prezentovaných 26 posterov a z exkurzie do dvoch kontaminovaných lokalít na Slovensku - Banská Štiavnica a Špania dolina. Stručné zhodnotenie konferencie je zhrnuté v článku:

MARKERT, B. - LUX, A. - KIDD, P. - VERKLEIJ, J. - SCHWITZGUEBEL, J.P. EU COST 859 Workshop at Smolenice, Slovakia, 22–24 May 2008, Contaminants and Nutrients: availability, accumulation/exclusion and plant-microbial-soil interactions. In *INTECOL e-Bulletin*. Vol. 2, No. 3 (2008), p. 8-9. Available at http://www.intecol.net/info-esk/e-bulletin/INTECOL_e-Bulletin-Aug_2008.pdf

Počet účastníkov: 80, z toho 51 zahraničných.

b) domáce

3. Medzinárodné vedecké podujatia, ktoré usporiada ústav v r. 2009

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

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

Ing. Emília Breierová, PhD., 02/59410241, chememi@savba.sk

4. Účasť na výstavách a jej zhodnotenie

35. medzinárodný poľnohospodársky a potravinársky veľtrh AGROKOMPLEX 2008, 21.-25. august 2008, 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.

2. ročník medzinárodného priemyselného veľtrhu nových technológií a inovácií v strojárstve, elektrotechnike, energetike, chemickom a plynárenskom priemysle, biotechnológiách, energetickej a surovinovej sebestačnosti INDUXTRY EXPO Bratislava 2008, 20.- 22. február 2008, Bratislava

Na tomto podujatí bola Chemickému ústavu SAV udelená generálnym riaditeľom INCHEBA EXPO Bratislava Cena GRAND PRIX INDUSTRY EXPO Bratislava 2008 za exponát "D-Tagatóza".

5. Členstvo v organizačných výboroch domácich vedeckých podujatí, s uvedením názvu podujatia, dátumu a miesta konania

Ing. Ján Hirsch, DrSc. - člen programového výboru

Doc. Ing. Ladislav Petruš, DrSc. - člen programového výboru

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

6. Domáce vyznamenania a ceny za vedeckú a inú činnosť a iné dôležité informácie k vedecko-organizačným a popularizačným aktivitám

RNDr. Peter Biely, DrSc.

- *Cena Jozefa Ludovíta Holubyho za vedy o živej prírode ex aequo*

udelená Nadáciou Matice slovenskej za rok 2007

- *Prémia Literárneho fondu za trojročný vedecký ohlas za rok 2008*: II. miesto v kategórii prírodné a lekárske vedy

- *Prémia Literárneho fondu za výnimočný vedecký ohlas na jedno dielo 2008*: II. miesto v kategórii prírodné a lekárske vedy

Ing. Marek Bučko, PhD.

- *Čestné uznanie v súťaži mladých vedeckých pracovníkov SAV do 35 rokov* - II. oddelenie vied SAV.

Chemický ústav SAV

- *Cena GRAND PRIX INDUSTRY EXPO Bratislava 2008*

udelená generálnym riaditeľom INCHEBA EXPO Bratislava za exponát "D-Tagatóza" na 2. ročníku medzinárodného priemyselného veľtrhu nových technológií a inovácií v strojárstve, elektrotechnike, energetike, chemickom a plynárenskom priemysle, biotechnológiách, energetickej a surovinovej sebestačnosti, 20.-22. februára 2008, Incheba Expo, Bratislava.

7. Členstvo v redakčných radách domácich časopisov

Ing. Pavol Farkaš, PhD.

- Chemical Papers (technical editor)

Ing. Peter Gemeiner, DrSc.

- Chemical Papers

Ing. Ján Hirsch, DrSc.	- Chemical Papers (editorial manager)
Ing. Miroslav Kooš, DrSc.	- Chemical Papers (technical editor)
Prof. Ing. Božena Košíková, DrSc.	- Wood Research
Doc. Ing. Ladislav Petruš, DrSc.	- Chemical Papers
Ing. Igor Tvaroška, DrSc.	- Chemical Papers

8. Činnosť v domácich, resp. česko-slovenských 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
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
Ing. Vladimír Kováčik, DrSc.	- predseda Slovenskej spoločnosti hmotnostnej spektrometrie
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.	- člen výboru Slovenskej spoločnosti hmotnostnej spektrometrie
Doc. Ing. Ladislav Petruš, DrSc.	- podpredseda Odbornej skupiny Organická chémia pri Slovenskej chemickej spoločnosti - predseda revíznej komisie Slovenskej chemickej spoločnosti
Ing. Igor Tvaroška, DrSc.	- člen Učenej spoločnosti SAV

X. Činnosť knižnično-informačného pracoviska

Tabuľka X.1. Knižničný fond

Knižničné jednotky spolu		25308
z toho	knihy a zviazané periodiká	25308
	audiovizuálne dokumenty	0
	elektronické dokumenty (vrátane digitálnych)	0
	mikroformy	0
	iné špeciálne dokumenty - dizertácie, výskumné správy	0
Počet titulov dochádzajúcich periodík		13
z toho zahraničné periodiká		12
Ročný prírastok knižničných jednotiek		70
v tom	kúpou	70
	darom	0
	výmenou	0
	bezodplatným prevodom	0
Úbytky knižničných jednotiek		0
Knižničné jednotky spracované automatizovane		12

Tabuľka X.2. Výpožičky a služby

Výpožičky spolu		156
z toho	odborná literatúra pre dospelých	28
	výpožičky periodík	128
	prezenčné výpožičky	137
MVS iným knižniciam		16
MVS z iných knižníc		4
MMVS iným knižniciam		0
MMVS z iných knižníc		5
Počet vypracovaných bibliografií		0
Počet vypracovaných rešerší		0

Tabuľka X.3. Používatelia

Registrovaní používatelia	0
Návštevníci knižnice spolu (bez návštevníkov podujatí)	95

Tabuľka X.4. Iné údaje

On-line katalóg knižnice na internete (kódy: 1 = áno, 0 = nie)	1
Náklady na nákup knižničného fondu v tisícoch Sk	291

Iné informácie o knižničnej činnosti (v prípade potreby ako voľný text).

XI. Aktivity v orgánoch SAV

1. Členstvo vo výbore Snemu SAV

2. Členstvo v komisiách SAV

Ing. Ján Hirsch, DrSc.

- člen Rady programu centier excelentnosti SAV

Ing. Miroslav Kooš, DrSc.

- člen Komisie SAV pre duševné vlastníctvo

- člen Knižničnej rady SAV

Ing. Peter Magdolen

- člen Komisie SAV pre propagáciu a médiá

- člen Komisie SAV pre drahú prístrojovú techniku

Ing. Igor Tvaroška, DrSc.

- člen Kontrolnej rady SAV pre činnosť SÚZ SAV

- člen Správnej rady Technologického inštitútu SAV

Doc. Ing. Vladimír Farkaš, DrSc.

