

14:00 **Registration**

15:50 **Opening**

## Session I

Bogumil Jeziorski

16:00 **Martin Krupicka** Mechanochemical indicators

16:40 **Simon Budzak** Excited state properties as a key to understand molecular probes

17:20 **Dana Nachtigallova** Excited states of polycyclic aromatic systems

17:40 **Marin Sapunar** Computation of many-electron wave function overlaps for photochemical studies

18:00 **Dinner**

20:00 **Poster Session A**



# Monday\_AM

## Session II

Miroslav Urban

08:20 **Michal Repisky** All-electron fully relativistic KS theory for solids based on the Dirac-Coulomb Hamiltonian and Gaussian-type functions

09:00 **Leticia González** Excited state dynamics of transition metal complexes

09:40 **Lukáš Félix Pašteka** Reuniting theory and experiment, the case study on gold

10:00 **Paweł Tecmer** Unconventional electronic structure methods in actinide chemistry

10:20 **Coffee Break**

## Session III

Peter Surjan

10:50 **Jiri Klimes** Towards an accurate theoretical description of molecular solids

11:30 **Ctirad Červinka** Towards reasonable ab initio sublimation pressures for molecular crystals

11:50 **Oleksandr Loboda** Fragment-based DFT methods for molecular crystals

12:10 **Lunch**



# Monday\_PM

## Session IV

Leticia Gonzáles

- |       |                             |   |
|-------|-----------------------------|---|
| 14:00 | <b>Alexandre Tkatchenko</b> | The promise and rise of machine learning in chemistry and physics                                     |
| 14:40 | <b>Peter Poliak</b>         | Thermodynamics of radical scavenging activity of selected carotenoids                                 |
| 15:00 | <b>Mario Vazdar</b>         | Arginine "magic": Guanidinium like-charge ion pairing from aqueous salts to cell penetrating peptides |
| 15:20 | <b>Miroslav Rubes</b>       | Theoretical description of CO adsorption in H-FER zeolite   |

15:40 **Coffee Break**

## Session V

Miroslav Medved'

- |       |                       |  |
|-------|-----------------------|--|
| 16:10 | <b>Michal Lesiuk</b>  | Approximate coupled-cluster schemes with singular-value decomposition of the triple excitations amplitudes     |
| 16:50 | <b>Tatiana Korona</b> | Energy and density partitioning as tools for investigations of intermolecular complexes - several case studies |
| 17:10 | <b>Szymon Śmiga</b>   | Approximate solution of CC equations: Application to the CCD method and non-covalent interacting systems       |
| 17:30 | <b>Ágnes Szabados</b> | Geminal PT based on the UHF wavefunction   |
| 17:50 | <b>Jan Novotny</b>    | Interpreting NMR parameters of metal complexes using relativistic DFT calculations                             |

18:10 **Dinner**

20:00 **Poster Session B**

# Tuesday

## Session VI

Stanisław Kucharski

08:20 **Tamás Szidarovszky** Rovibronic spectra of light-dressed molecules

09:00 **Georg Madsen** Phonon superscatterers

09:40 **Aurora Ponzi** Study of dynamical observables involved in photoionization process

10:00 **Ivan Čerkušák** Raman spectroscopic study of polysulfanes in natural fluid inclusions

10:20 **Coffee Break**

## Session VII

Jiri Pittner

10:50 **Örs Legeza** Coupled-cluster method tailored by tensor-network states in quantum chemistry

11:30 **Katharina Boguslawski** Tailored coupled cluster approaches to model strong correlation across the periodic table

11:50 **Ádám Margócsy** Multiple bond breaking with APSG based correlation methods

12:10 **Lunch**

13:30 **Excursion**

18:30 **Conference Dinner**



# Wednesday

## Session VIII

Anne-Marie Kelterer

08:40	<b>Robert Izsak</b>	Wave function methods for excited states and spectroscopic applications
09:20	<b>Robert Zalesny</b>	Nonempirical simulations of two-photon electronic absorption spectra of molecules in solution
10:00	<b>Stefan Varga</b>	Infinite lattice sums with Bloch phase factors

