POSMOL 2025

XXII International Workshop on Low-Energy Positron and Positronium Physics
XXIV International Symposium on Electron-Molecule Collisions and Swarms

Thursday, August 7 – Sunday, August 10, 2025
Kunibiki Messe, Matsue-city, Japan

SCHEDULE

Thursday, August 7, 2025

Room B

5:00 PM – 8:00 PM

Registration & Welcome Reception

Friday, August 8, 2025

Room A

8:15 AM **Opening**

In Memoriam: *CHAIR: Yasuyuki Nagashima*

8:25 AM Stephen Buckman *Celebrating the life and science of Cliff Surko*

Plenary Session: *CHAIR: Jimena Gorfinkiel*

8:45 AM PL1: Ann E. Orel *Studies of dissociative recombination*

Joint Session: *CHAIR: Stephen Buckman*

9:30 AM J1: Sasa Dujko *Streamer discharges: From gaseous dielectrics to particle detectors and planetary atmospheres*

10:00 AM J2: Koji Michishio *Photodetachment spectroscopy of positronium negative ions*

10:30 AM – 11:00 AM Break

Parallel Session 11:00 AM – 12:30 PM

Room A

Electron Session: *CHAIR: Dragana Maric*

11:00 AM E1: Ana Isabel Lozano *Low-energy electron scattering with nitrogen oxides: new experimental insights from the magnetically confined electron beam system*

11:30 AM E2: Vaibhav S. Prabhudesai *Electron collision with molecular hydrogen*

12:00 PM E-HT1: Juraj Fedor *Velocity map imaging of dissociative electron attachment close to 0 eV*

12:15 AM E-HT2: Lucas Sigaud *Probing molecular geometrical rearrangement effects after ionization*

Room B

Positron Session: *CHAIR: Takuma Yamashita*

11:00 AM P1: Andres Reyes *Binding a positron to neutral atomic and molecular dimers*

11:30 AM P2: Sandra J. Ward Quintanilla *Electron-positronium scattering and the photodetachment of Ps^-*

12:00 PM P3: Soumen Ghosh *Probing resonant positron-molecule annihilations beyond fundamental modes*

12:30 PM – 2:00 PM Lunch

Room A

Joint Session: *CHAIR: Hajime Tanuma*

2:00 PM J3: Chris Greene *How to convert a body-frame scattering calculation into an accurate dissociative recombination amplitude*

2:30 PM J4: April Cridland Mathad *From trickle to torrent: the role cold positrons play in maximising antihydrogen production*

3:00 PM J5: Martin Cizek *Vibronic coupling in electron-molecule collisions and electron photodetachment*

3:30 PM – 4:00 PM Break

Parallel Session 4:00 PM – 5:30 PM

Room A

Electron Session: *CHAIR: Masashi Kitajima*

4:00 PM E-HT3: Paulo Limão-Vieira *SF_6 negative ion formation probed in electron transfer experiments*

4:15 PM E-HT4: Miloš Ranković *Detecting solvated electrons created by electron collisions with liquid micro-jets*

4:30 PM E-HT5: Yuta Endo *Energy loss spectroscopy of ionic liquids by electron impact*

4:45 PM E-HT6: Gorachand Das *Experimental evidence for dipole-supported state as doorway to dissociative electron attachment*

5:00 PM E-HT7: Daniel Bou Debes *Slit lenses in electron momentum spectroscopy*

Room B

Positron Session: *CHAIR: Koji Michishio*

4:00 PM P-HT1: Daisuke Yoshida *Positron binding properties in cage-structured water clusters*

4:15 PM P-HT2: Takuma Yamashita *Three-particle correlation in positronium ions and in positronium (anti)hydrides*

4:30 PM P-HT3: Naoki Kamiya *Radiative dissociation of positronium molecules in excited state*

4:45 PM P-HT4: Alessandra Souza Barbosa *Positron scattering by oxygen-containing molecules: ab-initio and model potential approaches via the Schwinger Multichannel method*

5:00 PM P-HT5: Joshua Machacek *Metastable helium atom production by positron impact*