- člen komisie pre FM EHP (Blokový grant)

3. 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

4. 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

XII. Hospodárenie organizácie

Rozpočtové organizácie SAV

Tabuľka XI.1. Výdavky RO SAV (v tis. Sk)

Kategória	Posledný upravený rozpočet r. 2008	Čerpanie k 31.12.2008 celkom	z toho:	
			z rozpočtu	z mimorozp. zdrojov
Výdavky celkom	66 134	91 377	66 134	25 244
z toho:				
- kapitálové výdavky	1 710	2 848	1 710	1 139
- bežné výdavky	64 424	88 529	64 424	24 105
z toho:				
- mzdové výdavky	33 193	36 578	33 193	3 385
- odvody do poisťovní a NÚP	11 397	12 421	11 397	1 024
- tovary a ďalšie služby	17 378	37 075	17 378	19 697
z toho:				
- výdavky na projekty (VEGA, APVV, ŠPVV, MVTP, ESF, iné)	6 415	25 181	6 415	18 766
- výdavky na periodickú tlač	56	213	56	157
- transfery na vedeckú výchovu	2 607	2 607	2 607	–
- suma odvedená pre spoluriešiteľ. organizácie na hradenie nákladov spoločných projektov	–	4 175	–	4 175

Tabuľka XI.2. Príjmy RO SAV (v tis. Sk)

Kategória	Posledný upravený rozpočet r. 2008	Plnenie k 31.12.2008
Príjmy celkom	29 204	29 144
z toho:		
rozpočtované príjmy (účet 19)	7 614	7 557
z toho:		
- príjmy za nájomné	444	444
mimorozpočtové príjmy (účet 780)	21 590	21 590

XIII. Nadácie a fondy pri pracovisku

Chemický ústav SAV nespravoval v roku 2008 žiadnu nadáciu ani fondy.

XIV. Iné významné činnosti pracoviska

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 2008: 63 (27 pre CHÚ, 4 pre iné pracoviská v SR a 32 pre zahraničie). Získané kultúry v roku 2008: 35 (32 samostatne izolovaných a 3 získaných zo zahraničia). Príjem za honorované služby (predané kultúry, identifikované kmene, úschova a rekultivácia kmeňov) predstavoval 14 200 Sk a úspora predstavovala 49 600 Sk (21 600 Sk za kmene pre CHÚ a 28 000 Sk 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 2008 ca 6.982 mil. Sk.

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 54 774 Sk (zatiaľ nezaplatené faktúry predstavujú 27 700 Sk).

XV. Vyznamenania, ocenenia a ceny udelené pracovníkom organizácie v roku 2008 (mimo SAV)

RNDr. Peter Biely, DrSc.

- *Cena Jozefa Ludovíta Holubyho za vedy o živej prírode ex aequo*

udelená Nadáciou Matice slovenskej za rok 2007 (odovzdávaná 13.3.2008)

- *Prémia Literárneho fondu za trojročný vedecký ohlas za rok 2008*: II. miesto v kategórii prírodné a lekárske vedy (odovzdávaná 25.9.2008)

- *Prémia Literárneho fondu za výnimočný vedecký ohlas na jedno dielo 2008*: II. miesto v kategórii prírodné a lekárske vedy (odovzdávaná 25.9.2008)

XVI. Poskytovanie informácií v súlade so zákonom č. 211/2000 Z.z. o slobodnom prístupe k informáciám v znení neskorších predpisov

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.

XVII. Problémy pracoviska a podnety pre činnosť SAV

a) Účelové finančné prostriedky na rekonštrukciu budovy v správcovstve CHÚ SAV

V roku 2008 pokračoval CHÚ SAV, ako správca budovy, v ktorej sídli 6 ústavov SAV, v postupnej rekonštrukcii budovy v areáli SAV na Patrónke. Dokončená bola úprava vstupnej haly a vrátnice ako aj vstup do budovy (schody a podesta). Zrealizované bolo aj čipové zabezpečenie výťahu pre Ústav experimentálnej farmakológie (blok C) a montáž vodomeroch a guľových ventilov. Z Fondu opráv nehnuteľností boli na rok 2008 schválené a pridelené finančné prostriedky len vo výške 290 tisíc Sk, zvyšok zabezpečili ústavy sídliaace v budove z vlastných zdrojov.

Vo vstupnej hale budovy bol inštalovaný reliéf prof. D. Ilkoviča - významného vedca a pedagóga, zakladateľa slovenskej fyziky, Fyzikálneho ústavu SAV a jeho prvého riaditeľa, pri príležitosti 100. výročia jeho narodenia. Slávnostné odhalenie reliéfu bolo 7. januára 2008 za prítomnosti podpredsedu vlády SR D. Čaploviča, vedúceho kancelárie prezidenta SR M. Čiža, manželky prof. Ilkoviča Lenky Ilkovičovej, jeho dcéry Evy Potfajovej, predsedu SAV prof. Lubyho, členov P SAV a ďalších hostí.

b) Dobudovanie špičkového laboratória so zameraním na nukleárnu magnetickú rezonanciu

Chemický ústav SAV sa 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“. Na základe výsledku obchodnej verejnej súťaže (S00064 – Obchodný vestník č. 15/2003) bolo NMR laboratórium na FCHPT STU v Bratislave vybavené špičkovým 600 MHz spektrometrom pre aplikácie v chémii a biochémii v automatickej prevádzke. Toto laboratórium funguje ako sieť piatich spolupracujúcich, špecializovaných pracovísk NMR, pričom jedným z nich je aj Chemický ústav SAV, ktorý má možnosť využívať uvedený prístroj jeden deň v týždni. Analogickým spôsobom boli NMR prístrojmi (400 MHz) vybavené už pracoviská PriF UPJŠ v Košiciach a PriF UK v Bratislave.

V súvislosti s postupným dobudovaním NMR laboratória, na základe výberového konania sa uzavrela dohoda s firmou Varian o dodaní dvoch NMR prístrojov (400 MHz a 600 MHz). Prvý z nich (400 MHz) bol už dodaný na CHÚ SAV a do prevádzky bude uvedený vo februári 2009. Očakávame, že druhý prístroj (600 MHz), ktorý spĺňa náročné požiadavky kladené na moderné prístroje tohto druhu využívané v oblasti štúdia biologicky aktívnych látok, bude uvedený do prevádzky v prvom polroku 2009.

c) 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.

Taktiež upozorňujeme na časté zlyhávajúce Štátnej pokladnice ako aj ekonomického softvéru zavedeného do používania v rámci celej SAV, čo značne komplikuje činnosť pracoviska. V tejto súvislosti by bolo žiadúce doladiť program Softip pre potreby SAV, nakoľko jeho doterajšia verzia vyhovuje skôr potrebám veľkých podnikov a podnikateľskej sféry ale nie menším rozpočtovým organizáciám (väčšina pracovísk SAV).

