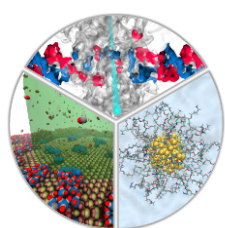


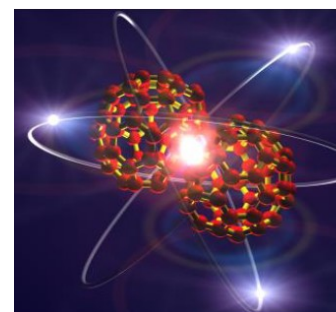
The Final Conference of the COST Action
*"Multiscale Irradiation and Chemistry
Driven Processes and Related Technologies"*

and

the 12th International Symposium
"Atomic Cluster Collisions"



COST Action CA20129
MultIChem



MultIChem-ISACC 2025

Heidelberg, Germany
July 14-18, 2025



Second Announcement

Scope

The final conference of the [COST Action CA20129 MultiChem](#) (“Multiscale Irradiation and Chemistry Driven Processes and Related Technologies”) and the [12th International Symposium “Atomic Cluster Collisions” \(ISACC\)](#) will be jointly organised under the title “**MultiChem-ISACC 2025 Conference**”.

The conference will be held on **July 14-18, 2025** in Heidelberg, Germany. It is co-organized by the [Heidelberg University](#) and the [MBN Research Center](#) (Frankfurt am Main, Germany).

The COST Action MultiChem has brought together experts from different disciplines, such as physics, chemistry, biology, and nanoscience, specialising in theoretical, experimental and computational multiscale modelling studies of irradiation-driven chemistry processes and phenomena involving complex molecular (including cluster) systems exposed to radiation.

The scope of MultiChem and its annual conferences is closely linked to the topical areas of the ISACC conference series.

A series of International Symposia “Atomic Cluster Collisions: structure and dynamics from the nuclear to the biological scale” started in 2003, and [eleven ISACC conferences have been held so far](#). The most recent ISACC conference was held in Hveragerði, Iceland, in July 2023.

The ISACC conference series promotes the growth and exchange of scientific information on the structure, dynamics and properties of complex atomic, molecular, cluster, nanoscopic and biological systems studied primarily by means of photonic, electronic and atomic collisions. Particular attention is paid to dynamical phenomena and many-body effects taking place in clusters, nanostructures, molecular and biological systems. These include problems of fusion and fission, fragmentation, collective electron excitations, phase transitions, radiation damage, and many others.

The joint MultiChem-ISACC 2025 conference will cover experimental, theoretical and applied aspects of atomic cluster physics and the above-mentioned topics. Particular attention will also be given to the use of advanced computational techniques and high-performance computing for studying the above-mentioned phenomena and effects. The links of the ISACC and MultiChem topics to novel and emerging technologies will be an important focus of the MultiChem-ISACC 2025 conference.

Finally, the conference will provide a platform for discussions on current research, technological challenges and related initiatives within the MultiChem and ISACC topical areas.

Topical Areas of ISACC & MultiChem:

- Structure and dynamics of atomic clusters and nanoparticles
- Structure and dynamics of biomolecules
- Reactivity and nanocatalysis
- Clustering in systems of various dimensionality and degrees of complexity
- Photon, electron and ion collisions with free atomic clusters and nanoparticles
- Radiation-induced phenomena with deposited metal clusters and nanoparticles, and nanoparticles placed in a molecular environment
- Photon, electron and ion collisions with biomolecules, molecular and biomolecular clusters
- Complex collision, radiative and fragmentation processes
- Clusters and biomolecules in external fields: electric, magnetic, laser etc.
- Cluster and biomolecular research with free-electron lasers
- Related technological applications

Important Dates

Distribution of the first announcement	November 29, 2024
Distribution of the second announcement	March 03, 2025
Distribution of the final announcement	June 15, 2025
Deadline for early-bird registration	May 01, 2025
Deadline for abstract submission	May 15, 2025

MultIChem-ISACC 2025 Program

The scientific program of MultIChem-ISACC 2025 will consist of interdisciplinary sessions including invited lectures, review talks and progress reports. A number of hot topic reports will be selected by the International Advisory Committee from the submitted abstracts. Other contributions will be presented in a poster session. Suggestions for possible candidates for invited speakers should be sent to the Chairs of the MultIChem-ISACC 2025 Conference.

The scientific sessions will be followed by the MultIChem Management Committee meeting on Friday, July 18 to discuss recent and upcoming activities of the Action.

