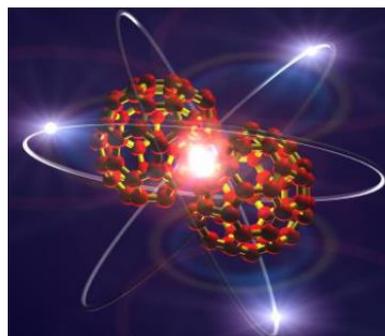


The Sixth International Conference
"Dynamics of Systems on the Nanoscale"
and
The Tenth International Symposium
"Atomic Cluster Collisions"



DySoN-ISACC 2021

Regina Elena Hotel
Santa Margherita Ligure, Italy
October 18-22, 2021



FIRST ANNOUNCEMENT

Scope

The Sixth International Conference “[Dynamics of Systems on the Nanoscale](#)” (DySoN) and the tenth International Symposium “[Atomic Cluster Collisions](#)” (ISACC) will be organized jointly under the title “**DySoN-ISACC 2021 Conference**”.

The DySoN-ISACC 2021 Conference will take place on **October 18-22, 2021** in Santa Margherita Ligure, Italy. It is co-organized by the [University of Ferrara](#) (Ferrara, Italy), [University of Kent](#) (Canterbury, United Kingdom) and [MBN Research Center](#) (Frankfurt am Main, Germany).

A series of International Symposia “Atomic Cluster Collisions: structure and dynamics from the nuclear to the biological scale” started in 2003, and nine ISACC conferences have been [held so far](#). The ISACC series promotes the growth and exchange of scientific information on the structure, properties and dynamics of complex nuclear, atomic, molecular, cluster, nanoscopic and biological systems studied primarily by means of photonic, electronic and atomic collisions. Most of the ISACC conferences were satellites of the International Conferences on Photonic Electronic and Atomic Collisions (ICPEAC). In light of the Covid-19 pandemic the [ICPEAC XXXII Conference](#) scheduled for July 2021 was postponed to 2023. Despite this, the ISACC International Advisory Committee decided to organize the Tenth ISACC Symposium in 2021 as a joint meeting with the DySoN 2021 conference.

The “Dynamics of Systems on the Nanoscale” conference has been built upon the ISACC series reflecting a need for an interdisciplinary conference covering a broader range of topics than just atomic cluster collisions, related to the Dynamics of Systems on the Nanoscale. The DySoN conference series was launched in 2010 and five 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 origin, 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 in 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 origin? 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 that lies at the intersection of physics, chemistry and biology, a field now entitled Meso-Bio-Nano (MBN) Science.

The joint DySoN-ISACC 2021 Conference will cover experimental, theoretical and applied aspects of all the aforementioned topics. Particular attention will be devoted to dynamical phenomena and many-body effects taking place in various MBN systems on the nanoscale, which 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, irradiation-induced biodamage, channeling phenomena, construction of novel light sources, 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 ISACC topics to novel and emerging technologies will be an important focus of the DySoN-ISACC 2021 Conference.

Finally, DySoN-ISACC 2021 will provide a platform to host discussions about current research, technological challenges and related initiatives within the Topical Areas of DySoN and ISACC Conference Series.

Topical Areas of DySoN and ISACC:

- Structure and dynamics of molecules, clusters and nanoparticles
- Cluster and biomolecular ensembles, composite systems
- Clustering, self-organization, phase and morphological transitions on the nanoscale
- Clustering in systems of various degrees of complexity
- Nanostructured materials, surfaces and interfaces
- Cluster structure and dynamics on a surface
- Reactivity and nanocatalysis
- Electron and spin transport in molecular systems
- Collision and radiation processes, fusion, fission, fragmentation
- Electron-, photon- and ion-cluster collisions
- Collision processes with biomolecules
- Radiation-induced chemistry
- Irradiation-driven transformations, damage and fabrication of MesoBioNano systems
- Propagation of particles through media
- Clusters and biomolecules in external fields: electric, magnetic, laser etc.
- Cluster and biomolecular research with Free Electron Lasers
- Biomedical and technological applications of radiation
- Related technologies: novel light sources, controlled nanofabrication, functionalized materials, etc.