5:30 PM *In front of Room A* Japanese Tea Ceremony

Poster Session 6:00 PM – 8:00 PM

6:00 PM ***Room A*** Poster Session

8:00 PM

Saturday, August 9, 2025

Room A

Plenary Session: *CHAIR: Masanori Tachikawa*

8:30 AM PL2: Márcio T. do N. Varella *Models for transient anions and positronic system in condensed phase*

Joint Session: *CHAIR: Roman Čurik*

9:15 AM J6: Fábris Kossoski *Towards highly accurate resonance energies in electron-molecule scattering*

9:45 AM J7: Nicolas Sisourat *ionsInteratomic coulombic electron capture: A journey through theory*

10:15 AM – 10:45 AM Break

Parallel Session 10:45 AM – 12:00 PM

Room A

Electron Session: *CHAIR: Kohki Satoh*

10:45 AM E3: Barbora Kocábková *Electron Induced Reactions in Isolated Molecules and in Clusters*

11:15 AM E-HT8: Dávid Hvizdoš *Comparing theoretical methods of electron molecular-ion scattering with a hydrogen-like toy model*

11:30 AM E-HT9: Haadi Umer *Convergent close-coupling calculations for electron scattering on LiH and Li_2*

11:45 AM E-HT10: Roman Čurík *Determination of electronic resonances by analytic continuation using barycentric formula*

Room B

Positron Session: *CHAIR: Akira Ishida*

10:45 AM P4: Yugo Nagata *Positronium diffraction experiment using a graphene target*

11:15 AM P-HT6: Riki Mikami *Studies on positronium transmission through graphene films*

11:30 AM P-HT7: Rezwan Ahmed *Development of a Low-Energy Positron Diffraction (LEPD) experimental station and quantitative surface structure analysis on metal surfaces*

11:45 AM P-HT8: Evans Edwin Javary *New results and future prospects of the positronium $1^3S \rightarrow 2^3S$ experiment*

12:00 PM – 1:45 PM Lunch

Plenary Session: *CHAIR: Paulo Limão-Vieira*

1:45 PM PL3: Sylwia Ptasinska *The Untold Story of Molecular Fragmentation by Electrons*

2:30 PM ***Room A*** Group Photo

Parallel Session 2:45 AM – 3:45 PM

Room A

Electron Session: *CHAIR: Yasuhiro Sakai*

2:45 PM E4: Dale Muccignat *Deep learning methods for determining electron and positron scattering cross-sections in condensed and gaseous phases*

3:15 PM E-HT11: Satoru Kawaguchi *Transport properties of electron swarms in SF_6 under RF electric fields*

3:30 AM E-HT12: Masamitsu Hoshino *Recent activities of Atomic, Molecular, and Sputtering Data Workshop Group in NIFS*

Room B

Positron Session: *CHAIR: Ken Wada*

2:45 PM P5: Dan Murtagh *A slow beam of antihydrogen atoms for spectroscopy of the ground-state hyperfine structure*

3:15 PM P-HT9: Masaki Nobuoka *Exploration of spin-selective interactions between chiral molecules and positrons*

3:30 PM P-HT10: Akira Ishida *Development of positronium formation material for Bose-Einstein condensation*

3:45 AM – 4:15 AM Break

Room A

Joint Session: *CHAIR: Dmitry Fursa*

4:15 PM J8: Monica Mendes *The impact of low energy electrons in the fragmentation of astrochemical relevant molecules*

4:45 PM J9: Gleb Gribakin *Similarity of the near-threshold cross sections for positronium formation and photoionization in polyatomic molecules*

5:15 PM J10: Pauline Comini *At the crossroads of GBAR: antiproton and hydrogen charge exchange reactions with positronium*

5:45 PM – 6:30 PM Bus tour to the **Yuushien Garden** (*for Conference Dinner*)

6:30 PM – 9:00 PM **Conference Dinner**

Sunday, August 10, 2025

Room A

Plenary Session: *CHAIR: Yugo Nagata*

9:00 AM PL4: Yasuhiko Sentoku *Positron generation and acceleration in a self-organized photon collider enabled by an ultraintense laser pulse*