10:20 **Coffee Break**

## Session IX

Péter G. Szalay

10:50	<b>Dmitry Fedorov</b>	A new point of view on the van der Waals radius
11:10	<b>Michal Malček</b>	Theoretical study of Ru- and Mn-based coordination compounds with biological activity
11:30	<b>Ivana Niksic-Franjic</b>	Mechanisms and kinetics of charge transfer processes in aqueous reactions of free radicals

11:50 **Closing**

12:00 **Lunch & Departure**



# List of Posters

## Session A

A1	<b>Andrej Antalík</b>	Local pair natural orbital coupled clusters tailored by matrix product states
A2	<b>Andrej Antusek</b>	Nuclear magnetic moment of $^{209}\text{Bi}$ from new NMR experiments
A3	<b>Tarek Ayari</b>	Theoretical and dynamic study of malonaldehyde
A4	<b>Maria Barysz</b>	
A5	<b>A. Daniel Boese</b>	ZMP-SAPT: DFT-SAPT using ab initio densities
A6	<b>Jiri Brabec</b>	Domain-based local pair natural orbital version of Mukherjee's state-specific coupled cluster method
A7	<b>Jan Brandejs</b>	Hilbert space multireference coupled clusters tailored by matrix product states
A8	<b>Martin Breza</b>	On the Al=Al double bond in the $\text{LiAl}_2\text{H}_4^-$ cluster
A9	<b>Zlatko Brkljača</b>	Calculations of $\text{pK}_a$ value of lysine in biological membranes
A10	<b>Marek Štekláč</b>	Model study of the anticancer drug camptothecin
A11	<b>Denisa Cagardová</b>	DFT study of the effect of chemical modification on the electronic structure and drift mobilities of selected pentacene and bis-benzothiadiazole derivatives
A12	<b>Grygoriy Dolgonos</b>	Adjusting dispersion coefficients for the accurate DFTB+D3 treatment of structural and energetic properties of molecular crystals
A13	<b>Nađa Došlić</b>	Is visible fluorescence in non-aromatic peptidic chains possible?
A14	<b>Matus Dubecky</b>	Gaussian basis set saturation in fixed-node diffusion Monte Carlo
A15	<b>Philippe Durand</b>	Tilde transformation for quantum resonances
A16	<b>Roman Fanta</b>	Benchmark computations of infinite linear chain of HF molecules
A17	<b>Ewelina Grabowska</b>	Theoretical spectra of the HD-CO complex to guide the microwave measurements

## Session A

A18	<b>Ireneusz Grabowski</b>	Practical, accurate, cost- and implementation-free method ( $\Delta$ MP2-SCS(IP)) for the calculation of vertical ionization potentials
A19	<b>Jaroslav Granatier</b>	Benchmark CCSD(T)/CBS interaction energies of coinage metal atoms on benzene
A20	<b>Peter Grancic</b>	Molecular modelling of bioorganoclays
A21	<b>Robin Guttman</b>	HB49: How accurate is DFT?
A22	<b>Tomáš Hrivnák</b>	Interaction-induced electric properties of hydrated uracil molecule
A23	<b>Michał Chojecki</b>	Chiral resolution of the active pharmaceutical intermediates on the selected stationary phases
A24	<b>Miroslav Iliáš</b>	Theoretical study of molecular and adsorption properties of group 6, 7 and 8 heavy and super-heavy metal carbonyls
A25	<b>Katarzyna Jakubowska</b>	Relativistic four component DFT and CC calculations of potential energy curves of Zn <sub>2</sub> , Cd <sub>2</sub> and Hg <sub>2</sub> dimers
A26	<b>Wojciech Jankiewicz</b>	Failure of the dispersion-corrected density-functional theory for three-body intermolecular interactions.
A27	<b>Frantisek Karlicky</b>	Fluorographane C <sub>2</sub> FH: stable and wide band gap insulator with huge excitonic effect
A28	<b>Vladimír Kellö</b>	Calculations of electronic excited states of CsMo molecule
A29	<b>Anne-Marie Kelterer</b>	Theoretical Study on Fe(III) and Cu(II) complexes of 4-Quinazolinone in Water and DMF
A30	<b>Miroslav Kolos</b>	Adsorption of trichloroethylene on modified zero-valent nanoparticles of iron
A31	<b>Lukas Konecny</b>	Relativistic two- and four-component electron dynamics approach to chiroptical spectroscopies

