Shromáždění zaměstnanců ÚOCHB

Assembly of IOCB Employees

21. ledna 2015
January 21, 2015

Program

- Zpráva ředitele za uplynulý rok
- Výhled pro rok 2015
- Harmonogram stavby

- Director's report for the past year
- Outlook for 2015
- Construction timeline

(Milan Drahoňovský)

- Sociální fond

- Social Fund

(Luboš Rulíšek)

- Doplňovací volby do Rady instituce

- Supplementary Election to the Board of Institute

Zdeněk Hostomský

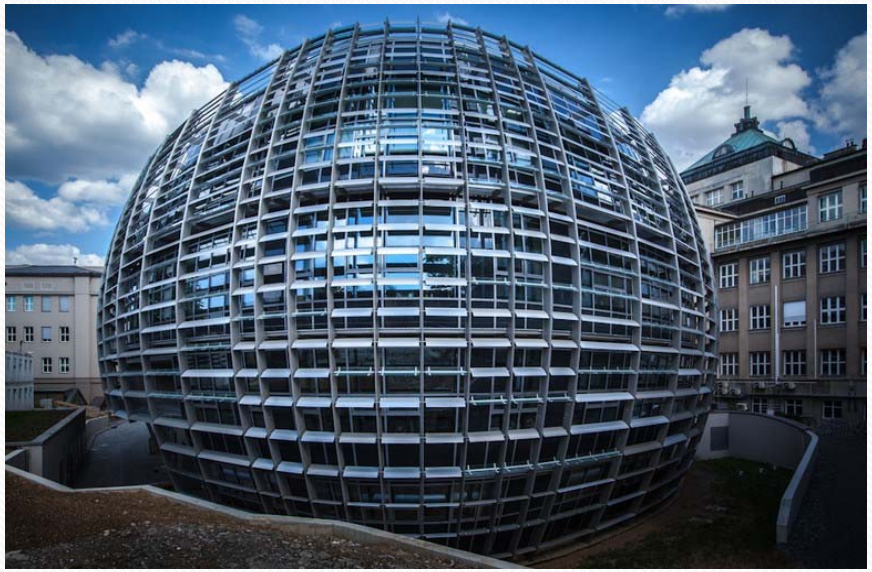
Zpráva ředitele za uplynulý rok

Director's report for the past year

Otevření budovy B 19. června 2014

Building B – Opening June 19, 2014

Exteriér budovy B IOCB Building B exterior

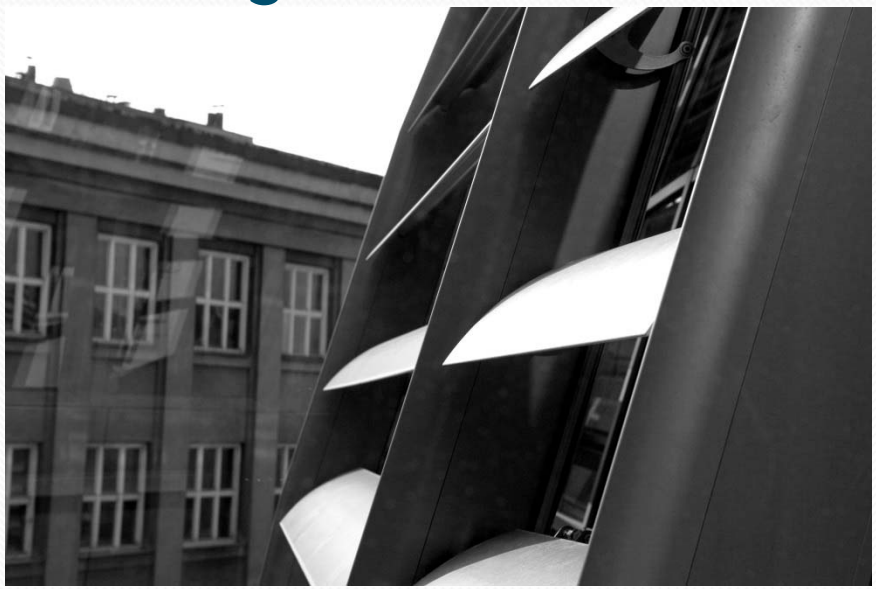


Budova B – střešní oáza

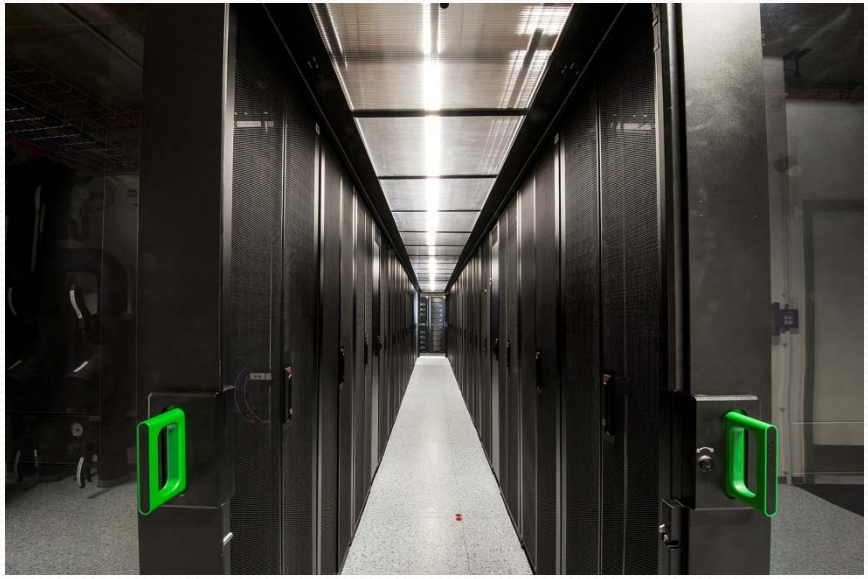
IOCB Building B – Roof oasis

Interiér budovy B

Building B Interior



Technologické podzemí B - technology underground



Český premiér (a vicepremiér) na ÚOCHB

Czech Prime Minister (and Deputy PM) at IOCB

7. srpen 2014

August 7, 2014

Harrachov 2014

- Výjezdní symposium ÚOCHB 21.-24. května 2014

- IOCB off-site Symposium May 21-24, 2014

Advances in Drug Discovery – Chemistry and Biology

Prague, Czech Republic, September 1st – 5th, 2014

FIRST ANNOUCEMENT

The summer school is designated to pre and post graduate students and will give an overview in following areas:

- General chemical approaches – medicinal chemistry
- Biochemical approaches – target oriented research
- Structure and In Silico based drug design
- General principles of commercial drug development cycle

The course is organized by the Institute of Chemical Technology, Prague (ICTP www.ict.cz) and Institute of Organic Chemistry and Biochemistry, ASCR (IOCB www.iocb.cz)

PRELIMINARY PROGRAMME

Monday Sep 1st

Evening - welcome party at the Masaryk Dormitory

Tuesday Sep 2nd

Morning: Opening
General introduction to drug development
Medicinal chemistry of anticancer drugs
Sugar chemistry

Lunch

Antimalarials
Medicinal chemistry of antiviral drugs
Medicinal chemistry of antibiotics
Diagnostics and therapy of asthma
Chiral synthesis

Detailed program is available at www.praguesummerschool.cz

Wednesday Sept 3rd

Morning
Biology of HIV research
Insulin and diabetes research
Biology and treatment of metabolic Syndrome "Theranostics"

Lunch

IOCB facility tour/ICTP facility tour
PRAGUE Guided Tour + Beer Dinner

Thursday Sept 4th

X-ray and structural biology
Structure based and *in silico* drug design
Modern analytical methods in drug development

Lunch

Metabolic transformations
Biotransformation
Biological drugs

Friday Sep 5th

Departure

The registration is now open for specialized course in drug discovery and development at www.praguesummerschool.cz

Registration fee:

300 € before April 30th	350 € after April 30th

fee includes:

- ☐ Admission to the scientific programme
- ☐ Accommodation for 4 nights (September 1 – 5) at Masaryk Dormitory
- ☐ Conference materials
- ☐ Coffee breaks, lunches
- ☐ Welcome party
- ☐ Guided tour with dinner at Prague Brewery

Organising Secretariat: Congress Business Travel
Lidická 43/66, 150 00 Praha 5 – Anděl; Phone: (+420) 224 942 575, 224 942 579; Fax: (+420) 224 942 550;
E-mail: summerschool2014@cbttravel.cz

Letní škola

První ročník úspěšně proběhl v září 2014

Přípravy pro druhý ročník jsou v plném proudu

Summer school

First year successfully completed in September 2014

Preparations for year 2 already started

Vědecký jarmark Science Fair 2014

Wednesday, September 10, 2014, Vítězné náměstí

- **VĚDA NÁS BAVÍ, o.p.s.,**
- **Institute of Organic Chemistry and Biochemistry**
- **The Institute of Chemical Technology**
- **Czech Technical University in Prague**

Special thanks to: Groups of Petr Bouř, Filip Teplý and NMR.

Adjunct Professors

Ing. Aleš Svatoš, CSc.

Adjunktní profesoři – působí v jiných institucích ale jsou napojeni na dění na ÚOCHB a mají eminentní zájem o jeho prospěch

prof. Ing. Pavel Kočovský, DSc.

RNDr. Ivan Hirsch, CSc.

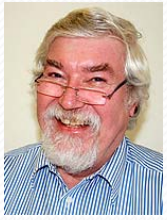
Adjunct professors- associated with different institutions but are connected to activities at IOCB and have its best interest in mind

prof. RNDr. Martin Kotora, CSc.

International Advisory Board (IAB)

Dr. Alexander Wlodawer
Macromolecular Crystallography Lab.
National Cancer Institute,
Frederick, MD, USA

Prof. Dr. Karl-Heinz Altmann
ETH Zurich
Institute of Pharmaceutical Sciencss
Switzerland



Prof. Dr. Wilhelm Boland
Max-Planck-Institut für Chemische Ökologie
Jena, Germany

Prof. Cynthia J. Burrows PhD
University of Utah
Department of Chemistry,
Salt Lake City, UT, USA

Prof. Dr. Burkhard König
Institut für Organische Chemie
Universität Regensburg,
Germany

Prof. Dr. med. Hans-Georg Kräusslich
Department of Infectious Diseases –
Virology, University Hospital Heidelberg
Germany

Prof. Lanny S. Liebeskind PhD
Emory University
Department of Chemistry,
Atlanta, GA, USA

Prof. Ing. Dr. Marko D. Mihovilovic
Vienna University of Technology
Institute of Applied Synthetic Chemistry,
Austria

Prof. Barry V. L. Potter PhD
University of Bath
Department of Pharmacy and Pharmacology,
United Kingdom

Prof. Dr. Helmut Schwarz
Technische Universität, Berlin
Department of Chemistry,
Germany

ÚOCHB IOCB 2014

Pět významných publikací

Five significant publications

Bouř group

Šebestík, J.; Bouř, P. *Angew. Chem. Int. Ed.* **2014**, 53 (35), 9236-9239. “Observation of Paramagnetic Raman Optical Activity of Nitrogen Dioxide.”

Rotation of the plane of linearly polarized light when interacting with asymmetric molecules has been attracting people’s attention since the time of Luis Pasteur (1848), because of the underlying physical principles and relation to biological compounds. Interestingly, almost at the same time, magneto-optics phenomena were discovered, such as the Faraday Effect. Until now, several other techniques were developed and are routinely used in laboratories, with or without the magnet, like circular dichroism or Raman optical activity. In this study, we reported a new flavor of such magneto-optic spectroscopy, paramagnetic Raman optical activity of gases. This was considered difficult because of the low signal. We succeeded because of a construction of the magnetic cell, a large signal of the NO_2 molecule, and a detailed theoretical analysis. The results suggest that the technique can bring about unique information about molecular properties, and may be even usable for a characterization of industrial gases.

