# The Eight International Conference
# *"Dynamics of Systems on the Nanoscale"*
# and
# the Third Conference of the COST Action
# *"Multiscale Irradiation and Chemistry Driven Processes and Related Technologies"*

DYSON

COST Action CA20129
MultIChem

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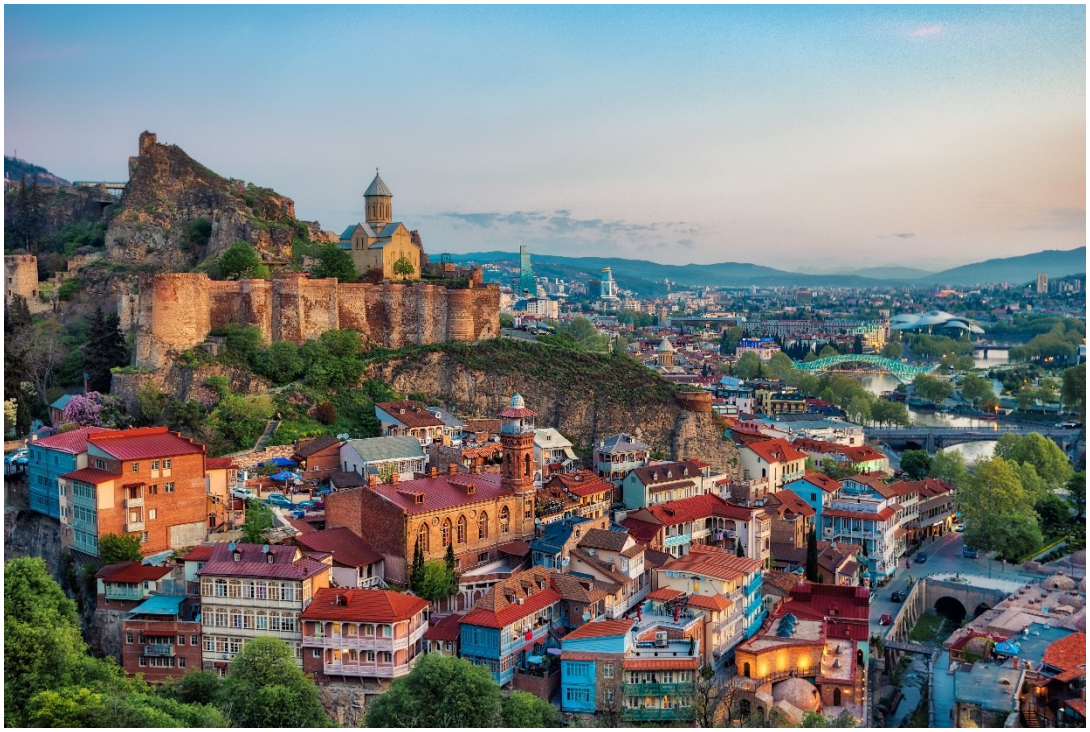
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

## DySoN-MultIChem 2024

Tbilisi, Georgia
April 08-12, 2024



## First Announcement

## Scope

The Eight International Conference "Dynamics of Systems on the Nanoscale" (DySoN) and the 3rd Annual Conference of the COST Action CA20129 "Multiscale Irradiation and Chemistry Driven Processes and Related Technologies" (MultIChem) will be organized jointly under the title "DySoN-MultIChem 2024 Conference".

The DySoN-MultIChem 2024 Conference will take place on **April 08-12, 2024** in Tbilisi, Georgia. It is co-organized by the Tbilisi State University (Tbilisi, Georgia) and MBN Research Center (Frankfurt am Main, Germany).

DySoN is an interdisciplinary conference series covering a broad range of topics related to the Dynamics of Systems on the Nanoscale. The DySoN conference series was launched in 2010, and seven DySoN conferences have been held so far. The DySoN conferences promote the growth and exchange of interdisciplinary scientific information on the structure formation and dynamics of animate and inanimate matter on the nanometer scale. There are many examples of complex many-body systems of micro- and nanometer scale size exhibiting unique features, properties and functions. These systems may have very different nature and origins, e.g. atomic and molecular clusters, nanostructures, ensembles of nanoparticles, nanomaterials, biomolecules, biomolecular and mesoscopic systems. A detailed understanding of the structure and dynamics of these systems on the nanoscale is a difficult and fundamental task, the solution of which is necessary for nano- and biotechnologies, materials science and medicine.