Monday, July 14

08 ⁰⁰ – 09 ¹⁵	Participants registration
09 ¹⁵ – 09 ³⁰	MultIChem-ISACC 2025 Opening
09 ³⁰ – 18 ⁰⁰	Scientific sessions (presentations)
19 ⁰⁰ – 21 ⁰⁰	Welcome reception

Tuesday, July 15

09 ³⁰ – 18 ⁰⁰	Scientific sessions (presentations)
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Wednesday, July 16

09 ³⁰ – 16 ⁰⁰	Scientific sessions (presentations)
16 ³⁰ – 18 ⁰⁰	Poster session

Thursday, July 17

09 ³⁰ – 18 ⁰⁰	Scientific sessions (presentations)
19 ⁰⁰ – 22 ⁰⁰	Conference dinner

Friday, July 18

09 ³⁰ – 13 ⁰⁰	Scientific sessions (presentations)
13 ⁰⁰ – 13 ¹⁵	MultIChem-ISACC 2025 Closing
14 ³⁰ – 16 ⁰⁰	MultIChem Management Committee Meeting

Confirmed Speakers

Richard Amos, Department of Medical Physics and Biomedical Engineering, University College London, United Kingdom

Biological impact of spatial and temporal collision clustering in ion beam radiotherapy

Bobby Antony, Department of Physics, Indian Institute of Technology (ISM), Dhanbad, India

Electron and positron scattering from biomolecules

Ilko Bald, Institute of Chemistry, University of Potsdam, Germany

How to conduct low-energy electron-induced processes at atmospheric conditions using visible light

Sadia Bari, Deutsches Elektronen Synchrotron DESY, Hamburg, Germany

Probing biomolecular functional structures with X-rays

Marta Berholts, Department of Physics and Astronomy, Uppsala University, Sweden

Solvation effects on molecular excitation and decay dynamics

Florent Calvo, University Joseph Fourier, Grenoble, France

Shedding light onto an archetypal chemical reaction: formation of a non-covalent complex into helium nanodroplets

Stephan Denifl, Institute for Ion Physics and Applied Physics, University of Innsbruck, Austria

Interaction of free low-energy electrons with potential radiosensitizers

Alexander Dorn, Max Planck Institute for Nuclear Physics, Heidelberg, Germany
Electron collision induced dynamics in clusters consisting from noble gases or from organic bio-relevant molecules

Brendan Dromey, Queen's University Belfast, United Kingdom
Tracking dynamics for solvated electrons due to proton stopping in pristine H₂O in real time

Egor Evlyukhin, Institute of Electronic Structure & Laser (IESL-FORTH), Heraklion, Crete, Greece
Harnessing X-rays and high pressure: A new frontier in photochemistry

Martin Falk, Institute of Biophysics, Czech Academy of Sciences, Brno, Czech Republic
Chromatin: a key player in radiation-induced DNA damage and repair – New insights from micro- and nanoscale studies

Juraj Fedor, J. Heyrovský Institute of Physical Chemistry, Czech Academy of Sciences, Prague, Czech Republic
Understanding the complexity of electron-induced chemistry in bulk step by step

Sara Freitas, University of Porto, Portugal
Synergistic effect between photothermal and ionizing radiation therapies using plasmonic nanoparticles as photo-absorbing agents and radiosensitizers toward higher-efficiency colorectal cancer treatments

Franco Gianturco, Institute for Ion Physics and Applied Physics, University of Innsbruck, Austria
Negative ion chemistry among stars and clouds: Molecular processes in the interstellar medium and in cold trap models

Vincenzo Guidi, University of Ferrara, Italy
TBA

Michael Hausmann, Kirchhoff-Institute for Physics, Heidelberg University, Germany
Characteristic chromatin networks and their response to radiation, nanoparticle exposure or peritoneal dialysis

Shiv Khanna, Virginia Commonwealth University, Richmond, USA
Ligated metal chalcogenide clusters as novel catalysts

Jaroslav Kočíšek, J. Heyrovský Institute of Physical Chemistry, Czech Academy of Sciences, Prague, Czech Republic
Electron attachment to azoles and their clusters

Jozef Lengyel, Department of Chemistry, Technical University of Munich, Germany
Uptake and collision dynamics of molecules with hydrated acid clusters

Nigel Mason, University of Kent, Canterbury, United Kingdom
Flames as a chemical factory – Atoms, Molecules, Clusters and Surfaces united in action

