International Conference
"Dynamics of Systems on the Nanoscale"

DySoN 2023

Villa Lanna
Prague, Czech Republic
April 24-26, 2023

FIRST ANNOUNCEMENT

Scope

The Seventh International Conference "Dynamics of Systems on the Nanoscale" (DySoN 2023) will take place on **April 24-26, 2023**, in Villa Lanna, Prague, Czech Republic. It is co-organized by the University of Kent (Canterbury, United Kingdom) and MBN Research Center (Frankfurt am Main, Germany).

The DySoN Conference will be followed by the 2nd Annual Conference of the COST Action CA20129 "Multiscale Irradiation and Chemistry Driven Processes and Related Technologies" (MultIChem), which will be held on April 26-28 at the same venue. Therefore, the DySoN Conference participants will have a unique opportunity to participate in both events. For the details on the **financial support**, see below Section *MultIChem 2023 Conference.*

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 six 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 a new interdisciplinary field of Meso-Bio-Nano (MBN) Science that lies at the intersection of physics, chemistry and biology.

Experimental, theoretical, computational and applied aspects of the aforementioned problems will be discussed at the DySoN 2023 Conference. 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. Links of the DySoN topics to novel and emerging technologies will be an important focus of the conference.

Finally, DySoN 2023 will provide a platform to host discussions about current research, technological challenges and related initiatives within the Topical Areas of the DySoN conference series.

Topical Areas of DySoN:

- 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, 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, etc.

Important Dates

Distribution of the first announcement	November 01, 2022
Distribution of the second announcement	February 01, 2023
Deadline for early-bird registration	March 01, 2023
Deadline for hotel reservation	March 01, 2023
Deadline for abstract submission	April 01, 2023

DySoN 2023 Scientitic Program

The scientific program for DySoN 2023 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 DySoN 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 2023. The list of invited speakers will be distributed with the second announcement.

Monday, April 24

$08^{00} – 09^{15}$	Participants registration
$09^{15} – 09^{30}$	**DySoN 2023 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**
$19^{00} – 22^{00}$	Welcome reception

Tuesday, April 25

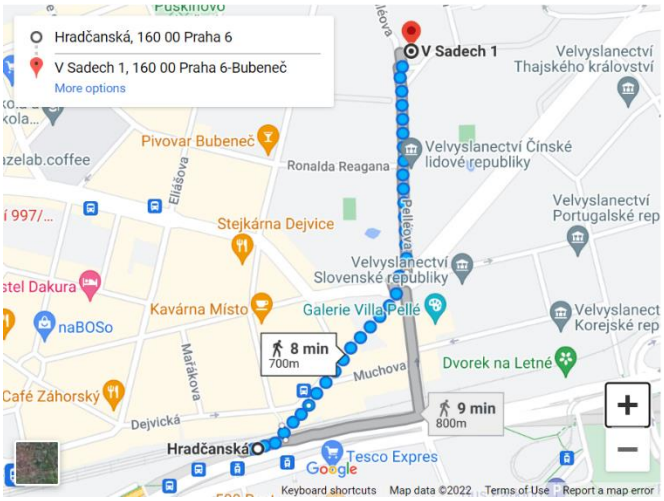
$09^{30} – 11^{00}$	**Morning session I**
$11^{00} – 11^{30}$	Coffee break
$11^{30} – 13^{00}$	**Morning session II**
$13^{00} – 14^{30}$	Lunch
$14^{30} – 16^{00}$	**Afternoon session I**
$16^{00} – 16^{30}$	Coffee break
$16^{30} – 18^{00}$	**Poster session**

Wednesday, April 26

$09^{30} – 11^{00}$	**Morning session I**
$11^{00} – 11^{30}$	Coffee break
$11^{30} – 13^{00}$	**Morning session II**
$13^{00} – 13^{15}$	**DySoN 2023 Closing**

Conference Venue and Travel Information

DySoN 2023 will be held in Vila Lanna (V Sadech 1, 160 00 Prague 6), the conference center of the Czech Academy of Sciences located in Prague. The conference venue is located within the walking distance from the metro station Hradčanská (Prague metro line A).



The conference venue is well connected with Prague public transport. For more information, please visit the Prague public transport website: https://www.dpp.cz/en.

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

Registration

The **early-bird** participation fee for the DySoN 2023 conference is **300 €** for regular participants and **250 €** for undergraduate and PhD students. After the early bird registration deadline of **March 01, 2023** the conference fee will amount **400 €** for regular participants and **350 €** for undergraduate and PhD students.

	Early-bird fee (before March 01, 2023)	**Late fee (after March 01, 2023)**
Regular participants	300 €	400 €
PhD students	250 €	350 €

The registration fee includes access to the conference hall, poster session, coffee breaks, lunches, and the book of abstracts.

The payment to the order of "DySoN 2023" 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 **DySoN** 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.

Accommodation

Accommodation in 27 rooms is possible directly in the Villa Lanna. Conference participants can book accommodation directly with the Villa Lanna at recepce@vila-lanna.cz and quote "DySoN". The rooms will be reserved until March 01, 2023 and will then be released, so please book early.

Alternative options for accommodation:
There are a number of hotels, B&Bs, and apartments within walking distance of the meeting venue. These lodging options can be booked via booking.com or airbnb.com.

DySoN 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)
- 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)
- Jefferson Shinpaugh (East Carolina University, Greenville, USA)
- Ilia Solov'yov (Carl von Ossietzky University, Oldenburg, Germany)
- Eugene Surdutovich (Oakland University, Rochester, Michigan, USA)

Organizing Committee

- Andrey Solov'yov (MBN Research Center, Germany) - **Co-Chair**
- Nigel Mason (University of Kent, United Kingdom) - **Co-Chair**
- Irina Solovyeva (MBN Research Center, Germany)
- Alexey Verkhovtsev (MBN Research Center, Germany)

Sponsors

The conference will be held under the auspices of the following sponsors:

- MBN Research Center, Frankfurt am Main, Germany
- University of Kent, Canterbury, United Kingdom
- H2020-MSCA-RISE Project "N-Light"
- H2020-MSCA-RISE Project "RADON"
- HORIZON EUROPE EIC-PATHFINDER Project "TECHNO-CLS"

MultIChem 2023 Conference

Participants of DySoN 2023 are highly encouraged to participate at the MultIChem 2023 conference. Participants of MultIChem 2023 will receive financial support to reimburse their travel to Prague and local accommodation expenses. The further information can be found here.

Contact Information

Prof. Dr. Andrey V. Solov'yov
DySoN 2023 Co-Chair
MBN Research Center gGmbH
Altenhöferallee 3
60438 Frankfurt am Main
Germany
Phone: +49 (0)69 34875600
E-mail: solovyov@mbnresearch.com
Website: www.mbnresearch.com

Professor Nigel J. Mason, OBE
DySoN 2023 Co-Chair
School of Physical Sciences
University of Kent
Canterbury, CT2 7NH
United Kingdom
Phone: +44 (0)1227 823321
E-mail: N.J.Mason@kent.ac.uk
Website: kent.ac.uk/physical-sciences

DySoN Conference Web Page

Updated information on the DySoN 2023 conference is available at www.dyson-conference.org.

DySoN 2023 Conference e-mail

dyson.conference@gmail.com