Although mesoscopic, nano- and biomolecular systems differ in their nature and origin, a number of fundamental problems are common to all of them: What are the underlying principles of self-organization and self-assembly of matter at the micro- and nanoscale? Are these principles classical or quantum? How does function emerge at the nano- and mesoscale in systems of different origins? What criteria govern the stability of these systems? How do their properties change as a function of size and composition? How are their properties altered by their environment? Seeking answers to these questions is at the core of the interdisciplinary field of Meso-Bio-Nano (MBN) Science that lies at the intersection of physics, chemistry and biology.

The scope of the MultIChem conference is closely linked to the topical areas of the DySoN conference series. Annual MultIChem conferences bring together experts from physics, chemistry, biology, and nanoscience, specializing in the theoretical, multiscale computational modeling and experimental studies of irradiation-driven chemistry processes involving complex molecular systems exposed to radiation.

The joint DySoN-MultIChem 2024 Conference will cover experimental, theoretical and applied aspects of all the topics mentioned above. Particular attention will be devoted to dynamical phenomena and many-body effects taking place in various MBN systems on the nanoscale. They include problems of structure formation; fusion and fission; collision and fragmentation; surfaces and interfaces; collective electron excitations; reactivity; nanoscale phase and morphological transitions; irradiation-driven transformations of complex molecular systems and biodamage, channeling phenomena, and many more. The utilization of advanced computational techniques and high-performance computing for studying the aforementioned phenomena and effects will also be discussed. Links of the DySoN and MultIChem topics to novel and emerging technologies will be an important focus of the DySoN-MultIChem 2024 Conference.

## Topical Areas of DySoN & MultIChem:

- Structure and dynamics of molecules, clusters and nanoparticles
- Cluster and biomolecular ensembles, composite systems
- Clustering, self-organization, phase and morphological transitions on the nanoscale
- Nanostructured materials, surfaces and interfaces
- Reactivity and nanocatalysis
- Electron and spin transport in molecular systems
- Collision and radiation processes involving nano- and biomolecular systems; fusion, fission, fragmentation
- Radiation-induced chemistry
- Irradiation-driven transformations, damage and fabrication of MesoBioNano systems
- Propagation of particles through media
- Biomedical and technological applications of radiation
- Related technologies: novel light sources, controlled nanofabrication, functionalized materials, nanocatalysis etc.

## Important Dates

| | |
|---|---|
| Distribution of the first announcement | November 01, 2023 |
| Distribution of the second announcement | February 15, 2024 |
| Distribution of the final announcement | March 20, 2024 |
| Deadline for early-bird registration | March 01, 2024 |
| Deadline for abstract submission | March 01, 2024 |

## DySoN-MultIChem 2024 Program

The scientific program for DySoN-MultIChem 2024 will consist of interdisciplinary sessions, which will include invited lectures, review talks and progress reports. A number of hot topic reports will be chosen by the International Advisory Committee from the submitted abstracts. Other contributions will be presented in a poster session. Suggestions about possible candidates for invited speakers should be sent to the Chairpersons of the DySoN-MultIChem 2024 Conference. The list of invited and confirmed speakers will be distributed with the second announcement.

The scientific sessions will be followed by the MultIChem Management Committee meeting on Friday, April 12 to discuss further activities of the Action.

### *Sunday, April 07*

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|---|---|
| $16^{00} – 18^{00}$ | Participants registration |
| $19^{00} – 22^{00}$ | Welcome reception |

### *Monday, April 08 (DySoN-related sessions)*

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|---|---|
| $09^{15} – 09^{30}$ | **DySoN-MultIChem 2024 Opening** |
| $09^{30} – 11^{00}$ | **Morning session I** |
| $11^{00} – 11^{30}$ | Coffee break |
| $11^{30} – 13^{00}$ | **Morning session II** |
| $13^{00} – 14^{30}$ | Lunch |
| $14^{30} – 16^{00}$ | **Afternoon session I** |
| $16^{00} – 16^{30}$ | Coffee break |
| $16^{30} – 18^{00}$ | **Afternoon session II** |