Tommaso Mazza, European XFEL, Schenefeld, Germany
Coalescence dynamics of metal and oxide clusters probed by optical and x-ray lasers

Richard Palmer, Nanomaterials Lab, Swansea University, United Kingdom
2D and 3D clusters and arrays on surfaces

Alise Podelinska, Institute of Physics, University of Tartu, Estonia
Thermodynamic stability and melting behavior of ionic crystals: A case study of LiF

Thomas Pohl, Institute for Ion Physics and Applied Physics, University of Innsbruck, Austria
Breeding of size selected clusters and nanoparticles in highly charged helium droplets

Thomas Schlathöler, Zernike Institute for Advanced Materials, University of Groningen, the Netherlands
Photon and ion-induced dynamics in gas-phase DNA

Cécile Sicard-Roselli, Institut de Chimie Physique, University Paris Saclay, France
Are gold nanoparticles so inert under ionizing radiation?

Nicolas Sisourat, Sorbonne University, CNRS, Laboratoire Chimie Physique Matière et Rayonnement, Paris, France

Interatomic Coulombic Electron Capture-like processes at DESIREE

Andrey Solov'yov, MBN Research Center, Frankfurt am Main, Germany

TBA

Ilia Solov'yov, Institute of Physics, Carl von Ossietzky University, Oldenburg, Germany

TBA

Eric Suraud, Université Paul Sabatier, Toulouse, France

Some surprises and puzzles in the TDDFT description of irradiation of molecules

Petra Tegeder, Physikalisch-Chemisches Institut, Heidelberg University, Germany

Electronic properties of interfaces with functional molecules

Hidetsugu Tsuchida, Quantum Science and Engineering Center, Kyoto University, Japan

Experiment of irradiating a liquid film with MeV heavy ions

Ivo Utke, Empa – Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

The perspective of metal nanoprint purity: Small vs Large metalorganic molecules in FEBID

Alexey Verkhovtsev, MBN Research Center, Frankfurt am Main, Germany

Computational studies of radiation-induced phenomena in molecules and atomic clusters

Andrew Wheatley, Yusuf Hamied Department of Chemistry, University of Cambridge, United Kingdom

Understanding metal-organic framework densification: modulating the growth of colloidal nanoparticles and the implications for guest inclusion by monoliths

Beata Ziaja-Motyka, Center for Free-Electron-Laser Science, Deutsches Elektronen Synchrotron DESY, Hamburg, Germany

Structural rearrangement in X-ray irradiated water revealed by XFEL pump- XFEL probe experiment

Registration

The **early-bird** registration fee for the MultiChem-ISACC 2025 conference is **450 €** for all participants. After the early-bird registration deadline of **May 01, 2025** the conference fee will be **550 €**.

The registration fee includes coffee breaks, lunches, the conference reception, and the conference dinner.

There will be a separate fee for accompanying persons, which will cover the conference reception and dinner. Please contact the conference organisers (isacc.conference@gmail.com) for further information regarding accompanying persons.

The payment to the order of “MultiChem-ISACC 2025” can be made **by bank transfer** to

Bank Account Name:	MBN Research Center gGmbH
Bank Name:	Deutsche Bank
Branch Address:	Hauptstr. 561462 Koenigstein Germany
IBAN:	DE15500700240137588000
BIC:	DEUTDEDBFRA

Please quote your **NAME** and **MultiChem-ISACC** on the transfer. Please ensure there are no charges to the organisers. If you need an invoice for the payment or want to pay with a credit card, please send a short email to isacc.conference@gmail.com.

Conference Venue

The MultIChem-ISACC 2025 conference will be held at the [International Academic Forum Heidelberg \(IWH\)](#), an interdisciplinary centre for academic exchange affiliated to the Heidelberg University. The address of the venue is [Hauptstraße 242, 69117 Heidelberg](#).