Apelujeme na P SAV aby sa zasadilo o vypísanie všeobecnej výzvy APVV v roku 2009 a o zachovanie VEGA v súčasnej podobe.

d) Iné problémy pracoviska

Nedostatok kapitálových finančných prostriedkov neumožnil v roku 2008 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 havárijnom stave je najmä hmotnostný spektrometer (v súčasnosti nefunkčný) a plynová chromatografia. Zo združených prostriedkov Ústavu anorganickej chémie SAV (kapitálové prostriedky grantu APVV) a CHÚ SAV (498 363,- Sk) sa podarilo zakúpiť Spektrometer NICOLET FT-IR s príslušenstvom v hodnote 1.663 mil. Sk.

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

Vzhľadom k havárijnemu stavu vodoinštalácie 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:
Ekonomická časť:

Ing. Miroslav Kooš, DrSc.
Ing. Antónia Barliková

tel.: 59410254
tel.: 59410202

XVIII. Prílohy

Príloha č. 1

Menný zoznam pracovníkov k 31. 12. 2008

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
Kogan Grigorij, 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
Hricovíniová Zuzana, RNDr., PhD.	100	2000
Hromádková Zdena, Ing., PhD.	100	2000
Kákoniová Daniela, RNDr., CSc.	100	2000
Klaudiny Jaroslav, RNDr., PhD.	100	2000
Kolarova Nadežda, RNDr., CSc.	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
Pätoprstý Vladimír, Ing., PhD.	100	2000
Petrušová Mária, RNDr., 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.	80	1600

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
Gregorová Adriána, Ing., PhD.	100	2000
Kákošová Anna, RNDr., PhD.	100	2000
Katrlík Jaroslav, Ing., PhD.	100	2000
Kolenová Katarína, Ing., PhD.	100	2000
Kollárová Karin, RNDr., PhD.	100	500
Kóna Juraj, Mgr., PhD.	100	2000
Kozák Ján, RNDr., PhD.	100	2000
Kozmon Stanislav, Mgr., PhD.	100	2000
Lattová Erika, RNDr., PhD.	100	2000
Mališková Silvia, Ing., PhD.	100	2000
Mazán Marián, Ing., PhD.	100	2000
Mičová Júlia, Ing., PhD.	100	2000
Nemčovič Marek, Ing. PhD.	100	2000
Paulovičová Ema, Ing., CSc.	100	2000
Poláková Monika, Ing., PhD.	100	2000
Pribulová Božena, Ing., PhD.	100	2000
Spiwok Vojtech, Ing., PhD.	100	2000
Šesták Sergej, Ing., PhD.	100	2000
Tomčová Ivana, 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
Garajová Soňa, Ing.	100	2000
Hrabárová Eva, Ing.	100	2000
Košťálová Zuzana, Ing.	100	2000
Krupička Martin, Ing.	100	2000
Magdolen Peter, Ing.	100	2000
Medovarská Izabela, Ing.	100	2000
Nawara Agata Urszula, Mgr., Ing.	100	2000
Nawara Krysztóf Kamil, Mgr., Ing.	100	2000
Pajtinka Martin, Mgr.	100	2000
Podobová Ema, Ing.	100	
Riganová Eva, PhD.	100	
Ryabova Olena, Ing.	100	2000

Sasinková Vlasta, RNDr.	100	2000
Smrtičová Hana, Bc.	100	2000
Šefčovičová Jana, Mgr.	100	2000
Švec Jozef, Ing.	100	2000
Tonka Jozef, Ing.	100	2000
Turjan Jozef, Ing.	100	2000
Uhliariková Iveta, RNDr.	100	2000
Zelko Ivan, Mgr.	100	2000

Odborní pracovníci ÚSV

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

Doktorandi

Belák Miroslav, Ing.	100	2000
Halgašová Lenka, Mgr.	100	2000
Husárová Slavomíra, Mgr.	100	2000
Mészárosová Csilla, Ing.	100	2000

Neščáková Zuzana, Mgr.	100	2000
Paulovičová Lucia, Ing.	100	2000
Raab Michal, Mgr.	100	2000
Štrasserová Jana, Mgr.	100	2000
Vráblová Jana, Mgr.	100	2000

Ostatní

Chochlík Milan	100	
Csölleová Antónia	100	
Činovský Ivan	50	
Fischerová Ľudmila	100	2000
Pazderová Eva	100	
Petrášová Margita	100	
Pír Miroslav	100	
Schneiderová Zita	100	
Špetko František	100	2000
Vavro Ivan	100	
Voleková Veronika	100	

Príloha č. 2

Projekty riešené na pracovisku

- a) **Domáce projekty** (členenie podľa tabuľky v kapitole II.1.)
(**A** = CHÚ je nositeľom projektu, **B** = CHÚ sa zmluvne podieľa na riešení projektu)

1A. Vedecké projekty, ktoré boli v roku 2008 financované VEGA
(názov, vedúci, doba riešenia, evidenčné číslo VEGA, grant z VEGA)

Štúdium včelích antimikrobiálnych peptidov-defenzínov ako ochranných faktorov včiel a ich kolónií voči mikrobiálnym patogénom
(Study of honeybee antimicrobial peptides-defensins as protection factors of honeybees and their colonies against microbial pathogens)

RNDr. Jaroslav Klaudiny, PhD., 01/2006-12/2008, 2/6128/26, 107 000 Sk

Syntéza a biologická aktivita N-substituovaných iminoalditolov mono- a disacharidového typu ako potenciálnych terapeutík virálnych a iných chorôb
(Synthesis and biological activity of N-substituted iminoalditols of mono- and disaccharide types as potential therapeutics of viral and other diseases)

Doc. Ing. Ladislav Petruš, DrSc., 01/2006-12/2008, 2/6129/26, 570 000 Sk

Mikrobiálne glykozidhydrolázy a esterázy degradujúce bunkové steny rastlín
(Microbial glycoside hydrolases and esterases attacking plant cell walls)

RNDr. Peter Biely, DrSc., 01/2006-12/2008, 2/6130/26, 297 000 Sk

Rastlinné hydrokoloidy a ich deriváty – zdroj nových fytoproduktov
(Plant hydrocolloids and their derivatives – a source of new phytoproducts)

Ing. Zdenka Hromádková, PhD., 01/2006-12/2008, 2/6131/26, 151 000 Sk

Rozvíjanie metodík štruktúrálnej analýzy sacharidov a ich konjugátov
(The development of methodologies for structural analysis of saccharides and their conjugates)

Ing. Vladimír Pätoprstý, PhD., 01/2006-12/2008, 2/6132/26, 135 000 Sk

Úloha glykanáz pri biosyntéze bunkových stien rastlín a húb
(The role of glycanases in biosynthesis of plant and fungal cell walls)

Doc. Ing. Vladimír Farkaš, DrSc., 01/2006-12/2008, 2/6133/26, 289 000 Sk

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, 172 000 Sk

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, 172 000 Sk

Ionizácia sacharidov

(Ionization of carbohydrates)

Ing. Ivan Šimkovic, DrSc., 01/2007-12/2009, 2/7030/27, 42 000 Sk

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, 129 000 Sk

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, 104 000 Sk

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)