### *Tuesday, April 09 (DySoN-related sessions)*

| | |
|---|---|
| $09^{30} – 11^{00}$ | **Morning session I** |
| $11^{00} – 11^{30}$ | Coffee break |
| $11^{30} – 13^{00}$ | **Morning session II** |
| $13^{00} – 14^{30}$ | Lunch |
| $14^{30} – 16^{00}$ | **Afternoon session I** |
| $16^{00} – 16^{30}$ | Coffee break |
| $16^{30} – 18^{00}$ | **Afternoon session II** |

### *Wednesday, April 10 (MultIChem-related sessions)*

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|---|---|
| $09^{30} – 11^{00}$ | **Morning session I** |
| $11^{00} – 11^{30}$ | Coffee break |
| $11^{30} – 13^{00}$ | **Morning session II** |
| $13^{00} – 14^{30}$ | Lunch |

| | |
|---|---|
| $14^{30} – 16^{00}$ | **Afternoon session I** |
| $16^{00} – 16^{30}$ | Coffee break |
| $16^{30} – 18^{00}$ | **Poster session** |

### *Thursday, April 11 (MultIChem-related sessions)*

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|---|---|
| $09^{30} – 11^{00}$ | **Morning session I** |
| $11^{00} – 11^{30}$ | Coffee break |
| $11^{30} – 13^{00}$ | **Morning session II** |
| $13^{00} – 14^{30}$ | Lunch |
| $14^{30} – 16^{00}$ | **Afternoon session I** |
| $16^{00} – 16^{30}$ | Coffee break |
| $16^{30} – 18^{00}$ | **Afternoon session II** |
| $19^{30} – 22^{00}$ | Conference dinner |

### *Friday, April 12 (MultIChem-related sessions)*

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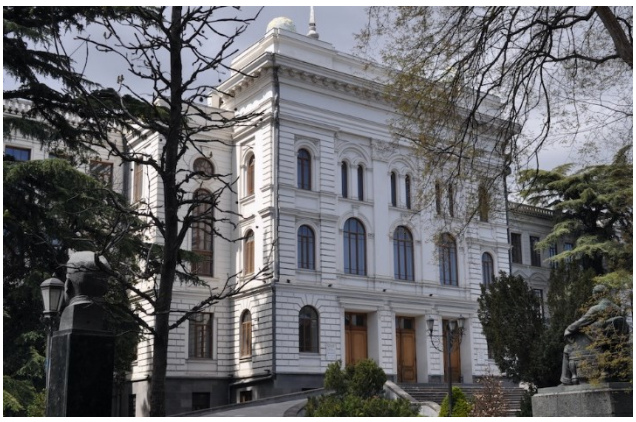
|---|---|
| $09^{30} – 11^{00}$ | **Morning session I** |
| $11^{00} – 11^{30}$ | Coffee break |
| $11^{30} – 13^{00}$ | **Morning session II** |
| $13^{00} – 13^{15}$ | **DySoN-MultIChem 2024 Closing** |
| $13^{15} – 14^{30}$ | Lunch |
| $14^{30} – 16^{00}$ | **MultIChem Management Committee Meeting** |

### *Saturday, April 13 – Conference excursion*

A ½-day excursion for conference participants is provisionally planned for Saturday, April 13. Details will be announced with the second announcement.

## Conference Venue and Travel Information

The Conference will be held at Tbilisi State University (see the photo to the right), the oldest university in Georgia and the Caucasus region.



Tbilisi is one of the leading tourist destinations in the region, offering exquisite cityscapes; a mix of local Georgian, Byzantine, Neoclassical, Art Nouveau, Middle Eastern, and Soviet architecture; national museums and galleries; cultural attractions; historical landmarks; and exceptional, traditional Georgian cuisine along with a wide range of international restaurants. The city is well-known as a melting pot of cultures and a diverse metropolis with a palette of attractions.