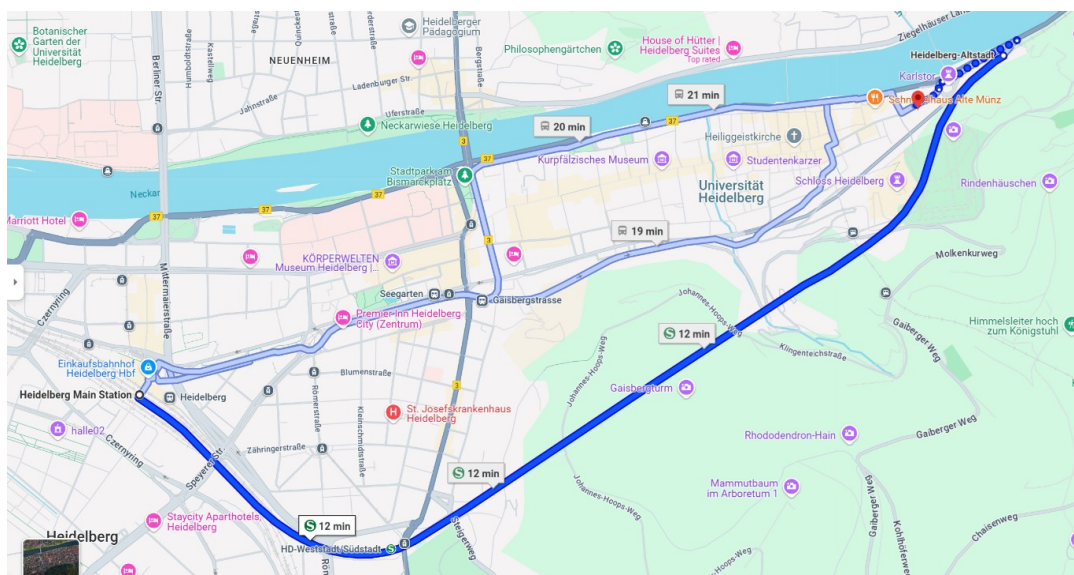
Heidelberg is located about 80 km south of Frankfurt and about 20 km south-east of Mannheim, a major hub on the German high-speed rail network with connections to many European cities, including Berlin, Munich, Cologne, Paris, Amsterdam, Basel, and many others. Heidelberg is directly accessible from Frankfurt and Mannheim by regional trains of Deutsche Bahn. For information, see [the website of Deutsche Bahn](#).

Heidelberg is one of Germany's recognised centres of science and is home to several internationally renowned research institutions. Heidelberg University, founded in 1386, is the oldest university in Germany. The city has also been a centre for the arts, particularly literature, for centuries, and it was designated a "City of Literature" by the UNESCO's Creative Cities Network. Heidelberg was the seat of government of the former Electorate of the Palatinate and is a popular tourist destination due to its romantic cityscape, including [Heidelberg Castle](#), the Baroque [old town](#), and the [Philosophers' Walk \(Philosophenweg\)](#) trail with scenic views of the old town and the castle.

Travel Information

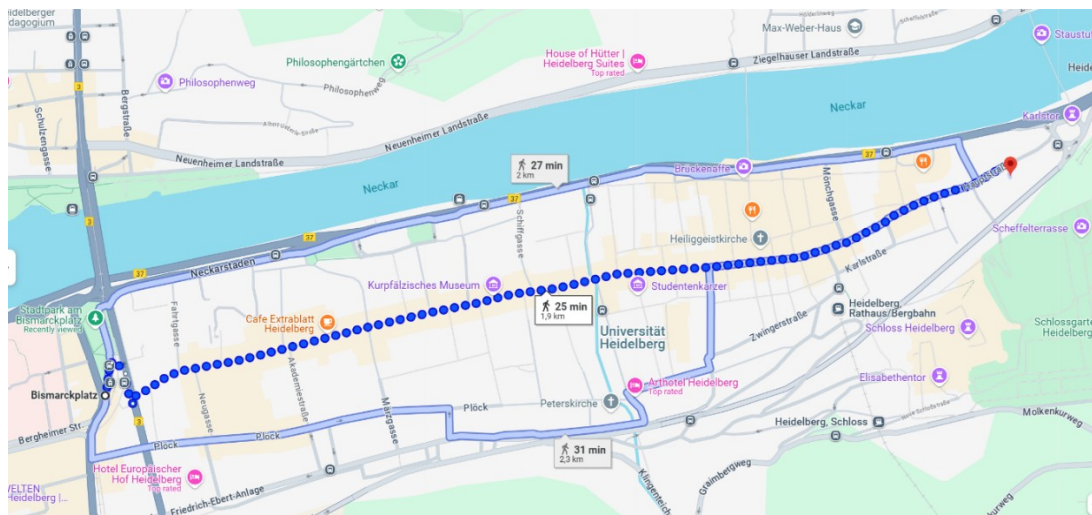
From the Heidelberg main station (**Heidelberg Hbf**), the conference venue can be reached by the following options (see the maps below):

- Take the S-Bahn S1, S2 or S5 of [S-Bahn RheinNeckar](#) to the station "Heidelberg-Altstadt" and walk from there to the venue (approx. 500 m / 7 min walk).