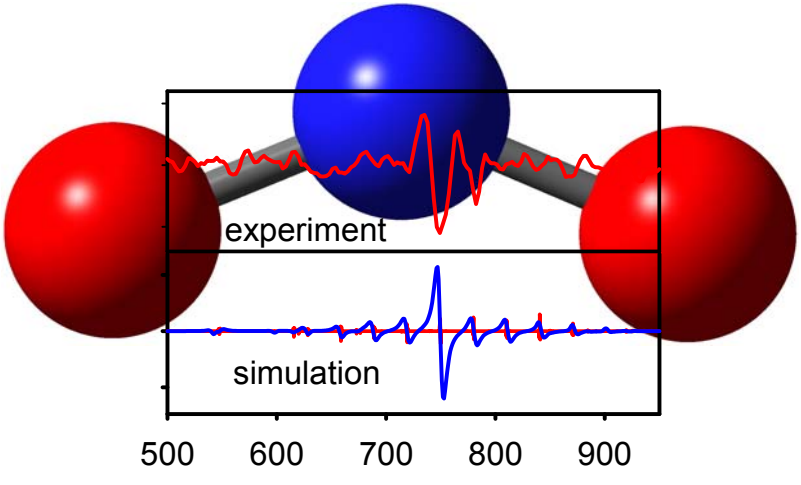


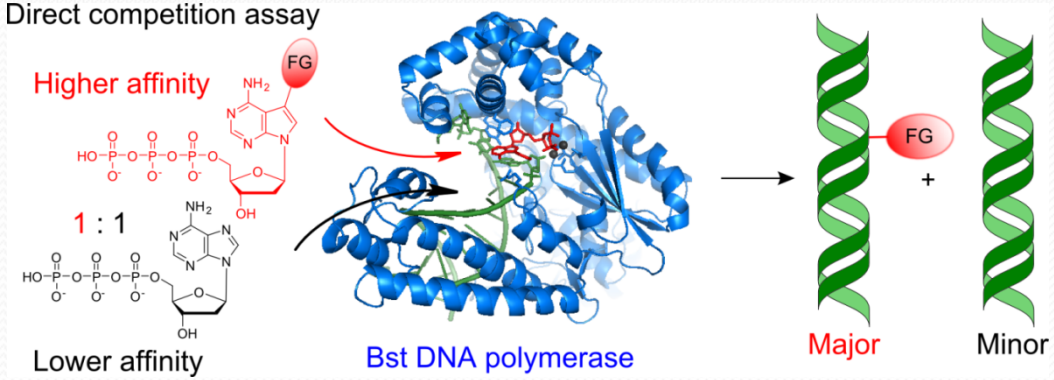
Figure. Experimental paramagnetic Raman optical activity of NO_2 was verified through comparison with a simulation.

Hocek group

DNA polymerases preferentially synthesize artificial modified DNA even in presence of natural substrates

Kielkowski, P.; Fanfrlík, J.; Hocek, M. "7-Aryl-7-deazaadenine 2'-Deoxyribonucleoside Triphosphates (dNTPs): Better Substrates for DNA polymerases than dATP in Competitive Incorporations" *Angew. Chem. Int. Ed.* **2014**, *53*, 7552-7555

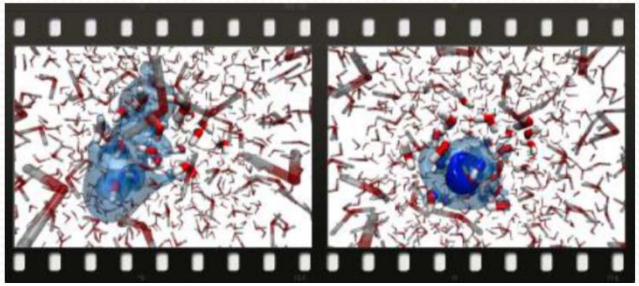
Scientists from the Joint Laboratory of Bioorganic and Medicinal Chemistry of Nucleic Acids of the Institute of Organic Chemistry and Biochemistry ASCR and Faculty of Science of the Charles University (group of Prof. Hocek) discovered a whole class of artificial labelled nucleoside triphosphates that are surprisingly much better substrates for DNA polymerases than the natural nucleotide (dATP) hence the enzymes preferentially synthesize artificial modified DNA and explained the mechanism of this unusual activity. This finding not only significantly contributes to the knowledge of mechanism of DNA replication but also paves the way to enzymatic synthesis of modified nucleic acids for applications in diagnostics and chemical biology.



Jungwirth group

How is a “wet“ electron formed?
Savolainen, J.; Uhlig, F.; Ahmed, S.; Hamm, P.; Jungwirth, P.: Direct Observation of the Collapse of the Delocalized Excess Electron in Water. Nature Chemistry, 6 (2014) 697-701.

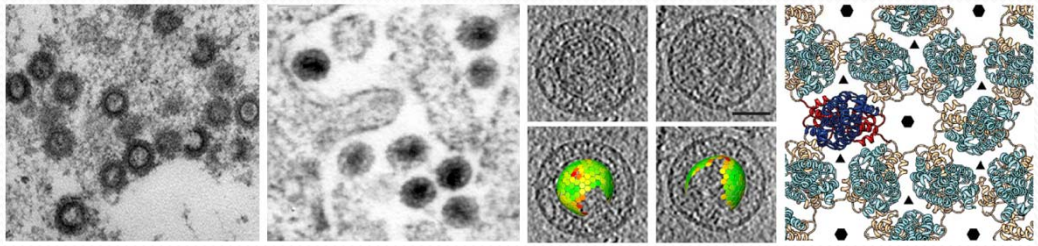
Everybody who ever put salt in a soup knows how ions dissolve in an aqueous environment. How does, however, electron dissolve in water? Does this negatively charged elementary particle dissolve similarly to a chloride anion from kitchen salt or do quantum mechanical effects kick in and ensure a completely different dissolution scenario? These questions not only touch the frontier between classical and quantum mechanics (investigations and modeling of which has been rewarded by the Chemistry Nobel Prize in 2012) but also have practical implications in radiation chemistry. Formation and dissolution of electrons in water and subsequent reactions are important for understanding radiation cancer therapy, as well as chemical processes taking place during nuclear waste storage. Calculations combining classical and quantum mechanics, carried out at the Institute of Organic Chemistry and Biochemistry of the Academy of Sciences, together with ultrafast terahertz laser experiments, performed at the University of Zurich in Switzerland, give an answer to fundamental questions concerning formation of the hydrated electron. It turns out that electron is formed in water via photoionization as a delocalized quantum wave which, however, within a picosecond (i.e. a millionth of a millionth of a second) contracts to a roughly spherical object with a diameter of a quarter of a nanometer. One says that seeing is believing. The study of Czech and Swiss chemists shows directly how a nascent electron looks like in water and how extremely rapidly it dissolves.