Ing. Grigorij Kogan, DrSc., 01/2007-12/2009, 2/7033/27, 135 000 Sk

Regulačný potenciál galaktoglukomanánových oligosacharidov v procese morfogénny 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, 111 000 Sk

Glykozylyhydrolázy sekrécnej 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, 95 000 Sk

Regulácia uvoľňovania kapsulárneho polysacharidu kvasiniek *Cryptococcus*

(Regulation of shed of cryptococal capsular polysaccharide)

RNDr. Nadežda Kolarova, PhD., 01/2008-12/2010, 2/0024/08, 68 000 Sk

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, 357 000 Sk

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, 229 000 Sk

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, 112 000 Sk

Biotenzidy na báze sacharidov
(Biosurfactants from saccharides)

Ing. Vladimír Mastihuba, PhD., 01/2008-12/2010, 2/0145/08, 53 000 Sk

1B. Vedecké projekty, ktoré boli v roku 2008 financované VEGA

(názov, vedúci, doba riešenia, evidenčné číslo VEGA, grant z VEGA)

Modulácia adhérence 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, 1/4324/07, 16 000 Sk

Vybrané faktory ovplyvňujúce príjem a transport látok rastlinami využiteľnými 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, 1/4354/07, 51 000 Sk

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, 1/4452/07, 232 000 Sk

2A. Projekty, ktoré boli v roku 2008 financované APVV (APVT)*

(*netýka sa medzinárod. projektov z výziev APVV ako medzištát. zmluvy, COST a pod.)
(názov, vedúci, doba riešenia, evidenčné číslo projektu, grant z APVV)

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., 03/2006-02/2009, APVV-51-003805, 1 488 000 Sk (z toho
1 408 000 Sk bežné a 80 000 Sk kapitálové)

**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., 03/2006-02/2009, APVV-51-033205, 738 000 Sk

**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., 03/2006-02/2009, APVV-51-040205, 970 000 Sk

**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, APVV-51-046505, 801 000 Sk

**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, APVV-51-003206, 1 835 000 Sk

**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, APVV-51-011706, 1 022 000 Sk

**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, APVV-51-012106, 1 296 000 Sk

Potenciálne inhibítory glykozylyhydroláz na báze iminosacharidov
(Potential glycosylhydrolases inhibitors based on iminosugar derivatives)
Ing. Miroslav Kooš, DrSc., 09/2008-12/2010, APVV-0366-07, 491 000 Sk (z toho 193 000
Sk bežné a 298 000 Sk kapitálové)

Pohyblivosť proteínov a katalýza
(Protein motions and catalysis)
Ing. Igor Tvaroška, DrSc., 09/2008-12/2010, APVV-0607-07, 858 000 Sk (z toho 258 000 Sk
bežné a 600 000 Sk kapitálové) - z toho 430 000 Sk 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, APVV-0650-07, 158 000 Sk

2B. Projekty, ktoré boli v roku 2008 financované APVV (APVT)*

(*netýka sa medzinárod. projektov z výziev APVV ako medzištát. zmluvy, COST a pod.)
(názov, vedúci, doba riešenia, evidenčné číslo projektu, grant z APVV)

Nanokompozitné hybridné disperzie (materiály): Príprava a kolektívne vlastnosti
(Nanocomposite hybrid dispersions (materials): Preparation and collective properties)
Prof. RNDr. Ignác Capek, DrSc. (vedúci projektu - Trenčianska univerzita A. Dubčeka, Fakulta priemyselných technológií, Púchov), Mgr. Peter Capek, PhD. (zodp. riešiteľ z CHÚ SAV), 03/2005-03/2008, APVT-20-017304, žiadny príspevok na rok 2008

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, APVV-51-017905, 212 000 Sk (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, APVV-0315-07, 8 000 Sk (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, APVV-0030-07, 195 000 Sk (z toho 28 000 Sk bežné a 167 000 Sk kapitálové; z Jesséniovej lekárskej fakulty v Martine)

Elektrochemické biosenzory na báze nanobiokompozitov pre rýchlu a efektívnu analýzu technologicky a zdravotne významných zložiek potravín a nápojov
(Nanocomposite-based electrochemical biosensors for fast and effective analysis of technologically and medicinally important components of foods and beverages)
Ing. Miroslav Stredanský, PhD. (vedúci projektu - Biorealis, s.r.o., Bratislava), Ing. Peter Gemeiner, DrSc. (zodp. riešiteľ z CHÚ SAV), 01/2008-12/2009, VMSP-P-0052-07, 86 000 Sk (z Biorealis, s.r.o.)

4B. 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)

Koordinátor: Doc. Ing. Tibor Liptaj, CSc. (FCHPT STU)

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

Doba riešenia: 2006-2010 (druhá etapa)

Pridelovateľ finančných prostriedkov: MŠ SR

Pridelené finančné prostriedky: 1 323 200 Sk

5A. Projekty centier excelentnosti SAV

Evidenčné číslo projektu: Zmluva č. II/2/2005

Centrum excelentnosti biochémie sacharidov (GLYCOBIOS)

(Centre of Excellence for Biochemistry of Saccharides (GLYCOBIOS))

Vedúci: Doc. Ing. Vladimír Farkaš, DrSc.

Doba riešenia: 01/01/2005-31/12/2008

Pridelovateľ finančných prostriedkov: SAV

Pridelené finančné prostriedky: 1 000 000 Sk (z toho 900 000 Sk pre CHÚ SAV)

5B. Projekty centier excelentnosti SAV

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

Centrum pokročilej výpočtovej chémie (COMCHEM)

(Centre of Advanced Computational Chemistry (COMCHEM))

Nositeľ 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: 309 000 Sk (z toho 59 000 Sk kapitálové)

7A. Projekty podporované Európskym sociálnym fondom

Evidenčné číslo projektu: DP 405/06-I/32-2.1

Kód projektu: 13120110276

Zvyšovanie odbornosti zamestnancov Chemického ústavu SAV

(Qualification improvement of employees of the Institute of Chemistry SAS)

Manažér projektu: RNDr. Mária Matulová, PhD.

Doba riešenia: 07/2007-12/2008

Finančný príspevok zo ŠR SR: 4 089 180 Sk (v roku 2008 uvoľnených 3 884 721 Sk)

- b) Medzinárodné projekty** (členenie podľa tabuľky v kapitole IV.1.)
(**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. Johann 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: 1 996 675 Sk

Finančný príspevok zo ŠR SR: 370 000 Sk

Evidenčné číslo projektu: 504192 (FP6-2002-Mobility-1 - HRM-Marie Curie Actions-RTN)

Evidenčné číslo kontraktu: MRTN-CT-2004-512265

Functional genomics for biogenesis of the plant cell wall
(**Funkčná genomika pre biogézu 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: 2 122 392 Sk

Finančný príspevok zo ŠR SR: 229 000 Sk

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: 1 355 732 Sk

Finančný príspevok zo ŠR SR: 335 000 Sk

1B. 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 (2), IT (3), NL, PT, SE, SK, UK

Finančný príspevok z EC Brussels: 1 544 214 Sk

Finančný príspevok zo ŠR SR: 154 000 Sk

Evidenčné číslo projektu: 228461

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 EC Brussels: v negociácii

Finančný príspevok zo ŠR SR: žiadny

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

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

Prideľovateľ finančných prostriedkov: EC Brussels

Finančný príspevok zo zahraničia: žiadny

Finančný príspevok zo ŠR SR: 100 000 Sk

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

Prideľovateľ finančných prostriedkov: EC Brussels

Finančný príspevok zo zahraničia: žiadny
Finančný príspevok zo ŠR SR: 100 000 Sk

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

Pridelovateľ finančných prostriedkov: EC Brussels

Finančný príspevok zo zahraničia: žiadny

Finančný príspevok zo ŠR SR: 100 000 Sk

Evidenčné číslo projektu: COST Action 868

Biotechnical functionalisation of renewable polymeric materials
(Biotechnická funkcionizácia obnoviteľných polymérnych materiálov)

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

Zodp. riešiteľ: RNDr. Peter Biely, DrSc.