Important Dates

Distribution of the first announcement	February 01, 2021
Distribution of the second announcement	April 30, 2021
Distribution of the third announcement	July 30, 2021
Deadline for early-bird registration	July 30, 2021
Deadline for hotel reservation	September 01, 2021
Deadline for abstract submission	September 15, 2021

DySoN-ISACC 2021 Program

Monday, October 18 (DySoN-related sessions)

8 ⁰⁰ – 14 ⁰⁰	Participants registration
09 ¹⁵ – 09 ³⁰	DySoN-ISACC 2021 Opening Vincenzo Guidi, Nigel J. Mason and Andrey V. Solov'yov
09 ³⁰ – 11 ⁰⁰	Morning session I: Dynamics of systems on the nanoscale
11 ⁰⁰ – 11 ³⁰	Coffee break
11 ³⁰ – 13 ⁰⁰	Morning session II: Structure and dynamics of molecules, clusters and nanoparticles
13 ⁰⁰ – 14 ³⁰	Lunch
14 ³⁰ – 16 ⁰⁰	Afternoon session I: Irradiation-driven processes and technologies involving Meso-Bio-Nano systems
16 ⁰⁰ – 16 ³⁰	Coffee break
16 ³⁰ – 18 ⁰⁰	Afternoon session II: Radiation-induced chemistry
19 ⁰⁰ – 22 ⁰⁰	Welcome reception

Tuesday, October 19 (DySoN-related sessions)

9 ³⁰ – 11 ⁰⁰	Morning session I: Interaction of radiation with biomolecular systems: mechanisms and applications
11 ⁰⁰ – 11 ³⁰	Coffee break
11 ³⁰ – 13 ⁰⁰	Morning session II: Interaction of radiation with bio-systems: mechanisms and applications

13 ⁰⁰ – 14 ³⁰	Lunch
14 ³⁰ – 16 ⁰⁰	Afternoon session I: Interaction of radiation with bio-nano systems: mechanisms and applications
16 ⁰⁰ – 16 ³⁰	Coffee break
16 ³⁰ – 18 ⁰⁰	Poster session

Wednesday, October 20 (DySoN-related sessions)

9 ³⁰ – 11 ⁰⁰	Morning session I: Propagation of particles through media
11 ⁰⁰ – 11 ³⁰	Coffee break
11 ³⁰ – 13 ⁰⁰	Morning session II: Coherence and radiation processes in irradiated targets
13 ⁰⁰ – 14 ³⁰	Lunch
14 ³⁰ – 16 ⁰⁰	Afternoon session I: Design and practical realization of novel gamma-ray crystal-based light sources
16 ⁰⁰ – 16 ³⁰	Coffee break
16 ³⁰ – 18 ⁰⁰	Afternoon session II: Collision and radiation processes, fusion, fission, fragmentation
19 ⁰⁰ – 22 ³⁰	Conference dinner

Thursday, October 21 (ISACC-related sessions)

9 ³⁰ – 11 ⁰⁰	Morning session I: Collisions with atomic clusters and biomolecules
11 ⁰⁰ – 11 ³⁰	Coffee break
11 ³⁰ – 13 ⁰⁰	Morning session II: Cluster-molecule interactions, reactivity and nanocatalysis
13 ⁰⁰ – 14 ³⁰	Lunch
14 ³⁰ – 16 ⁰⁰	Afternoon session I: Electron and photon cluster collisions
16 ⁰⁰ – 16 ³⁰	Coffee break
16 ³⁰ – 18 ⁰⁰	Afternoon session II: Ion-cluster collisions