Rumlová (in Pichová group)

Structural and biochemical study of interactions mediating formation of immature and mature retroviral particles.

Retroviruses such as Human immunodeficiency virus type 1 (HIV-1) are of great medical importance. Retroviral assembly proceeds in two stages. First, the viral Gag polyprotein assembles into a hexameric protein lattice at the plasma membrane of the infected cell, inducing budding and release of an immature particle. During second stage, Gag is cleaved by the viral protease, leading to internal rearrangement of the virus into the mature, infectious form. Using Mason-Pfizer monkey virus (M-PMV) as a model retrovirus, we studied the structural organization of retroviral particles and interactions mediating the formation of both immature as well as mature particles. We provided biochemical and structural data confirming the general relevance of a short segment of the structural polyprotein Gag for retrovirus assembly and infectivity (Strohalmová-Bohmová et al., 2014). Combining biochemical and structural NMR analyses, we identified a network of supportive interactions that stabilize the M-PMV capsid protein (CA) in mature conformation (Obr et al., 2014). We also contributed to resolve the structure of the capsid lattice within intact immature HIV-1 and M-PMV particles at subnanometre resolution using cryo-electron tomography and sub-tomogram averaging methods. The resulting model reveals tertiary and quaternary structural interactions that mediate HIV-1 and M-PMV assembly. Comparison the immature HIV-1 with M-PMV structures reveals that retroviral capsid proteins, while having conserved tertiary structures, adopt different quaternary arrangements (Schur et al., 2014).



Rumlová (in Pichová group)

Strohalmová-Bohmová K., Spiwok V., Lepšík M., Hadravová R., Křížová I., Ulbrich P., Pichová I., Bednárová L., Ruml T., Rumlová M.: Role of Mason-Pfizer monkey virus CA-NC spacer peptide-like domain in assembly of immature particles. J. Virol., 88(24):14148, (2014)

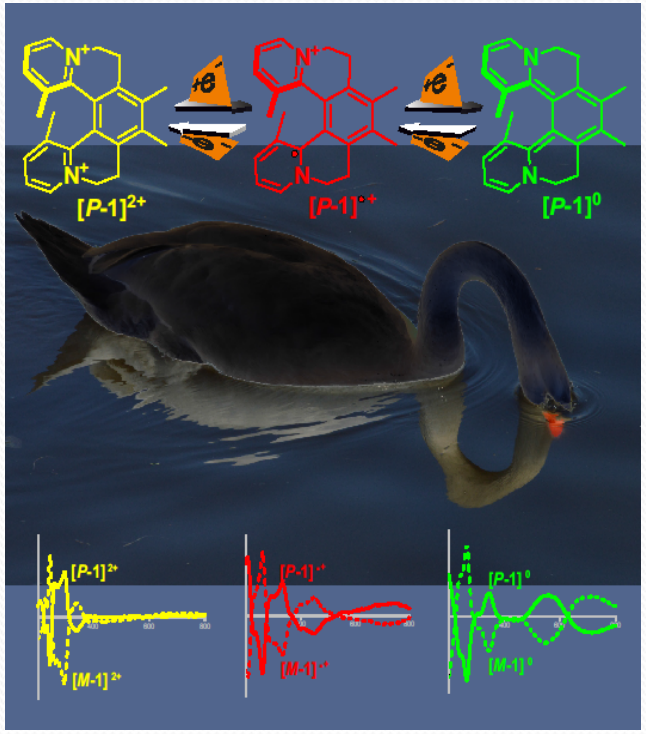
Obr M., Hadravová R., Doležal M., Křížová I., Papoušková V., Žídek L., Hrabal H., Ruml T., Rumlová M.: Stabilization of the beta-hairpin in Mason-Pfizer monkey virus capsid protein- a critical step for infectivity. Retrovirology, 11:94, (2014)

Schur F., Hagen W., Rumlová M., Ruml T., Müller B., Kraeusslich H.-G., Briggs J.,: The structure of the immature HIV-1 capsid in intact virus particles at 8.8 Å resolution. Nature, doi:10.1038/nature13838, (2014)

Teplý group (TRG)