Doba riešenia: 05/2006-09/2010

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

Pridelovateľ finančných prostriedkov: EC Brussels

Finančný príspevok zo zahraničia: žiadny

Finančný príspevok zo ŠR SR: 100 000 Sk

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

Pridelovateľ finančných prostriedkov: EC Brussels

Finančný príspevok zo zahraničia: žiadny

Finančný príspevok zo ŠR SR: 100 000 Sk

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

Pridelovateľ finančných prostriedkov: European Science Foundation

Finančný príspevok zo zahraničia: žiadny

Finančný príspevok zo ŠR SR: 50 000 Sk

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

Evidenčné číslo projektu: SK-ZA-0005-07

Výzva APVV „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, PhD.

Doba riešenia: 08/2008-12/2010

Dvojstranný projekt: Slovensko, Juhoafrická republika

Pridelovateľ finančných prostriedkov: APPV

Finančný príspevok zo ŠR SR: 150 000 Sk

Evidenčné číslo projektu: SK-FR-0009-07

Výzva APVV „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

Doba riešenia: 01/2008-12/2009

Pridelovateľ finančných prostriedkov: APPV

Finančný príspevok zo ŠR SR: 80 000 Sk

Evidenčné číslo projektu: COST-0004-06

Výzva APVV COST 2006

Faktory ovplyvňujúce príjem a transport minerálnych látok v rastlinách využiteľných vo fyto technológiách

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

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

Doba riešenia: 01/2007-07/2009

Pridelovateľ finančných prostriedkov: APPV

Finančný príspevok zo ŠR SR: 848 000 Sk (z toho 411 000 Sk pre CHÚ SAV)

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

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 najpoužívanějších liečivých rastlinách Južnej Afriky)

Zodp. riešiteľ zo Slovenska: Prof. RNDr. Alexander Lux, CSc.
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
Pridelovateľ finančných prostriedkov: APPV
Finančný príspevok zo ŠR SR: na rok 2008 žiadny

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: 01/2007-31/2009
Dvojstranný projekt: Slovensko, Maďarsko (program vedeckej spolupráce MAD)
Pridelovateľ finančných prostriedkov: SAV
Finančný príspevok zo zahraničia: žiadny
Finančný príspevok zo ŠR SR: žiadny

6A. Iné projekty financované zo zahraničných zdrojov

Evidenčné číslo projektu: ALLTECHEMINST 2006-2008
Biologicky aktívne fungálne polysacharidy a výber kvasiniek vhodných pre komerčné využitie
(Biologically active fungal polysaccharides and selection of the yeasts appropriate for commercial utilization)
Zodp. riešiteľ: Ing. Grigorij Kogan, DrSc.
Doba riešenia: 01/2006-12/2008
Pridelovateľ finančných prostriedkov: Alltech, Inc., Nicholasville, KY, USA
Pridelené finančné prostriedky: 28 258 Sk

Evidenčné číslo projektu: neuvedené
Analysis of biopolymers from detergents
(Analýza biopolymérov z detergentov)
Zodp. riešiteľ: Mgr. Peter Capek, PhD.
Doba riešenia: 03/2008-08/2008
Pridelovateľ finančných prostriedkov: Procter & Gamble Ltd, Newcastle upon Tyne, UK
Pridelené finančné prostriedky: 223 930 Sk

Evidenčné číslo projektu: Agreement 011206
Roasted coffee arabinogalactan structural study
(Štúdium štruktúry arabinogalaktanu izolovaného z praženej kávy)
Zodp. riešiteľ: RNDr. Mária Matulová, PhD.
Doba riešenia: 11/2007-07/2008
Pridelovateľ finančných prostriedkov: ILLYCAFFE S.p.A., Trieste, Taliansko
Pridelené finančné prostriedky: 232 442 Sk (7 000 EUR) (vyúčtované v r. 2007)

Návrhy projektov 7. RP EÚ a ich status

Vedúci zo SAV: Ing. Igor Tvaroška, DrSc.
Akronym projektu: NAD
Názov projektu: NAD—Nanoparticles for therapy and diagnosis of Alzheimer disease
Podprogram: COOPERATION–NMP
Typ projektu: CP–Large
Kód výzvy: FP7-NMP-2007-LARGE-1
Číslo projektu: 212043
CHÚ SAV je: člen konzorcia
Štádium projektu: schválený na financovanie; kontrakt podpísaný

Vedúci zo SAV: Ing. Miloš Hricovíni, PhD.
Akronym projektu: EAST-NMR
Názov projektu: Enhancing acces and services to East European users towards an efficient and coordinated pan-European pool of NMR capacities to enable global research & boost technological advancements
Podprogram: COOPERATION–Health
Typ projektu: CP–Large
Kód výzvy: FP7-INFRASTRUCTURES-2008-1
Číslo projektu: 228461
CHÚ SAV je: člen konzorcia
Štádium projektu: schválený na financovanie; kontrakt v štádiu negociácie

Vedúci zo SAV: Doc. Ing. Vladimír Farkaš, DrSc.
Akronym projektu: TRICHOCROP
Názov projektu: Eco-efficient biofertilisation based on selected Trichoderma strains for horticultural crops
Podprogram: COOPERATION–Food Biotech
Typ projektu: CP–Large
Kód výzvy: FP7-KBBE-2007-2A
CHÚ SAV je: člen konzorcia
Štádium projektu: nebol schválený na financovanie

Vedúci zo SAV: Ing. Mária Mastihubová, PhD.
Akronym projektu: SUGAPHEN
Názov projektu: New polymers combining saccharides and dimerized phenolics
Podprogram: IDEAS–ERC
Typ projektu: Starting Grant
Kód výzvy: FP7-209163-1
CHÚ SAV je: člen konzorcia
Štádium projektu: nebol schválený na financovanie

Vedúci zo SAV: Ing. Miroslav Kooš, DrSc.
Akronym projektu: NANOMED
Názov projektu: Nanomedicine: Nanoparticles modified with receptors as tools for diseases diagnoses and controlled targeted drugs delivery
Podprogram: COOPERATION–Nanotech