Joint Session: *CHAIR: Yugo Nagata*

9:45 AM J11: Adam Deller *Positron transport and cooling in CF_4 in a magnetic dipole trap*

10:15 AM – 10:45 AM Break

Joint Session: *CHAIR: Sylwia Ptasinska*

10:45 AM J12: Gregory James Boyle *Positron annihilation rates in nobel gases: Sensitivity to scattering cross sections and positronium dynamics*

11:15 AM J13: Stephan Denifl *Low-energy electron collisions with molecules of biological interest: From single to microhydrated systems*

11:45 AM **Closing**

12:00 PM – 1:45 PM Lunch & Adjourn

POSTERS

The symbol * after the poster number indicates the candidate of trainees for the poster prizes.

1 Hisashi Abe *Reliable humidity measurement for controlling environmental conditions in experiments*

2 Rezwan Ahmed *Development of a Low-Energy Positron Diffraction (LEPD) experimental station and quantitative surface structure analysis on metal surfaces*

3 Micheal Amponsah *Harnessing positron annihilation spectroscopy for advancing renewable energy materials in Africa*

4* Miu Ashiba *Positron affinity in hydrocarbons and halogenated hydrocarbons: A theoretical analysis of its relationship with physical properties*

5* Haruto Baba *Theoretical study on positron-molecular complexes for graphene-like molecules*

6 Alessandra Souza Barbosa *Positron scattering by oxygen-containing molecules: ab-initio and model potential approaches via the Schwinger Multichannel method*

7 Daniel Bou Debes *Slit lenses in electron momentum spectroscopy*

8 Daniel Bou Debes *Electron- and UV-induced reactions in isolated and clustered benzonitrile*

9 Gregory James Boyle *On the drift-diffusion analysis of the Pulsed Townsend experiment*

10* Yusuke Chaki *A study of threshold photoelectron source using undispersed synchrotron radiation for differential cross section measurements in very-low-energy*

11 Roman Čurik *Determination of electronic resonances by analytic continuation using barycentric formula*

12* Gorachand Das *Experimental evidence for dipole-supported state as doorway to dissociative Electron Attachment*

13 Saša Dujko *Axisymmetric fluid streamer model with curvilinear electrodes in the AMReX Library*

14 Saša Dujko *Current waveform analysis in Monte Carlo simulation of an idealized pulsed-Townsend experiment*

15 Saša Dujko *Transport of electrons and the propagation of streamers in the atmosphere of K2-18b*

16* Yuta Endo *Energy loss spectroscopy of ionic liquids by electron impact*

17* Jamie M. Erak *Close-coupling approach to a model problem for resonant collisions of electrons with diatomic molecules*

18 Juraj Fedor *Velocity map imaging of dissociative electron attachment close to 0 eV*

19 Joshua Forer *Low-energy dissociative recombination of light diatomic ions*

20 Dmitry V. Fursa *Convergent close-coupling approach to electron-impact dissociative excitation and ionisation of H_3^+*

21 Jimena D. Gorfinkiel *Virtual photon exchange and electron transfer in Interparticle Coulombic Electron Capture (ICEC)*

22 Jimena D. Gorfinkiel *Fragmentation dynamics through geometrical distortion in low-energy electron attachment to CS_2*

23 Masamitsu Hoshino *Recent activities of atomic, molecular, and sputtering data workshop group in NIFS*

24 Dávid Hvizdoš *Comparing theoretical methods of electron molecular-ion scattering with a hydrogen-like toy model*

25 Oddur Ingólfsson *Dissociative electron attachment to pentafluorophenyl triflate, a potendial photo acid generator for chemically amplified extreme ultraviolet lithography resists*

26 Oddur Ingólfsson *Dissociative ionization of pentafluorophenyl triflate, a potendial photo acid generator for chemically amplified extreme ultraviolet lithography resists*

27 Akira Ishida *Development of positronium formation material for Bose-Einstein condensation*

28* Chihiro Ito *Towards the measurement of the absolute photodetachment cross sections of Ps^-*