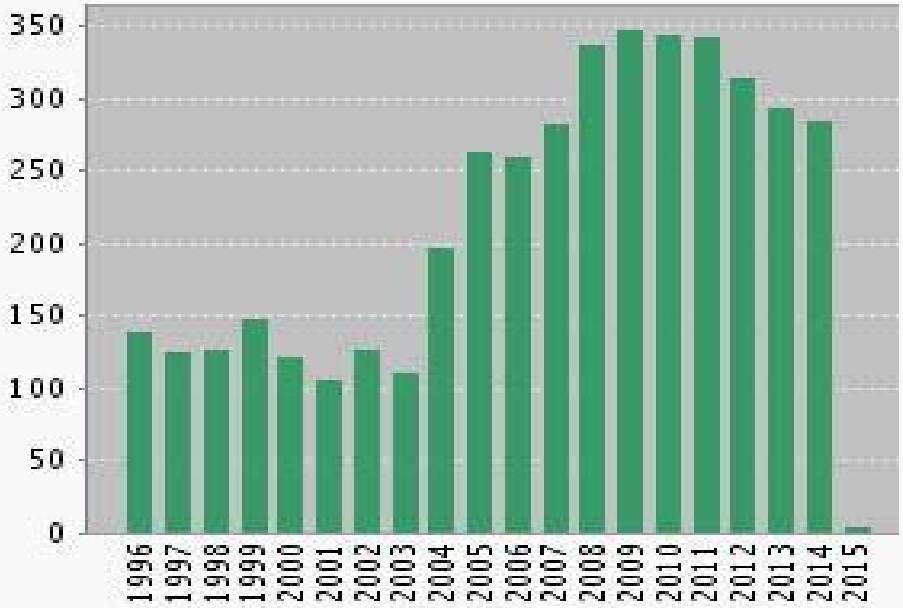
Pospíšil, L. - Bednárová, L. - Štěpánek, P. - Slavíček, P. - Vávra, J. - Hromadová, M. - Dlouhá, H. - Tarábek, J. - Teplý F.: Intense Chiroptical Switching in a Dicationic Helicene-Like Derivative: Exploration of a Viologen-Type Redox Manifold of a Non-Racemic Helquat. Journal of the American Chemical Society. Roč. 136, č. 31 (2014), s. 10826–10829.

This report documents a new level of control over the chiroptical properties of helical systems, known as helquats. By simply altering the molecules' redox states, enantiopure helquats, while retaining their overall shape, undergo a profound change in their electronic state and thus sizable changes in their electronic circular dichroism spectra at certain wavelengths, which is unique for a chiroptical switch. Furthermore, this helically chiral system features the most intense chiroptical switch response documented in the field of helicenoids. This unprecedented example of a "chiro-switch" may lead to the development of new classes of optical switches and light modulators and contribute to the emerging field of chiral organic conducting systems.

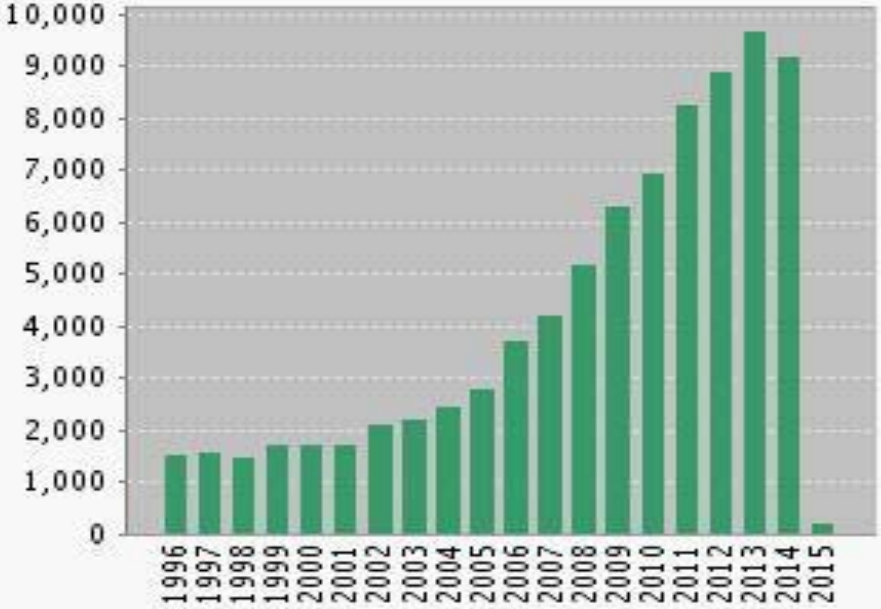


Publikace ÚOCHB IOCB Publications

Web of Science -papers



Web of Science – IOCB citations



The number of high-quality (IF > 5) papers is constant in 2011-2014:
approximately 65/year

2014 (selected contributions)

Journal	# of contributions from IOCB
Nature Chemistry	2
J. Am. Chem. Soc.	3
Angew. Chem. Int. Ed.	7
Proc. Natl. Acad. Sci. U.S.A.	1
EMBO Journal	2
EMBO Reports	1
Chem. Comm.	4
Chemistry - Eur. J.	8
Nucleic Acid Res.	5
Cancer Res.	1
Org. Lett.	2
Nanoscale	2
Small	1
J. Phys. Chem. Lett.	3
…	

Grants 2014

GRANTOVÉ PROJEKTY ZAHÁJENÉ V ROCE 2014	
(GRANTS PROJECTS INITIATED IN 2014	
Agentura (Agency)	**Počet (#)**
GAČR - UOCHB - hlavní řešitel (principal investigator)	13*
GAČR - UOCHB - postdoc	1
GAČR - UOCHB - spoluřešitel (co-investigator)	2
Celkem GAČR (Total)	**16**
TAČR - ALFA 4 - UOCHB - hlavní řešitel (principal investigator)	1
Celkem TAČR	**1**
MŠMT - NPU *(navazuje na centra)* - UOCHB - hlavní řešitel	1
MŠMT - NPU *(navazuje na centra)* - UOCHB - spoluřešitel	1
Celkem MŠMT (Total MEYS)	**2**
EU	
7. Rámcový program EU - UOCHB spoluřešitel	1
Celkem EU (Total EU)	
*dalších 15 bylo doporučno k financování, ale již se nevešly do rozpočtu GAČR)	
*other 15 were recommended for funding, but could not be satisfied due to insuficient GAČR budget	

Grants 2015

GRANTOVÉ PROJEKTY ZAHÁJENÉ V ROCE 2015	
(GRANTS PROJECTS INITIATED IN 2015	
Agentura (Agency)	**Počet (#)**
GAČR - UOCHB - hlavní řešitel (principal investigator)	10 *
GAČR - UOCHB - postdoc	2
GAČR - UOCHB - spoluřešitel (co-investigator)	3
Celkem GAČR	**15**
MŠMT - Velké infrastruktury (Big infrastructures) - ELIXIR CZ	1
Celkem MŠMT	**1**
EU	
Horizon 2020 - UOCHB spoluřešitel (co-investigator)	1
Celkem EU	1
*dalších 27 bylo doporučno k financování, ale již se nevešly do rozpočtu GAČR	
*other 27 were recommended for funding, but could not be satisfied due to insuficient GAČR budget	

