

JULY 4-9, 2021 – LIVE and ONLINE



GREEN CHEMISTRY LIVE AND ONLINE POSTGRADUATE SUMMER SCHOOL

4th-9th July 2021
Venice, Italy

Organizers:
Pietro Tundo Chairman
Fabio Aricò
Aurelia Visa
Mirabbos Hojamberdiev
Elena Alfine
Emilia Pasta

Topics:
Benign synthesis routes
Green catalysis
Alternative solvents
Renewable and green raw materials
Green chemistry for energy
Clean processes
Green Chemistry education

Info at: <https://www.gssd-foundation.org>
www.greenchemistry.school/

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JULY 6-10, 2020 – ONLINE

Organized by



**GREEN SCIENCES
FOR SUSTAINABLE
DEVELOPMENT
FOUNDATION**

In collaboration with



**INTERNATIONAL UNION OF
PURE AND APPLIED CHEMISTRY**



**Ca' Foscari
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of Venice**



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TIMETABLE

SUNDAY 4-July		MONDAY 5-July		TUESDAY 6-July		WEDNESDAY 7-July		THURSDAY 8-July		FRIDAY 9-July	
12:00-17:00	Check-in and Registration at Campus Santa Marta	9:00-10:15	OPENING CEREMONY	9:00-9:30	SPONSORS and INSTITUTIONS	9:00-9:30	SPONSORS and INSTITUTIONS + PhotoAgro Awards	9:00-9:30	SPONSORS and INSTITUTIONS	9:00-9:30	SPONSORS and INSTITUTIONS
		10:15-11:00	Jean-Marie Lehn	9:30-10:15	Michael Graetzel	9:30-10:15	Alessandro Martinis	9:30-10:15	Krzysztof Matyjaszewski	9:30-10:15	Burkhard König
17:00-19:00	WELCOME TOGETHER	11:00-11:45	Pietro Tundo	10:15-10:45	Zhimin Liu	10:15-11:00	Carlo Barbante	10:15-10:45	Q&A	10:15-10:45	Q&A
		11:45-12:15	Buxing Han	10:45-11:15	Q&A	11:00-11:30	Florent Allais	10:45-11:45	Poster session	10:45-11:15	Aurelia Visa
		12:15-12:45	Q&A	11:15-11:45	Poster session	11:30-12:00	Q&A	11:45-12:15	Francesco Trotta	11:15-11:45	Mirabbos Hojamberdiev
		12:45-14:15	Lunch	11:45-12:15	Haoran Li	12:00-12:45	Poster session	12:15-12:45	Fabio Aricò	11:45-12:15	Peter Licence
		14:15-14:45	Emiliano Cazola	12:15-12:45	Konstantinos Triantafyllidis	12:45-14:15	Lunch	12:45-14:15	Lunch	12:15-12:45	James Clark
		14:45-15:15	Elena Pomari	12:45-14:15	Lunch	14:30-17:30	SOCIAL EVENT	14:15-14:45	Ferruccio Trifirò	12:45-14:15	Lunch
		15:15-15:45	Poster session	14:15-14:45	Jane Wissinger			14:45-15:45	Poster session	14:15-14:45	UNEP
		15:45-16:15	Oliver Kappe	14:45-15:15	Philip Jessop			15:45-16:15	Klaus Kümmerer	14:45-17:00	CLOSING CEREMONY AND POSTER AWARDS
		16:15-16:45	Natalia Tarasova	15:15-16:45	Poster session			16:15-16:45	Liliana Mammìno		
		16:45-17:15	Roman Warchol	16:45-17:15	Paul Anastas			16:45-17:15	Jonathan Forman		
		17:15-17:45	Q&A	17:15-18:30	POSTER SESSION for attending students			17:15-17:45	Mary Kirchhoff		
		17:45-18:30	POSTER SESSION for attending students								

CEST TIME

(Central European Summer Time)

JULY 6-10, 2020 – ONLINE

REPORT

GREEN CHEMISTRY POSTGRADUATE SUMMER SCHOOL 4th-9th JULY 2021, LIVE and ONLINE

<https://www.greenchemistry.school/>

The 13th Green Chemistry Postgraduate Summer School was held for the first time in hybrid way, both online and in-person in Venice from 4th to 9th July 2021, as a result of the still ongoing situation related to the Covid-19 pandemic and some limitations on travelers' mobility.

The Summer School was an international initiative organized and managed by the **Green Sciences for Sustainable Development (GSSD) Foundation** (www.gssd-foundation.org), a no-profit Foundation established in February 2020 and based in Venice, Italy.

This 13th edition of the Green Chemistry Summer Schools follows the 12 previous editions, of which the last one was held completely online in July 2020.

The event in-person took place in the classroom 2B and 2D in San Basilio, Ca' Foscari University of Venice. The attendees in-person (13 PhD students and about 10 professors) stayed in the Camplus Santa Marta Apartments (<https://www.camplusapartments.it/en/residences/venezia/camplus-santa-marta>), a new and comfortable facility in Venice which offered rooms of different size for all participants' stay.

The event was chaired by Prof. Pietro Tundo, President of Green Sciences for Sustainable Development Foundation and Chair of IUPAC - Interdivisional Committee of Green Chemistry for Sustainable Development, ICGCSD.