29* Evans Edwin Javary *New results and future prospects of the positronium $1^3S \rightarrow 2^3S$ experiment*

30* Naoki Kamiya *Radiative dissociation of positronium molecules in excited state*

31 Satoru Kawaguchi *Transport properties of electron swarms in SF_6 under RF electric fields*

32 Rua Kimura *Mobility measurements of H_3^+ and D_3^+ ions in He gas at 77.3 K*

33* Gaku Kitajima *A new experimental apparatus for ultra-low-energy electron collision utilizing secondary electron beam*

34 Masashi Kitajima *Peak asymmetry in Feshbach resonance of Ne ($^2P_{3/2}$, $^2P_{1/2}$) by spin-polarized electron impact: application to spin polarimeter*

35 Paulo Limão-Vieira *Ultrafast electron transfer and vibronic coupling in molecular collisions with potassium*

36 Paulo Limão-Vieira *SF_6 negative ion formation probed in electron transfer experiments*

37 Joshua Machacek *Metastable helium atom production by positron impact*

38 Dragana Marić *Effective ionization coefficients in HFO1234yf and HFO1234ze(E)*

39 Riki Mikami *Studies on positronium transmission through graphene films*

40* Ana Beatriz Monteiro de Carvalho *O_2^+ production coming from CO_2 single-event electron impact*

41* Ana Beatriz Monteiro de Carvalho *The role of double ionization for the production of O^+ coming from CO_2 ionization by electron impact*

42* Aoi Murakawa *Experimental apparatus for measuring high-resolution differential cross sections with specified molecular orientation*

43* Takuto Nakazono *Theoretical analysis of positronic compounds of halogen molecular divalent anions*

44* Arata Neki *Associative ionization between muonic hydrogen and hydrogen atoms*

45 Masaki Nobuoka *Exploration of spin-selective interactions between chiral molecules and positrons*

46 Miloš Rankovic *Detecting solvated electrons created by electron collisions with liquid micro-jets*

47 Miloš Rankovic *Resonances and dissociative electron attachment in benzonitrile*

48* Rodrigo Rodrigues *Cyanide anion formation via DEA in nitrilarenes*

49* Rodrigo Rodrigues *The role of low energy electrons in EUVL tin-oxo photoresist proxies*

50* Rodrigo Rodrigues *Negative ion formation prediction using AI*

51* Rodrigo Rodrigues *The role of low energy electrons in hydrofluoroolefins F-Gases*

52 Yuhi Sada *Observation of the transmission of slow positrons through free-standing graphene films supported on TEM grid*

53 Lucas Sigaud *Probing molecular geometrical rearrangement effects after ionization*

54 Daniel Stephen Slaughter *Dynamics of dissociative attachment of electrons to simple organic molecules*

55* Karol Szymczyk *A geant 4 simulation of the positronium target cloud in the GBAR experiment*

56 Karin Takahashi *An isotope effect in dissociative ionization of hydrogen molecules*

57 Kazunari Takaya *A real-time gas monitoring device based on ion attachment - ion mobility spectrometry for working environments*

58 Hajime Tanuma *Isotope effect in mobility of HeH^+ and HeD^+ ions in He gas at 77.3 K*

59* Kiyomasa Tsuzuki *Elastic cross sections of tungsten hexafluoride molecules in 2.0 − 200 eV energy electron impact: Similarities with six fluorine containing molecules and evidence of F-atom like scattering*

60* Haadi Umer *Convergent close-coupling calculations for electron scattering on LiH and Li_2*

61 Sandra J. Ward *Variational calculations of low-energy positron and electron scattering from helium*

62 Sandra J. Ward *One- and two-photon detachment of the positronium negative ion*

63* Ashutosh Yadav *Investigation of positron scattering for fluorocarbons in plasma applications*

64 Takuma Yamashita *Three-particle correlation in positronium ions and in positronium (anti)hydrides*

65 Daisuke Yoshida *Positron binding properties in cage-structured water clusters*