Typ projektu:	CP–Small
Kód výzvy:	FP7-NMP-2008-SMALL-2
CHÚ SAV je:	člen konzorcia
Štádium projektu:	nebol schválený na financovanie
Vedúci zo SAV:	RNDr. Mária Matulová, PhD.
Akronym projektu:	MUSHROOMBIOTECH
Názov projektu:	Production of Pleurotus spp. Biomass on different plant raw materials, isolation, characterisation and testing biological active compounds and possibilities of industrial production
Podprogram:	CAPACITIES–Research Potential
Typ projektu:	Coordination and Support Actions
Kód výzvy:	FP7-REGPOT-2008-1
CHÚ SAV je:	člen konzorcia
Štádium projektu:	nebol schválený na financovanie
Vedúci zo SAV:	RNDr. Ján Mucha, CSc.
Akronym projektu:	CARBODEV
Názov projektu:	Carbohydrates and developmental biology
Podprogram:	PEOPLE- Initial Trainig Network
Typ projektu:	SA
Kód výzvy:	FP7-PEOPLE-ITN-2008
CHÚ SAV je:	člen konzorcia
Štádium projektu:	nebol schválený na financovanie
Vedúci zo SAV:	RNDr. Desana Lišková, PhD.
Akronym projektu:	BIOCROP
Názov projektu:	Upgrading forest industry waste to value added bioactive chemicals for crop stimulation and biocontrol
Podprogram:	COOPERATION–Environmental Biotech
Typ projektu:	CP–Small
Kód výzvy:	FP7-KBBE-2008-2B
CHÚ SAV je:	člen konzorcia
Štádium projektu:	nebol schválený na financovanie

Príloha č. 3

Vedecký výstup – bibliografické údaje výstupov (členenie podľa Tabuľky II.3.)

5. Kapitoly vo vedeckých monografiách a vysokošk. učebniciach vydané v domácich vydavateľstvách:

KOVÁČIK, V. - SEGLA, P. Hmotnostná spektrometria. In MILATA, V. - SEGLA, P. - BREZOVÁ, V. - GATIAL, A. - KOVÁČIK, V. - MIGLIERINI, M. - STANKOVSKÝ, Š. - ŠÍMA, J. *Aplikovaná molekulová spektroskopia*. Bratislava: Vydavateľstvo STU, 2008. ISBN 978-80-227-2960-4. p. 457-504.

6. Kapitoly vo vedeckých monografiách a vysokoškolských učebniciach vydané v zahraničných vydavateľstvách:

KOGAN, G. - ŠOLTÉS, L. - STERN, R. - SCHILLER, J. - MENDICHI, R. Hyaluronic acid: Its function and degradation in *in vivo* systems. In ATTA-UR-RAHMAN. *Studies in Natural Products Chemistry*. Vol. 34, Bioactive Natural Products (Part N). Amsterdam: Elsevier, 2008. ISBN 978-0444531803. p. 789-882.

WILSON, I.B.H. - BRETON, C. - IMBERTY, A. - TVAROŠKA, I. Molecular basis for the biosynthesis of oligo- and polysaccharides. In FRASER-REID, B.O. - TATSUTA, K. - THIEM, J. - COTÉ, G.L. - FLITSCH, S. - ITO, Y. - KONDO, H. - NISHIMURA, S.I. - YU, B. *Glycoscience - Chemistry and Chemical Biology* (2nd ed.). Berlin: Springer-Verlag, 2008. ISBN 978-3-540-36157-2. p. 2265-2323.

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

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BAUEROVÁ, K. - PONIŠT, S. - NAVAROVÁ, J. - DUBNIČKOVÁ, M. - PAULOVÍČOVÁ, E. - PAJTINKA, M. - KOGAN, G. - MIHALOVÁ, D. Glucomannan in prevention of oxidative stress and inflammation occurring in adjuvant arthritis. In *Neuroendocrinology Letters*. Vol. 29, (2008), p. 691-696. (1.443 – IF2007)

BEZÁKOVÁ, Z. - HERMANNOVÁ, M. - DŘÍMALOVÁ, E. - MALOVÍKOVÁ, A. - EBRINGEROVÁ, A. - VELEBNÝ, V. Effect of microwave irradiation on the molecular and structural properties of hyaluronan. In *Carbohydrate Polymers*. Vol. 73, (2008), p. 640-646. (1.782 – IF2007)

BHUNIA, A. - SCHWARDT, O. - GÄTHJE, H. - GAO, G.-P. - KELM, S. - BENIE, A.J. - HRICOVÍNI, M. - PETERS, T. - ERNST, B. Consistent bioactive conformation of the Neu5Aca(2→3)Gal epitope upon lectin binding. In *ChemBioChem*. Vol. 9, (2008), p. 2941-2945. (3.446 – IF2007)

- BIELY, P. - LEATHERS, T.D. - CZISZÁROVÁ, M. - VRŠANSKÁ, M. - COTTA, M.A. Endo- β -1,4-xylanase inhibitors in leaves and roots of germinated maize. In *Journal of Cereal Science*. Vol. 47, (2008), p. 27-32. (1.905 – IF2007)
- BREIEROVÁ, E. - GREGOR, T. - MAROVÁ, I. - ČERTÍK, M. - KOGAN, G. Enhanced antioxidant formula based on a selenium-supplemented carotenoid-producing yeast biomass. In *Chemistry & Biodiversity*. Vol. 5, (2008), p. 440-446. (1.420 – IF2007)
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- CABIB, E. - FARKAS, V. - KOSIK, O. - BLANCO, N. - ARROYO, J. - McPIE, P. Assembly of the yeast cell wall: Crh1p and Crh2p act as transglycosylases in vivo and in vitro. In *Journal of Biological Chemistry*. Vol. 283, (2008), p. 29859-29872. (5.581 – IF2007)
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**9b. Vedecké práce v časopisoch evidovaných v iných medzinárodných databázach -
doplňky z roku 2007:**

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10. Vedecké a odborné práce v ostatných časopisoch:

KAŇUCHOVÁ PÁTKOVÁ, J. - VAJCZIKOVÁ, I. - NEMCOVÁ, K. - BREIEROVÁ, E. Prirodená mikróflóra – naozaj ju treba potlačiť? In *Víno a vinič*. Roč. VIII, č. 5 (2008), s. 156-157.

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

BAUEROVÁ, K. - PONIŠT, S. - VALACHOVÁ, K. - MIHÁLOVÁ, D. - ŠOLTÉS, L. - KOMENDOVÁ, D. - TOMEKOVÁ, V. - ŠTROSOVÁ, M. - GEMEINER, P. - POLI, G. New ways of supplementary and combinatory therapy of rheumatoid arthritis (RA) by synthetic and natural substances with antioxidant properties. New perspectives for routinely administered drugs in RA. In BAUER, V. - DUBOVICKÝ, M. - KOUŘILOVÁ, M. - MACH, M. - NAVAROVÁ, J. - NOSÁL, R. - SOTNÍKOVÁ, R. *Trends in Pharmacological Research*. Bratislava: Institute of Experimental Pharmacology, 2008. ISBN 978-80-970003-7-0. p. 25-32.