IT reorganization

- Integration of IT, Scientific Information Services and other services - a long-term strategic goal
  - Recommendations from the DAIN audit
  - Improved external and internal web pages
  - Electronic workstreams – Ordering reagents and services, Security, Monitoring entry, Vacations, Business trips, etc.
  - Bilingual English/Czech capabilities
- A new hire starting October 6, 2014
- Increased user support (Sokol, Svoboda, Barták)
- New organization in place from January 1, 2015

Financing

- Modified financing of Research Groups introduced in 2014
  - IOCB supports core size of Research Groups, additional group members must be financed from external sources

IOCB- Gilead

- Annual meeting of IOCB- Gilead Sciences Research Center (September 29-30, 2014 in Foster City)

- 4. květen 2017 – konec licenčních poplatků za prodej tenofoviru disoproxil fumarátu v důsledku ukončení patentu

- **May 4, 2017** - end of royalties from sales of tenofovir disoproxil fumarate due to patent expiration

ÚOCHB IOCB

2014

Ocenění zaměstnanci

Odměny a pocty

Awarded employees

Awards and Honors

Josef Michl

Hammond Award

Inter-American Photochemical Society

Cena George S. Hammonda

Životní přínos a klíčová úloha ve vývoji moderních fotochemických věd

George S. Hammond Award

Life contribution and a key role in the development of modern photochemical sciences

Pavel Hobza

Vysoce citovaný výzkumník

Thomson Reuters

Zařazen mezi horní 1% nejcitovanějších výzkumníků ve svém oboru – chemie

(jako jeden z pouhých dvou vědců z ČR – druhý byl Petr Pyšek za Environment/Ecology)

Ranked among the top 1% of the most cited researchers in their specific field – chemistry

(as one of the only two scientists from the Czech Republic – the other one being Petr Pysek for Environment/Ecology)

Jan Konvalinka (vlevo-links)

Karlova Universita

Jmenován **prorektorem** pro vědu

Rada vlády pro vědu, vývoj a inovace

Jmenován novým členem

Charles University

Appointed **Prorector** for Science

Government Council for Science, Development and Innovations

Appointed a new member

Zdeněk Havlas (vlevo-links)

Učená společnost

Jmenován 1. místopředsedou

Rada vlády pro vědu, vývoj a inovace

Znovujmenován členem

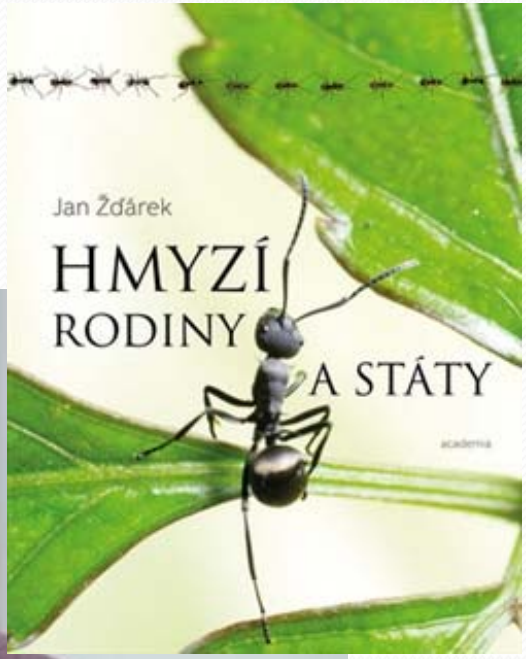
Learned Society

Appointed 1st Vicepresident

Government Council for Science, Development and Innovations

Reappointed member

Jan Žďárek



Nakladatelství Academia

Cena za knihu
„Hmyzí rodiny a státy“

Academia Publishing House

Award for the book
„Insect Families and States“

Wichterleho prémie - Wichterle Award

Akademie věd ČR The Czech Academy of Sciences

- Jakub Kaminský
- Milan Kožíšek
- Jan Řezáč

ACS Author Award

American Chemical Society

- Josef Michl

Nejcitovanější články publikované v časopisech ACS

Most cited articles published in ACS journals

Fulbright-Masaryk Stipend

Fulbright Commission

- Lubomír Rulíšek

Hostitelská instituce – Host institution

Stanford University

Fellowship J.E. Purkyně

Akademie věd ČR **The Czech Academy of Sciences**

- Kvido Stříšovský

  Výzkum v oblasti intramembránových proteas

  Research in intramembrane proteases

- Miloslav Polášek

  Výzkum v oblasti pokročilých molekulárních sond pro aplikace diagnostického zobrazování

  Research in advanced molecular probes for diagnostic imaging applications

Cena SIGMA-ALDRICH Award

- Jiří Kaleta

Za nejlepší přednášku na konferenci mladých vědců – Milovy, Devět skal

For the best presentation at the conference of young scientists – Milovy, Nine Rocks

Cena Karla Preise - Karel Preis Award

Česká chemická společnost Czech Chemical Society

- Renata Norková
- Jana Jaklová Dytrtová
- Václav Kašička

Nejlepší práce otištěná v ročníku Chemických listů

The best paper published in the annual volume of Chemické listy

ÚOCHB IOCB

Výhled do roku 2015

Outlook for 2015

Harmonogram stavby

- 1.etapa – dokončena

  Budova B, Garáže,
  Budova A – SV křídlo.

