

# INSTITUTE OF CHEMISTRY SCIENCE AND REPORT DAY 22<sup>th</sup> May 2025

# Poster presentations:

#### 1. Anna J. Kiss-Szemán

Ligand binding Pro-miscuity of acylpeptide hydrolase

(Presented by: Faculty member/Post-doc)

#### 2. Szebasztián Szaniszló

Oxazolidine nature of the pseudoproline moiety

(Presented by: PhD candidate)

#### 3. Fruzsina Pilhál, Imre Jákli, Ernő Keszei, András Láng, András Perczel

Investigation of the -AsnGly- isomerization reaction in tetrapeptides by NMR spectroscopy and ab initio calculations

(Presented by: PhD candidate)

# 4. Márton Gadanecz, Zsolt Fazekas, Dóra K. Menyhárd, András Perczel

KRAS catalytic intermediates via a new NMR-driven protocol

(Presented by: PhD candidate)

# 5. <u>Ádám A. Kelemen</u>, Zsolt Fazekas, Dóra K. Menyhárd, András Perczel, Imre Jákli

Tracing the signatures of Acid-Catalyzed Amide Cis-Trans Isomerization in Globular Proteins (Presented by: PhD candidate)

#### 6. András Gombás, Zsuzsanna Mihálka, Péter Surján, Ágnes Szabados

The effect of orbital optimalization and correlation correction in spin-unrestricted geminal models (Presented by: MSc student)

#### 7. Illés Tamás

Hygroscopicity changes in the atmospheric aerosol of Budapest on special events (Presented by: BSc student)

#### 8. Attila Kardos, Imre Varga

Synthesis of amine-functionalized responsive nanogel particles

(Presented by: Faculty member/Post-doc)

#### 9. Nándor Papp, Lilla Csenge Szabó, Fanni Sebák, Andrea Bodor

ABNMR Research in the Analytical and BioNMR Laboratory

(Presented by: Faculty member/Post-doc)

#### 10. Fanni Sebák

Disordered proteins and fuzzy complexes: structural and dynamical characterization by NMR spectroscopy (Presented by: Faculty member/Post-doc)

#### 11. Nándor Papp

The Hateful Five Percent: cis-Pro47 as the Trigger of a Hidden p53–BAX Activation (Presented by: PhD candidate)

#### 12. Csenge Lilla Szabó

Protein diffusion in denaturing media and next to macromolecular crowding

#### 13. Gergő Szentpáli, Zsolt Péter Pákai

Medicine and NMR spectroscopy - from a student's perspective

(Presented by: MSc student)

#### 14. Péter Hollósy

Boundstate Vacuum Polarization

(Presented by: MSc student)

#### 15. Ayaki Sunaga

12D vibrational computation of methanol and search for enhanced parity violation effects in substituted methanol compounds

(Presented by: Faculty member/Post-doc)

#### 16. Ádám Nonn

Pair corrections to the no-pair Dirac-Coulomb(-Breit) energy of heliumlike systems

(Presented by: MSc student)

# 17. Kevin Zsolt Simon

99m Tc-PYP: a comprehensive investigation of its possible physiologically active structures and a preliminary study of its ATTR amyloid sensitivity

(Presented by: PhD candidate)

#### 18. Marlene Bosquez

Rovibrational quantum dynamics of simple van der Waals complexes

(Presented by: PhD candidate)

#### 19. <u>Barbara Keresztes</u>, Sándor Góbi, Anita Schneiker, György Tarczay

Cosmic-Ray-Driven Chemistry in the CH<sub>3</sub>CH<sub>2</sub>OH, NH<sub>3</sub>, and CH<sub>3</sub>CH<sub>2</sub>OH:NH<sub>3</sub> Interstellar Ice Analogs (Presented by: PhD candidate)

# 20. <u>Barbara Keresztes</u>, Sándor Góbi, István Pál Csonka, Gopi Ragupathy, Anita Schneiker, Gábor Bazsó, György Tarczay

Investigating the SiH<sub>4</sub> + H Reaction of Astrochemical Relevance

(Presented by: PhD candidate)

#### 21. Sándor Góbi, Barbara Keresztes, Anita Schneiker, György Tarczay

Hydrogen-atom-assisted thione—thiol tautomerization of thiourea derivatives in para-H2 matrix (Presented by: Faculty member/Post-doc)

# 22. Bence Fejes, Benedek Sajósi

Laboratory Generation and Spectral Analysis of Interstellar-Relevant Radicals Originating from Isopropanol

(Presented by: BSc student)

#### 23. Anita Schneiker

Astrochemical insights into the reaction of alanine and its deuterated forms with hydrogen atoms (Presented by: PhD candidate)

#### 24. Khaled Jaradat, Bence B. Mészáros, János Daru

Elucidating Chemical Reaction Mechanisms through Progressively Refined Quantum Chemical Approaches (Presented by: Faculty member/Post-doc)

#### 25. Bence B. Mészáros, Khaled Jaradat, Károly Kubicskó, János Daru

Understanding Organocatalyis: Computational Protocols for Complex Case Studies (Presented by: PhD candidate)