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KOŠÍKOVÁ, B. - SLÁVIKOVÁ, E. Adsorption affinity of lignin preparations towards genotoxic compounds. In BUBENÍKOVÁ, T. *Zborník z medzinárodnej vedeckej konferencie „Zem v pasci? 2008: Analýza zložiek životného prostredia“, 28.-30. apríl 2008, Vyhne*. Zvolen: Technická univerzita vo Zvolene, 2008. ISBN 978-80-228-1848-3. CD-Rom. p. 288-293.

MÉSZÁROSOVÁ, C. - KOLAROVA, N. Degradácia kryptokokálnych kapsulárnych polysacharidov. In MUSILOVÁ, J. - VOZÁR, Ľ. *Zborník: III. Vedecká konferencia doktorandov, 28. november 2008, Nitra*. Nitra: Slovenská poľnohospodárska univerzita. ISBN 978-80-552-0138-2. p. 76-79.

SLAMINKOVÁ, Z. - REVAJOVÁ, V. - LEVKUT, M. - LEVKUTOVÁ, M. - TOMKOVÁ, I. - LENG, Ľ. - BORUTOVÁ, R. - KOŠÍKOVÁ, B. Observation of blood and intestinal lymphocyte subpopulations in chickens after application of deoxynivalenol and lignin. In JACKOVÁ, A. - SMRČO, P. *Proceedings of 3rd International Scientific Conference „Infectious and parasitic diseases of animals“, 4-5 September 2008, Košice*. Košice: Univerzita veterinárskeho lekárstva v Košiciach, 2008. ISBN 978-80-8077-095-2. p. 106-108.

SROKOVÁ, I. - ČÍŽOVÁ, A. - SKALKOVÁ, P. - MINÍKOVÁ, S. - TOMANOVÁ, V. - EBRINGEROVÁ, A. Microwave-assisted esterification of selected polysaccharides. In PIELICHOWSKI, K. *Proceedings of 3rd International Seminar on Modern Polymeric Materials for Enviromental Applications, 14-16 May 2008, Kraków*. Kraków: Cracow University of Technology, 2008. ISBN 978-83-923451-6-9. Vol. 3, p. 223-228.

TOMANOVÁ, V. - SROKOVÁ, I. - MALOVIKOVÁ, A. - EBRINGEROVÁ, A. Surface - active and viscometric poperties of HM-CMC solutions. In *Sborník vedeckých prací Vysoké školy báňské–Technické univerzity Ostrava*. Roč. LI, řada hutnická, č.1, (2008), p.327-331. Ostrava: Vysoká škola báňská–Technická univerzita Ostrava, 2008. ISBN 978-80-248-166.

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

BUČKO, M. - GEMEINER, P. - VIKARTOVSKÁ, A. - LACÍK, I. - KOLLÁRIKOVÁ, G. - CHORVÁT, D. - MIHOVILOVIČ, M.D. - RUDROFF, F. Controlled encapsulation of biocatalysts for chiral immobilized biotechnology. In *Proceedings of COST Action 865 - XVI International Conference on Bioencapsulation, 4-6 September 2008, Dublin, Ireland*. Dublin: Dublin City University, 2008. Session 7, O07-13, p. 1-4.

KOŠŤÁLOVÁ Z. - HROMÁDKOVÁ, Z. - EBRINGEROVÁ, A. Polysacharidy tekvicovej biomasy a ich antioxidačné vlastnosti. In *I. Vedecká konferencia „Stretnutie mladých pracovníkov v potravinárstve, 4.-5. december 2008, Modra*. Bratislava: Výskumný ústav potravinársky, 2008. ISBN 978-80-89088-75-1. CD-Rom. s. 61-65.

14. Vydané periodiká evidované v Current Contents:

Chemical Papers (Chemické Zvesti)

Vydavateľ: Chemický ústav SAV. Od roku 2007 je publikovanie tlačenej a elektronickej verzie v kompetencii vydavateľstva Springer-Verlag GmbH (zabezpečuje Versita). V roku 2008 bolo vydaných pravidelných 6 čísiel ako súčasť vol. 62. ISSN: 0336-6352 (Print), 1336-9075 (Online).

16. Vydané alebo editované zborníky z vedeckých podujatí:

36th Annual Conference on Yeasts: Programme and Abstracts, 14-16 May 2008, Smolenice, Slovakia. Bratislava: Institute of Chemistry SAS, 2008, 88 p. ISSN 1336-4839.

11th Bratislava Symposium on Saccharides: Program and Abstracts, September 21-26, 2008, Smolenice, Slovakia. Bratislava: Institute of Chemistry SAS, 2008. 82 p.

COST 868 Workshop „Biotechnical functionalisation of renewable polymeric materials“, April 17-18, Bratislava, Slovak Republic. Bratislava: Institute of Chemistry SAS, 2008. 67 p.

Príloha č. 4

Údaje o pedagogickej činnosti pracoviska

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

Prednášatelia semestrálnych predmetov

Ing. Miloš Hricovíni, PhD.

Rezonančná spektroskopia (5. ročník).

Katedra fyzikálnej chémie, Prírodovedecká fakulta UK, Bratislava.

1 h týždenne, úhrnne 12 h

RNDr. Karin Kollárová, PhD.

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

Katedra fyziológie rastlín, Prírodovedecká fakulta UK, Bratislava.

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

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. Vladimír Mastihuba, PhD.

Mliekárstvo II.

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

2 h týždenne, úhrnne 26 h

Mliekárstvo

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

úhrnne 3 h

Špeciálne prednášky

Ing. Elena Sláviková, PhD.

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

Katedra mikrobiológie a virológie, Prírodovedecká fakulta UK, Bratislava.

Úhrnne 2 h

RNDr. Peter Biely, DrSc.

Špeciálne prednášky (spolu 11) v rámci:

1. Short course of carbohydrate chemistry and biochemistry
2. Specialized lectures for MS and PhD students

3. Demonstrations and consulting with students

Department of Biotechnology and Food Technology, Faculty of Applied Sciences, Durban University of Technology, Durban, South Africa, January 14-March 7, 2008.

Úhrnné 21 h

Diversity of substrate recognition by endo-beta-1,4-xylanases, important industrial enzymes. Microbial beta-Xylosidases and accessory xylanolytic enzymes.

Two lectures at postgraduate course "Sustainable Products and Processes"

Department of Microbiology, Faculty of Biology, University of Barcelona, April 6-7, 2008.

Úhrnné 4 h

Vedúci cvičení

Ing. Eva Stratilová, PhD.

Speciální praktikum z biotechnologie, 4. ročník.

Ústav chemie potravin a biotechnologií, Fakulta chemická, Vysoké učení technické v Brně, Brno, Česká republika.

Úhrnné 36 h

Vedúci diplomovej a preddiplomovej praxe

RNDr. Karin Kollárová, PhD.