- 2. etapa

  Centrální část budovy A
  - Ukončení stavby – září 2015
  - Kolaudace – říjen 2015
  - Stěhování – listopad 2015

- 3. etapa

  Západní křídla budovy A
  - Podzim 2016

Construction timeline

- Stage 1 – completed

  Building B, Garages,
  Building A - NE wing

- Stage 2

  Central part of building A
  - Completed – September 2015
  - Final inspection – October 2015
  - Moving in – November 2015

- Stage 3

  West wing of building A
  - Fall of 2016

ÚOCHB IOCB 2015

- Hodnocení juniorských skupin
- Hodnocení skupin cíleného výzkumu

- EXPO 2015 Milano

- Evaluation of junior groups
- Evaluation of targeted research groups

Milan Drahoňovský

Nastavení čerpání sociálního fondu

Social Fund Usage Setup

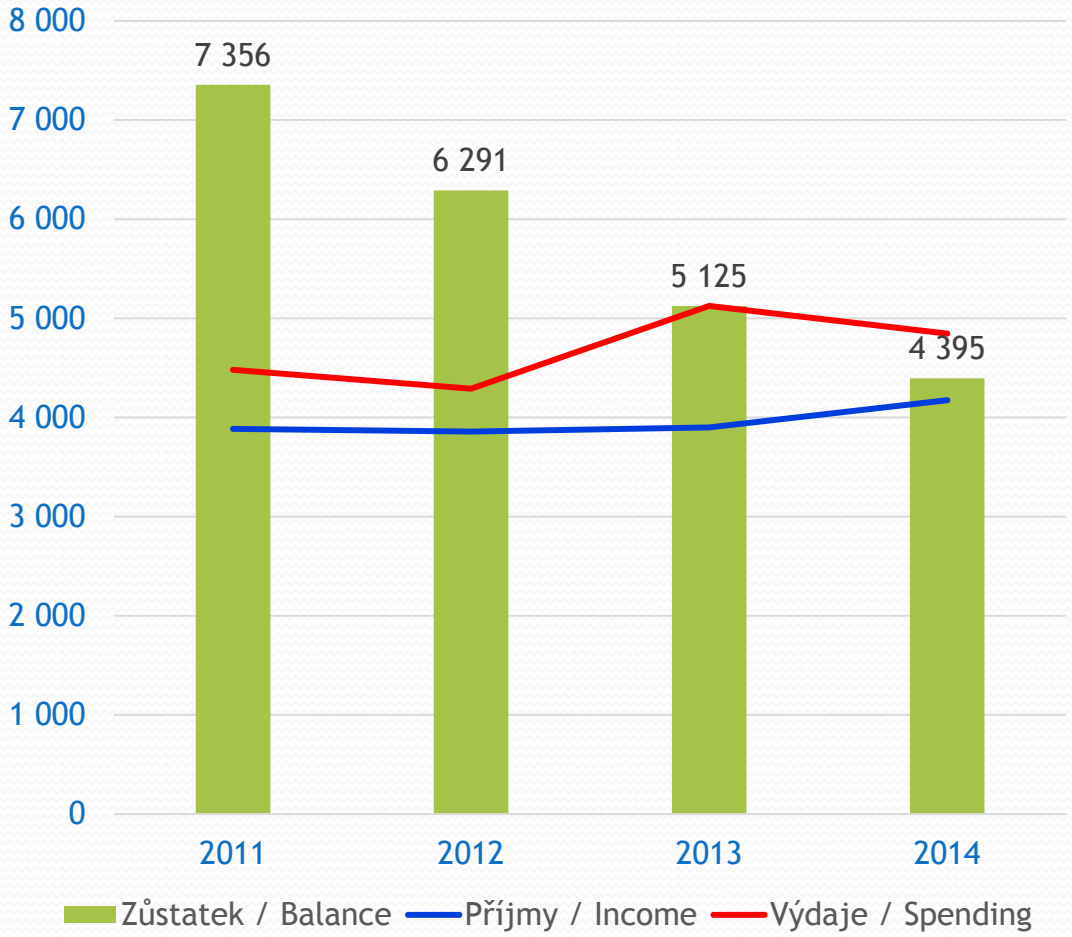
Sociální fond

- Smyslem sociálního fondu (SF) je **vytvoření pozitivního prostředí** v organizaci a tím zajištění podmínek pro provádění hlavní činnosti VVI.
- Zákonem definovaným zdrojem SF je základní příděl na vrub pracoviště ve výši **2 % ročního objemu nákladů na mzdy**, náhrady na mzdy a odměny za pracovní pohotovost.
- Využití SF je definováno ve vnitřní směrnici ústavu z roku 2014.

Social Fund

- The purpose of the Social Fund (SF) is to **create a positive environment in the organization**, thereby ensuring conditions for conducting the main PRI activities.
- By law, the defined source for SF corresponds to **2% of the annual cost of wages**, bonuses and other compensation at the workplace.
- Use of SF is defined in the internal guidelines of the Institute from 2014 .

Současný stav čerpání Sociálního Fondu ústavu (v tis. Kč)



The current status of Social Fund usage at IOCB (in thousands of CZK)

- Absolutní rozdíl poklesu zůstatku SF je 2.961 mil. Kč (- 40 %) mezi 2011 – 2014.
- Průměrný roční pokles zůstatku SF cca 1 mil. Kč.
- **Nerovnoměrné čerpání na zaměstnance.**

- The absolute difference is a decrease in the SF balance by 2,961 million CZK (- 40%) between 2011 – 2014.
- The average annual decline in the SF balance is about 1 million CZK.
- **Uneven usage of SF per employee.**

Vyrovnaný rozpočet SF, vyšší flexibilita a spokojenost zaměstnanců

- Pevně stanovený a odsouhlasený vyrovnaný roční rozpočet
- Rovnoměrné průměrné čerpání na zaměstnance ústavu
- Pevně stanovená nabídka na čerpání ze SF pro volbu jednotlivce

- **Implementace <u>zaměstnaneckých kont</u> (benefiční program).**

Balanced budget of SF, greater flexibility and employee satisfaction

- Fixed and approved balanced annual budget
- Equal average usage of SF per each institute employee
- A set menu for using SF based on an individual choice

- **Implementation of <u>employee accounts</u> (benefit program).**

Základní principy SF

- Roční příděl do SF cca 4 mil. Kč
- Počet FTE … 469
- Cca 0,8* mil Kč ponecháno na společné aktivity (např. vybavení pro zaměstnance, Mikuláš, Společné setkání bývalých zaměstnanců, výročí apod.)
- Zůstatek cca 3,2 mil. Kč
- **Zůstatek rozpočítán rovnoměrně na zaměstnance dle úvazku, příspěvek na roční čerpání ve výši cca 6 800 Kč** (při 100% pracovním úvazku) na rok
- Výši 6 800 Kč může zaměstnanec využít podle vlastní volby.