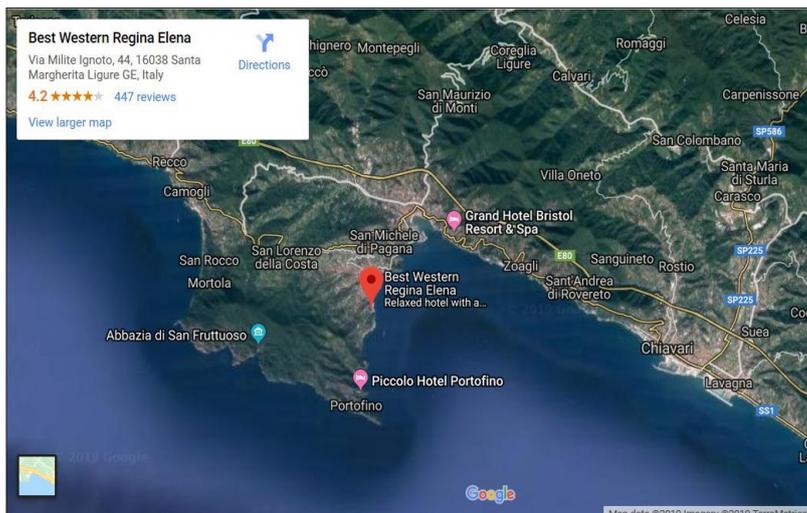
Friday, October 22 (ISACC-related sessions)

9 ³⁰ – 11 ⁰⁰	Morning session I: Cluster and biomolecular research with Free Electron Lasers
11 ⁰⁰ – 11 ³⁰	Coffee break
11 ³⁰ – 13 ⁰⁰	Morning session II: Clusters and biomolecules in external fields: electric, magnetic, laser, etc.
13 ⁰⁰ – 14 ³⁰	Lunch
14 ³⁰ – 16 ⁰⁰	Afternoon session I: Clustering in systems of various degrees of complexity
16 ⁰⁰ – 16 ³⁰	Coffee break
16 ³⁰ – 18 ⁰⁰	Afternoon session II: Cluster structure and dynamics on a surface
18 ⁰⁰ – 18 ¹⁵	Final Discussion and DySoN-ISACC 2021 Closing

Conference Venue and Travel Information

The Conference will be hosted by [Best Western Hotel Regina Elena](#), Lungomare Milite Ignoto 44, 40128 Santa Margherita Ligure, Italy. The hotel is located on the seafront that connects **Santa Margherita Ligure to Portofino**, among the **Regional Natural Park** and the **Tigullio Gulf** and the **Marine Protected Area** of Portofino.

Santa Margherita Ligure is a municipality in the Italian region Liguria, located about 35 kilometers southeast of Genoa, in the area traditionally known as Tigullio. The town is known for Castello di Santa Margherita Ligure, built by the Republic of Genoa in 1550 as a defense against the increasing attacks of North African pirates, as well as for Villa Durazzo - a complex that includes two patrician villas, a 16th-century castle and a 17th-century park.



The information on how to reach the conference venue can be found [here](#). The hotel is located about 35 km away from the Genoa Airport, 150 km from the Pisa Airport and about 220 km from Milan-Malpensa and Milan-Bergamo airports. Santa Margherita Ligure train station is operated by Trenitalia, see [here](#) for prices and schedule. The venue can also be reached by car from A12 highway (exit Rapallo).

Detailed information on how to reach the conference venue will be circulated closer to the conference dates.

Financial support

A limited number of bursaries (300 Euros each) will be provided by the Sir John and Lady Mason Academic Trust for Early Career Researchers defined as Masters students doing research projects, PhD students and early postdocs (up to 3 years after PhD). Recipients of bursaries must have an abstract accepted either as oral or poster presentation. Applications should be sent to dyson.conference@gmail.com with copy of submitted abstract(s) before September 01, 2021.

Reduced registration fee (450 € (early-bird) / 550 € (late) for the whole DySoN-ISACC conference) will be offered to the members of [the Virtual Institute of Nano Films \(VINF\)](#).

Best poster prize for Early Career Researchers

Thanks to one of our sponsors, Springer Verlag, we are organizing a competition for the best poster prize for Early Career Researchers. The prize will consist on both a certificate and an economic reward.

Topical Issue of the European Physical Journal D

A Topical Issue “Dynamics of Systems on the Nanoscale (2021)” will be launched in the [European Physical Journal D: Atomic, Molecular, Optical and Plasma Physics](#). The main scope of this topical issue will be to present recent advances and perspectives in this highly interdisciplinary field of modern research. It will include regular articles, as well as review and colloquium papers.