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

Úhrnné 240 h

Ing. Miroslav Kooš, DrSc.

Študent: Katarína Jankovičová (FPV UCM, Trnava)

Úhrnné 120 h

Ing. Ema Paulovičová, PhD.

Študent: Marta Brlejšová (FCHPT STU)

Úhrnné 390 h

Mgr. Ivan Zelko

Študent: Sandra Vašiová (PriF UK)

Úhrnné 120 h

Príloha č. 5

Údaje o medzinárodnej vedeckej spolupráci

(A) 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
Francúzsko			Matulová Capek	34 13	Zelko Lišková Husárová Capek	99 5 77 11
Nemecko	Petruš Hricovíni	4 3				
Česká republika	Garajová Stratilová	8 8	Kolarova Stratilová Capek Farkaš V.	2 7 1 2	Breierová Mucha Farkaš P. Sihelníková Klaudiny Mastihuba Sasinková Krupička Spiwok Nawara A. Nawara K. Raab Mészároszová Capek	4 1 4 5 1 3 7 5 1 1 1 1 5 13
Juhoafrická republika			Biely Vršanská	14 14		
USA					Bekešová	366
Taliansko	Kosík Farkaš V. Tvaroška	7 7 3	Hricovíni	15		
Holandsko	Krupička Tvaroška Spiwok	5 5 5				
Španielsko					Biely	8
Dánsko					Vršanská	3
Rakúsko					Mucha Tvaroška Both Hricovíni Matulová Nahálka Bučko Gregorová	1 2 15 1 1 59 8 366
Írsko	Sihelníková	3				
Japonsko					Biely	23

Veľká Británia	Farkaš V. Kosík Krupička Tvaroška Spiwok	4 4 4 3 11			Kosík Nawara A. Nawara K. Baráth Šesták Tkáč	12 4 4 366 366 366
Poľsko					Capek	6
Fínsko	Tvaroška	3			Poláková	4
Kanada					Lattová Tvaroška Košíková	366 7 7
Rusko					Nahálka	9
Švajčiarsko	Lišková Vršanská	4 4			Spiwok	8
Turecko			Biely	6		
Ukrajina					Biely	5
Maďarsko	Farkaš V. Tvaroška Kozmon	4 6 6				
Lotyšsko	Farkaš V.	4				
Počet vyslaní spolu		115		108		2624

(B) 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	Řehulka P. Řehulková H.	12 12				
Maďarsko	Somsák L. Kónya B.	5 29			Mucs D.	7
Turecko						
Poľsko	Galezowski M. Kalkan A.	7 7			Bocian W.	7
Lotyšsko	Rapoports A.	6				
Taliansko					Galiani P.	154
Počet prijatí spolu		78				168

(C) Účast' pracovníkov pracoviska na konferenciách v zahraničí (nezahrnutých v "A"):

Krajina	Názov konferencie	Meno pracovníka	Počet dní
Česká republika	4th Meeting on Chemistry and Life 2008, Brno	Breierová	3
		Mastihuba	3
		Garajová	3
	Polysacharidy IV	Capek	4
		Hirsch	4
		Hromádková	4

	XXI. Biochemický sjezd, České Budějovice	Đuranová Kolenová Kolarova Spiwok	5 5 4 5
	2 nd Annual Meeting of (I3) EU-NMR and (CA) NMR-LIFE	Hricovíni	2
	XII. Setkání biochemiků a molekulárních biologů	Garajová Both Kosík	3 3 2
	60. Sjezd Asociací českých a slovenských chemických společností	Sasinková	4
	Molekulová spektroskopie	Sasinková	3
	5 th SUPRAPHONE Meeting and 4 th WG Meeting COST D31	Krupička	3
Francúzsko	COST Action 859, Meeting of Working Group 4	Lišková Lux	3 3
Čína	BIT Life Sciences 1st Annual World Cancer Congress-2008	Košíková	10
	World Summit of Antivirals	Hirsch Tvaroška	10 10
	7th International Conference on ICAV	Tvaroška	7
Juhoafrická republika	Symposium BIO-08, Grahamstown	Biely	14
	Seminar – Biosciences CSIR, Moddenfontein	Biely	6
Taliansko	Frontiers in Immunology Research 2008	Paulovičová L.	8
	Summer School Quantum Monte Carlo	Krupička	7
Nemecko	Conference EU-NMR	Hricovíni	3
	The 4 th Glycan Forum in Berlin	Hirsch Tvaroška	5 5
Mexiko	Polymer Synthesis 2008, Cancun	Košíková	8
Spojené arabské emiráty	1 st International Conference on Drug Design & Discovery	Hirsch Tvaroška	7 7
Švajčiarsko	Executive Committee Meeting of COST Action 859	Lišková Lux	2 2
	ISQBP President's Meeting 2008 „Pushing the Boundaries of Biomolecular Simulations“	Kóňa	8
Fínsko	XVIth Congress of the Federation of European Societies of Plant Biology (FESPB 2008); 8th International Peroxidase Symposium	Kollárová Zelko	6 6
Írsko	XVIth International Conference on Bioencapsulation	Bučko	5
Holandsko	International Symposium „Pectin and Pectinases 2008“	Stratilová	4
	Summer Course Glycosciences	Tomčová	6
Nórsko	24th International Carbohydrate Symposium	Raab Kóňa Hirsch Tvaroška Medovarská Farkaš P.	8 8 6 6 8 8

		Petruš	7
		Petrušová	7
		Kozmon	7
		Spiwok	8
		Poláková	7
Poľsko	ERA-Chemistry Workshop: Chemistry of Raw Material Change; Chemical Transformation of Biomass	Hromádková	4
		Košíková	3
	VI th International Congress of Young Chemists „YoungChem 2008“	Košťálová	7
		Šefčovičová	7
Rusko	SialoGlyco-2008	Nahálka	7
	EUROMAR Magnetic Resonance Conference 2008	Matulová	7
Dánsko	COST Action FP602 - Meeting of Working Group	Biely	6
Grécko	2nd International Summer School and 5th International Conference on Nanoscience and Nanotechnology	Sihelníková	8
Slovinsko	4. Congress of Slovenian Microbial Society	Biely	3
Španielsko	18th European Congress of Clinical Microbiology and Infectious Diseases (ESCMID)	Vráblová	6
	XXVII Congress of the European Academy of Allergology and Clinical Immunology	Paulovičová E.	7
Ukrajina	12. International Congress on Yeasts, Kyjev	Ryabova	5
Veľká Británia	5th European Symposium on Enzymes in Grain Processing (Cost Action 928)	Đuranová	5
		Vršanská	5
		Biely	5

Vysvetlivky: MAD - medziakademické dohody, KD - kultúrne dohody, VTS - vedecko-technická spolupráca v rámci vládnych dohôd

Príloha č. 6

Vedecko-popularizačná činnosť

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2. Li, JK; Wang, T; Zhang, ZH; Pan, YH. 2007. Proteomic analysis of royal jelly from three strains of western honeybees (*Apis mellifera*). *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY* 55 (21): 8411-8422.
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