- Take Tram 21 in the direction "Handschuhsheim Hans-Thoma-Platz". Exit on the station "Seegarten" (3rd stop) and walk ca. 100 m to the bus stop "Gaisbergstraße". Take there Bus 31 in the direction "Altstadt" and walk from there to the venue (approx. 500 m / 7 min walk).

- Take a tram (e.g. Tram 5) or a bus (e.g. Bus 32) going from Heidelberg Hbf to Bismarckplatz and walk from there along Hauptstraße to the venue (approx. 2 km / 20-25 min walk through the historical Old Town).



The map of the public transport in Heidelberg can be downloaded [here](#).

Accommodation

There are several hotels in the Heidelberg Old Town within walking distance from the conference venue, such as [Hotel Hackteufel](#), [Hotel am Kornmarkt](#), [Hotel am Schloss](#), and [Hotel am Rathaus](#).

Outside the Old Town, possible lodging options would be [Leonardo Hotel City Center](#) (on Bergheimer Straße) or [ibis Heidelberg Hauptbahnhof](#) (directly at the Heidelberg main station).

Many other hotels and apartments are within walking distance of the conference venue and spread across the city. These lodging options can be booked e.g. via [booking.com](#) or [airbnb.com](#).

As Heidelberg is a popular tourist destination, **we strongly recommend that participants book their accommodation as soon as possible.**

Financial support via COST

The MultiChem COST Action provides financial support to reimburse MultiChem members – participants of the conference for their expenses related to their participation in the conference. Detailed information about the COST reimbursement rules can be found in the [Annotated Rules for COST Actions](#) (see Section A1-3.1 “Travel reimbursement rules”, pp. 82-90).

The number of participants to be reimbursed is limited by the MultiChem budget allocated for this meeting. In order to be reimbursed, you must receive an official invitation through e-COST indicating that you are eligible for the reimbursement. Invitations will be sent to conference participants who have completed the registration on the conference website and paid the registration fee.

When arranging your travel and accommodation, please consider the following rules (see the Annotated Rules for COST Actions for complete and detailed information):

- Any transport you take in your country (airplane, train, bus, car...) is reimbursed based on the supporting documents provided (tickets for flights, trains and buses; proof of distance for car travel, e.g. by Google maps). Taxi, car rental, fuel and parking expenses are not eligible.
- Your stay in Germany should be covered under the [flat-rate Daily Allowance \(DA\)](#). The DA is intended to cover accommodation, meals and transport in the host country. No receipts will be required.
- The maximum DA rate that can be claimed is calculated according to the actual number of days you attend the meeting (max. 3 days), as confirmed by your signature on the official attendance list for each day of the meeting, plus one day.
- On travel days, the DA is based on departure and arrival times (see pp. 83-84 of the Annotated Rules for COST Actions).

Official Invitation and Visa

Conference participants are advised to check the passport and visa requirements for travel to Germany well in advance.

Organizing Committee

- Andrey Solov'yov (MBN Research Center, Germany) – **Co-Chair**
- Michael Hausmann (Heidelberg University, Germany) – **Co-Chair**
- Irina Solovyeva (MBN Research Center, Germany)
- Alexey Verkhovtsev (MBN Research Center, Germany)

MultiChem-ISACC 2025 International Advisory Committee

- Andrey V. Solov'yov (MBN Research Center, Frankfurt, Germany) – **IAC Chair**
- Catherine Bréchnac (Laboratoire Aime Cotton, CNRS, France)
- Michel Broyer (University of Lyon, France)
- Jean-Patrick Connerade (Imperial College London, United Kingdom)
- Francesco Gianturco (University of Innsbruck, Austria)
- Michael Hausmann (Heidelberg University, Germany)
- Bernd Huber (Centre Interdisciplinaire de Recherche Ions Lasers, CIRIL - GANIL, France)
- Julius Jellinek (Argonne National Laboratory, USA)
- Shiv Khanna (Virginia Commonwealth University, USA)
- Nigel Mason (University of Kent, United Kingdom)
- Thomas Möller (Technical University of Berlin, Germany)
- Richard Palmer (Swansea University, United Kingdom)
- Jefferson Shinpaugh (East Carolina University, Greenville, USA)
- Eric Suraud (Université Paul Sabatier, France)

Contact Information

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Conference Web Page

Information on the MultiChem-ISACC 2025 conference and the registration will be available soon on the web portal of the ISACC conference series, <https://www.isacc-portal.org/>.

MultiChem-ISACC 2025 Conference e-mail

isacc.conference@gmail.com