Submission to this Topical Issue will be opened to the entire research community working in the DySoN and ISACC topical areas and will not be restricted to the participants of the DySoN-ISACC 2021 Conference. All conference participants are encouraged to submit their novel results to this Topical Issue.

Further information will be available on the conference website soon.

Registration

The number of rooms reserved at the hotel for conference participants is limited. We advise the participants to register for the conference and the hotel at the earliest convenience.

The **early-bird** participation fee for the whole DySoN-ISACC 2021 conference is **500 €** for regular participants and **400 €** for undergraduate and PhD students. After the early bird registration deadline of **July 30, 2021** the conference fee will amount **600 €** for regular participants and **450 €** for undergraduate and PhD students.

	Early-bird fee (regular/students)	Late fee (regular/students)
DySoN-related sessions only (Oct. 18-20)	350 € / 300 €	450 € / 350 €
ISACC-related sessions only (Oct. 21-22)	300 € / 250 €	400 € / 300 €
Whole conference (Oct. 18-22)	500 € / 400 €	600 € / 450 €

The conference fee will cover the book of abstracts, coffee breaks, lunches, the conference reception, and the conference dinner.

The fee for accompanying persons is **100 €**, which includes the conference reception and the conference dinner. Optionally, accompanying persons can also book lunches for the price of 35 € per lunch.

The payment to the order of “DySoN-ISACC 2021” 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-ISACC** 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

Please book accommodation directly with the [Best Western Hotel Regina Elena](#) and quote “DYSON” to book either (i) a single room for 55€ per night, or (ii) a double room for single use for 69€ per night, or (iii) a double/twin room for 40€ per night per person. There is also a supplement of 30€ per room per night for a double/twin room with balcony and sea view. The rooms will be reserved until September 01, 2021 and will then be released, so please book early.

Official Invitation and Visa

Conference participants are advised to check the passport and visa requirements for travel to Italy well in advance. For invitation requests please contact Professor Vincenzo Guidi (University of Ferrara), see the contact information below.

DySoN-ISACC 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)
- Bernd Huber (Centre Interdisciplinaire de Recherche Ions Lasers, CIRIL - GANIL, Caen, France)
- Julius Jellinek (Argonne National Laboratory, Argonne, Illinois, USA)
- Shiv Khanna (Virginia Commonwealth University, Richmond, USA)
- Nigel Mason (University of Kent, Canterbury, UK)
- Thomas Möller (Institut für Optik und Atomare Physik, TU, Berlin, Germany)
- Jefferson Shinpaugh (East Carolina University, Greenville, USA)
- Ilia Solov'yov (Carl von Ossietzky University, Oldenburg, Germany)
- Eric Suraud (Université Paul Sabatier, Toulouse, France)
- Eugene Surdutovich (Oakland University, Rochester, Michigan, USA)

Organizing Committee

- Vincenzo Guidi (University of Ferrara, Italy) - **Co-Chair**
- Nigel Mason (University of Kent, United Kingdom) - **Co-Chair**
- Andrey Solov'yov (MBN Research Center, Germany) - **Co-Chair**
- Laura Bandiera (INFN, Ferrara, Italy)
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- Andrea Mazzolari (INFN, Ferrara, Italy)
- Ilia Solov'yov (Carl von Ossietzky University, Oldenburg, Germany)
- 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 Ferrara, Ferrara, Italy
- University of Kent, Canterbury, United Kingdom
- Sir John and Lady Mason Academic Trust
- Virtual Institute of Thin Films
- Springer Verlag
- H2020-MSCA-RISE N-Light
- H2020-MSCA-RISE RADON

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DySoN-ISACC Conference Web Page

Updated information on the DySoN-ISACC 2021 conference is available at www.dyson-conference.org.
There, general information on the DySoN conference series can also be found.

Relevant information on the ISACC series is available at www.isacc-portal.org.

DySoN-ISACC 2021 Conference e-mail

dyson.conference@gmail.com