#### 26. Bence B. Mészáros, Noémi Gargya, Ádám Madarász, János Daru

PIMD-compatible ML Potentials from Classical Reference Simulations

#### 27. Bence B. Mészáros, András Szabó, János Daru

Short-range  $\Delta$ -Machine Learning: A cost-efficient strategy to transfer chemical accuracy to condensed phase systems

(Presented by: MSc student)

#### 28. Máté Kígyósi, János Daru

Accelerating CCMD: Benchmarking ab initio protocols for high-throughput cluster calculations (Presented by: MSc student)

#### 29. Csaba Hegedűs

Towards exploring protein interaction patterns in Prdx2 and in D27 proteins by crystallography (Presented by: PhD candidate)

#### 30. Máté Sulyok-Eiler

ACWF: exploring hot-spots of organization in polymorphic amyloid fibril structures (Presented by: PhD candidate)

#### 31. Márton Németh

Transition Metal-Catalyzed Ring Opening of [1.1.1]Propellane: Synthesis of 3-Methylenecyclobut-1-ene derivatives

(Presented by: BSc student)

#### 32. Dávid Papp

Investigation of Peptide Deamidation Using Cyclic Ion Mobility-Mass Spectrometry (Presented by: PhD candidate)

#### 33. Péter Soma Szakály

 $\overline{\text{Advantages of Alkali Metal Adduct Ion Formation in Cyclic Ion Mobility-Mass Spectrometry of Cyclodextrin Isomers}$ 

(Presented by: PhD candidate)

#### 34. Péter Soma Szakály

Application of Alkali Metal Adduct Ion Formation in Cyclic Ion Mobility Mass Spectrometric Analysis of Cyclodextrin Isomers

(Presented by: PhD candidate)

## 35. Dániel Fülöp, Éva Kiss, Gergő Gyulai

Fluidic Synthesis of Cationic Carbon Quantum Dots: Investigating Reaction Mechanism and Fluorescence Properties

(Presented by: Faculty member/Post-doc)

#### 36. Tamás Szidarovszky

Simulating the strong-field Fourier-transform spectra of cations

(Presented by: Faculty member/Post-doc)

#### 37. Lizett Fábián

Simulation of the vibrational spectra of diatomic cations in SURF spectroscopy

(Presented by: BSc student)

#### 38. Attila Richárd Herczegh

Katalitikus átalakítások vizsgálata biotenzid oldatokban

(Presented by: MSc student)

#### 39. Ádám Kapdos

Electrochemical decarboxylative borylation

(Presented by: MSc student)

#### 40. Bálint Nagy

Functionalized 2-(trifluoromethyl)buta-1,3-dienes derived from HFO gas

#### 41. Rihárd Sisa

Synthesis of Phenol-, and Tyrosine containing dipeptide-based Diaryloxy-ethenes (Presented by: PhD candidate)

### 42. Krisztina Csörgeiné Kurin, István Szalai, Miklós Orbán

High-amplitude pH oscillations in the  $S_2O_8^{2-}$  –  $S_2O_3^{2-}$  –  $Cu^{2+}$  –  $NH_4OH$  system (Presented by: Faculty member/Post-doc)

#### 43. Luca Szalay, Edina Kiss, Zoltán Tóth

Research Programme for Public Education Development of the Hungarian Academy of Sciences (Presented by: Faculty member/Post-doc)

#### 44. Dávid Péter Jelenfi

A Novel Approach to Molecular Electron Transport: Integrating Quantum Chemistry Embedding with the NEGF Framework (Presented by: PhD candidate)

#### 45. Zsolt Szakály

On the Faradaically Active Surface Area of Metal Foam Electrodes (Presented by: PhD candidate)

#### 46. Kristóf Ferentzi

Addressing sustainability challenges in peptide synthesis with flow chemistry and machine learning (Presented by: PhD candidate)

#### 47. László Horváth, Tibor Nagy, Tamás Turányi, Máté Papp

Fast optimization of combustion mechanisms through model and experimental data reduction (Presented by: PhD candidate)

#### 48. Ákos Veres-Ravai, István Gyula Zsély, Máté Papp, Tamás Turányi

Investigating the oxidation of dimethyl ether and dimethyl ether/hydrogen mixtures by chemical kinetic modeling

(Presented by: PhD candidate)

#### 49. András György Szanthoffer

Evaluating the performances of recent detailed combustion mechanisms against  $NH_3$  and  $NH_3/H_2$  experimental data

(Presented by: PhD candidate)

#### 50. János Kóth, <u>Márius Horváth</u>

Biodegradable composite thin layer for thermal and electrical protection (Presented by: PhD candidate)

#### 51. Erzsébet Várnagy, Gergő Tóth, Sándor Hosztafi, Milo Malanga, Szabolcs Béni, Ida Fejős

Enantioseparation of Xylopinine and Idelalisib by Cyclodextrin-Modified Capillary Electrophoresis and NMR Characterization of Host-Guest Complexes

(Presented by: PhD candidate)

#### 52. Adila Nazli

Bioactive metabolites from Chaerophyllum and Anthriscus Species (Presented by: PhD candidate)

#### 53. Daniel Bisericaru

Synthesis, Characterization, and Application of Cyclodextrin Derivatives Funcionalized with Natural Amino Acids