Basic principles of SF

- Yearly allocation to SF ~4 mil. CZK
- Number of FTE … 469
- Approx. 0.8 * million CZK left for common activities (e.g. equipment for employees, St.Nicholas' day, joint meeting of former employees, anniversaries, etc.)
- The balance of approx. 3.2 mil. CZK
- **The balance is equally distributed to employees based on their contract, resulting in approx. 6,800 CZK** for a 100% full time employee per year
- The employees can freely choose how to use their 6,800 CZK.

Poznámka:

* Objem prostředků pro společné aktivity může být diskutován / The budget for the commong activities could be discussed.

Nový přístup čerpání Sociálního Fondu

- Plán spuštění zaměstnaneckých kont od 1. 4. 2015 (Q2)
- Přizpůsobení interního systému na sledování zaměstnaneckých kont nebo nákup modulu (služby)
- Vyrovnaný rozpočet pro 2015
- Přepočítání rozpočtu (3/4 ročního rozpočtu pro rok 2015) SF na zaměstnance a vykrytí případných rozdílů z pozitivního zůstatku SF z minulých let.

New approach to use the Social Fond

- Plan to launch the employee accounts from 1. 4. 2015 (Q2)
- Adapting internal system to monitor employee accounts or purchase module (services)
- Balanced budget for 2015
- Recalculation of the SF budget (3/4 of the annual budget for 2015) per employee and coverage of any differences from the positive balance of SF from previous years.

Luboš Rulíšek

Doplňovací volby do Rady instituce

Supplementary Election to the Board of Institute

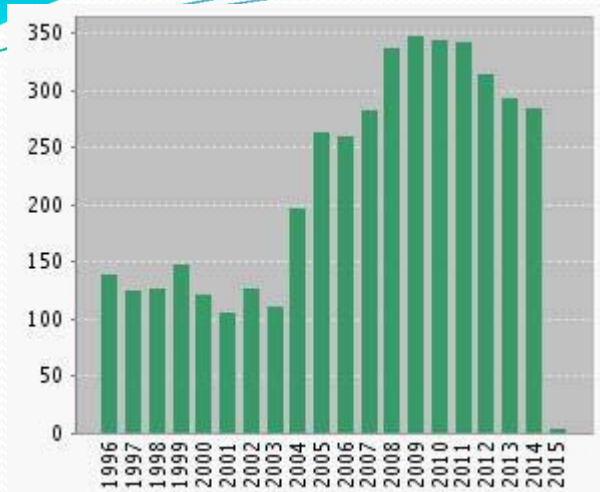
Back-up slides

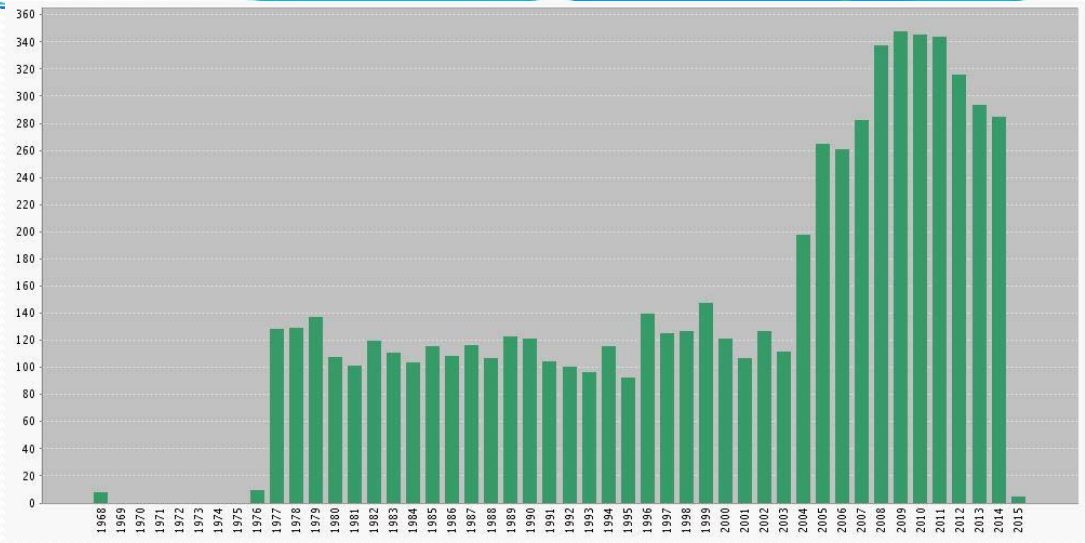
Comparison of IOCB with Other Chemical Institutes of AS CR

Papers in the impacted journals in 2011-2013; sorted by impact factors and divided Between the key (**in red**; the first or corresponding author is from the Institute) and other (**in blue**, the sum of all other chemistry institutes)

	3-5		5-7		7-10		10-20		>20	
2011-2013										
ÚOCHB	**201**	**116**	**78**	**45**	**10**	**11**	**27**	**10**	**9**	**5**
ÚFCH	**125**	**102**	**30**	**23**	**8**	**8**	**14**	**8**	**1**	**1**
ÚMCH	**65**	**56**	**21**	**30**	**6**	**5**	**1**	**3**	**0**	**1**
ÚACH	**35**	**22**	**4**	**5**	**0**	**1**	**1**	**2**	**0**	**0**
ÚCHP	**32**	**27**	**5**	**16**	**1**	**0**	**0**	**0**	**0**	**0**
	257	207	**60**	74	**15**	14	**16**	13	**1**	2

Web of Science -papers





Web of Science – IOCB citations