## Session B

B1	<b>Magdalena Krzuś</b>	DFTB parametrization for intermolecular interactions
B2	<b>Martyna Krzyżowska</b>	Two- and three-body interaction energies from DLPNO-CCSD(T)
B3	<b>Aleksandra Lachmanska</b>	New theoretical approaches for strongly-correlated systems
B4	<b>Jakub Lang</b>	Perturbative triples correction to DLPNO-MkCCSD
B5	<b>Pengbo Lyu</b>	Theoretical investigation of COF stacking and effects on photocatalysis
B6	<b>Katarzyna Madajczyk</b>	Benchmarking database for open shell systems
B7	<b>Ján Matúška</b>	Formation of tungsten clusters
B8	<b>Miroslav Medved'</b>	Photoswitching mechanism of donor-acceptor Stenhouse adducts (DASAs): Theoretical aspects
B9	<b>Martin Michalík</b>	Theoretical prediction of electronic structure and drift mobilities of organic semiconductors
B10	<b>Eva Zsuzsanna Mihalka</b>	Convergence issues in Rayleigh-Schrodinger perturbation theory: The inverse boundary value problem
B11	<b>Wasif Baig Mirza</b>	Quantum chemical study of intersystem crossing between singlets and triplets of 6,7-dibromo-2-ethyl-1,3-dimethyl-4,4-difluoro-4-bora-3a,4a-diaza-s-indacene
B12	<b>Eva Muchova</b>	Electronic structure of electrolyte solutions
B13	<b>Artur Nowak</b>	Dissecting electron correlation effects in geminal-based wave function method
B14	<b>Ivana Paidarová</b>	The state-selected reactions of electronically excited oxygen ions with methane: the role of the spontaneous emission at the long distance region.
B15	<b>Tadeusz Pluta</b>	Dynamic polarizability of the thiophene dimer
B16	<b>Kyrylo Prokofiev</b>	Towards accurate calculations of adsorption energies
B17	<b>Ingrid Puškárová</b>	The electronic structure, UV/Vis transitions and CO <sub>2</sub> affinity of Ni(II)L macrocyclic complexes
B18	<b>Dorota Rutkowska-Zbik</b>	DFT modelling of V-containing BEA zeolite



## Session B

B19	<b>Hugo Semrád</b>	A quantum chemical study of the isomerization steps within acetylene bromoboration
B20	<b>Jan Simunek</b>	Thermochemical hierarchy of homodesmotic reactions extended for hydrocarbons containing heteroatoms
B21	<b>Zuzana Sochorová Vokáčová</b>	Enzyme activity of <i>Candida antarctica</i> lipase B in organic solvents
B22	<b>Marcin Stachowiak</b>	Theoretical studies on ground state and excited states of the NaLi molecule
B23	<b>Jakub Stošek</b>	Quantum chemical studies of acetylene bromoboration
B24	<b>Siba Suliman</b>	Reaction of CH <sub>2</sub> IOH with OH radical
B25	<b>Mateusz Szczygieł</b>	Theoretical description of the photoionization process
B26	<b>Sonia Taamali</b>	Thermochemistry of HIO <sub>2</sub> species and reactivity of iodic acid with chlorine atom: A computational approach
B27	<b>Michal Tarana</b>	Electron-molecule scattering in context of long-range Rydberg molecules
B28	<b>Miroslav Urban</b>	Crosslinking in polyethylene by Au and dispersion attractions
B29	<b>Barbora Venosova</b>	A comparison of theoretical and experimental electron structures. A N-O bond precedence in 3-alkoxy-4-methylthiazole-2(3H)-thione derivatives
B30	<b>Jin Wen</b>	An MS-CASPT2 calculation of the excited electronic states of an axial BODIPY dimer
B31	<b>Roman Witasek</b>	Interactions between dodecamers of hyaluronan and hyaluronan-like molecules with TSG-6 protein
A32	<b>Libor Veis</b>	Variational quantum algorithms for strongly correlated quantum chemistry