Tbilisi International Airport (TBS) is located about 18 kilometers southeast of the city center. The airport is a hub for the national carrier Georgian Airways. The airport is served by approximately 30 airlines providing roughly 30 destinations to/from Tbilisi, including flights to Amsterdam, Athens, Barcelona, Beijing, Berlin, Brussels, Düsseldorf, Istanbul, London, Milan, Munich, Paris, Prague, Riga, Vienna, and Warsaw.

Detailed travel information and further information on how to reach the conference venue will be circulated with the second announcement.

## Registration

The **early-bird** participation fee for the DySoN-MultIChem 2024 conference is **400 €** for regular participants and **350 €** for undergraduate and PhD students. After the early-bird registration deadline of **March 01, 2024** the conference fee will amount **500 €** for regular participants and **400 €** for undergraduate and PhD students.

| | **Early-bird fee (before March 01, 2024)** | **Late fee (after March 01, 2024)** |
|---|---|---|
| **Regular participants** | 400 € | 500 € |
| **PhD students** | 350 € | 400 € |

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 the conference dinner and also lunches upon request. Please contact the conference organizers (dyson.conference@gmail.com) for further information regarding accompanying persons.

The payment to the order of "DySoN-MultIChem 2024" can be made **by bank transfer** to

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|---|---|
| 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 **DySoN-MultIChem** on the transfer. Please ensure there are NO charges to us. If you need an invoice for the payment or want to pay with a credit card, please send a short email to dyson.conference@gmail.com.

## Reimbursement of the travel expenses

The MultIChem COST Action provides financial support to reimburse MultIChem members – participants of the conference for their travel expenses. 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. 84-90).

The number of participants to be reimbursed will be 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. Priority in reimbursement will be given to participants of the whole conference. After the meeting, you will be required to fill in your online travel reimbursement request (OTRR) through the link you will find in the invitation email.

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.
- For the flight ticket: it must be a return and economy class ticket from the country of your primary affiliation (as registered in e-COST) to the country of the meeting.
- Your stay in Tbilisi 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 of the MultIChem-related part of the conference), 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 p. 85 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 Georgia well in advance. For invitation requests please contact Professor Revaz Shanidze (Tbilisi State University); see the contact information below.

## DySoN-MultIChem 2024 International Advisory Committee

- Andrey V. Solov'yov (MBN Research Center, Frankfurt am Main, Germany) **- IAC Chair**
- Ilko Bald (University of Potsdam, Germany)
- Catherine Bréchignac (Laboratoire Aime Cotton, CNRS, Orsay, France)
- Michel Broyer (University of Lyon, France)
- Jean-Patrick Connerade (Imperial College London, London, UK)
- Martin Falk (Institute of Biophysics of the Czech Academy of Sciences, Brno, Czech Republic)
- Franco Gianturco (The University of Innsbruck, Austria)
- Vincenzo Guidi (University of Ferrara, Italy)
- Julius Jellinek (Argonne National Laboratory, Argonne, Illinois, USA)
- Shiv Khanna (Virginia Commonwealth University, Richmond, USA)
- Nigel Mason (University of Kent, Canterbury, UK)
- Harald Plank (Graz University of Technology, Graz, Austria)
- Kate Ricketts (University College London, UK)
- Thomas Schlathölter (University of Groningen, The Netherlands)
- Jefferson Shinpaugh (East Carolina University, Greenville, USA)
- Ilia Solov'yov (Carl von Ossietzky University, Oldenburg, Germany)

## Organizing Committee

- Andrey Solov'yov (MBN Research Center, Germany) – **Co-Chair**
- Revaz Shanidze (Tbilisi State University & Kutaisi International University, Georgia) – **Co-Chair**
- Zaal Machavariani (Tbilisi State University & Kutaisi International University, Georgia)
- Nigel Mason (University of Kent, Canterbury, UK)
- Irina Solovyeva (MBN Research Center, Germany)
- Alexey Verkhovtsev (MBN Research Center, Germany)

## Contact Information


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Website: https://www.tsu.ge/en
https://www.kiu.edu.ge/


## DySoN Conference Web Page

Updated information on the DySoN-MultIChem 2024 conference is available at www.dyson-conference.org.

## DySoN-MultIChem 2024 Conference e-mail

dyson.conference@gmail.com