The Organizing Committee included Prof. Fabio Aricó from Ca' Foscari University of Venice, Italy, Dr. Aurelia Visa from Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry in Timisoara, Romania, and member of IUPAC, and the Secretary of the Conference, Ms. Elena Alfine from Green Sciences for Sustainable Development Foundation, Italy and by Ms. Emilia Pasta from Green Sciences for Sustainable Development Foundation.

The Organizing Committee was supported by the ZOOM Manager, Ms. Paula de Waal from MENTAT, Italy.

JULY 6-10, 2020 – ONLINE
SUMMER SCHOOL COMMITTEES

CHAIR OF THE SUMMER SCHOOL

- **Pietro Tundo**, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

LOCAL ORGANIZING COMMITTEE

- **Fabio Aricò**, *Associated professor of Organic Chemistry, Ca' Foscari University of Venice, Italy*
- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*
- **Mirabbos Hojamberdiev**, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan Technische Universität Berlin, Germany*
- **Elena Alfine**, *Green Sciences for Sustainable Development Foundation, Italy*
- **Emilia G. Pasta**, *Green Sciences for Sustainable Development Foundation, Italy*

ZOOM MANAGER

- **Paula de Waal**, *Mentat di De Waal P., Italy*

INTERNATIONAL SCIENTIFIC COMMITTEE (FROM IUPAC - ICGCSD)

- **Florent Allais**, *Directeur de l'URD Agro-Biotechnologies Industrielles (ABI) AgroParisTech, France – Associate member of IUPAC ICGCSD*
- **Fabio Aricò**, *Ca' Foscari University of Venice, Italy*
- **Neil Coville**, *University of the Witwatersrand, Johannesburg, South Africa*
- **Jonathan Forman**, *Science and Technology Advisor in the Global Security Technology and Policy Group under the National Security Directorate of Pacific Northwest National (PNNL), USA – Titular member of IUPAC ICGCSD*
- **Mirabbos Hojamberdiev**, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan and Technische Universität Berlin, Germany*
- **Konstantinos S. Triantafyllidis**, *Aristotle University of Thessaloniki, Greece*
- **Pietro Tundo**, *President of the Green Sciences for Sustainable Development Foundation and Ca' Foscari University of Venice, Italy – Chair of IUPAC ICGCSD*
- **Aurelia Visa, Romanian Academy**, *"Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania – Associate member of IUPAC ICGCSD*
- **Jane Wissinger**, *Environmental & Green Chemistry, Department of Chemistry, University of Minnesota, USA – Associate member of IUPAC ICGCSD*

INTERNATIONAL JURY FOR THE POSTER SESSIONS

- **Neil Coville**, *Chairman of the Jury and Emeritus professor at University of the Witwatersrand, Johannesburg, South Africa*
- **Pietro Tundo**, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

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- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*
- **Mirabbos Hojamberdiev**, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan and Technische Universität Berlin, Germany*
- **Fabio Aricò**, *Associated professor of Organic Chemistry, Ca' Foscari University of Venice, Italy*

The School was held in collaboration with IUPAC - Interdivisional Committee of Green Chemistry for Sustainable Development, ICGCSD, Ca' Foscari University of Venice and the Italian National Commission for UNESCO Roma.

The event was endorsed by the Ministry of the Ecological Transition (Ministero della Transizione Ecologica), AIRI (Associazione Italiana per la Ricerca Industriale), the European Chemical Society - EuChemS, the UNESCO UNITWIN and TWAS Networks, the Veneto Region and the Municipality of Venice.

The Summer School was sponsored by the Organization for the Prohibition of Chemical Weapons - OPCW, PhosAgro Russia, the Royal Society of Chemistry and GreeNovator.

Thanks to the participation of these Sponsors, 60 postgraduate students attending online the School and 8 attending in-person in Venice, coming from developing countries, have been awarded with a scholarship.

In total, 200 applications arrived and 130 were considered eligible to attend the school after a strict selection made by the 9 members of the International Scientific Committee, and based on their CVs, their list of publications, the recommendation letters from their tutor and their motivations to attend the Summer School.

From these 130 selected post-graduated attendees coming from 38 different countries, 13 PhD students attended in-person in Venice; from the 34 teachers from all over the world, 10 participated in-person in the Summer School.

We also had the pleasure and honor of hosting the Nobel Prize Jean-Marie LEHN, who gave his lecture online just after the Opening Ceremony.

The rigorous selection of the participants contributed to form a class of high cultural level students, who certainly find themselves at a point of their life where they are ready to invest their talents and scientific know-how for their future professional careers in a mature and responsible way. The top-level and diverse range of topics offered at the Summer School provided them the chance to look around, exchange their scientific knowledge and establish important links with other participants and professors for fruitful joint projects and research activities. This was a real success for this Summer School, since this opportunity will speed up the participants' careers as it occurred in the past. In fact, three Alumni who now occupy important positions in their respective countries came back to the School as teachers:

- Prof. Peter Licence, *School of Chemistry, University of Nottingham, United Kingdom,*
- Prof. Fabio Aricò, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*
- Dr. Aurelia Visa, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*

were in different times students of the previous twelve editions of the Summer School in Venice.

After the Summer School, all participants will receive a certificate of attendance.

All the lectures were recorded and are available for registered participants on the Green Sciences for Sustainable Development Foundation's website (www.gssd-foundation.org).

The recordings could also be shared with those who request them.

The Summer School hosted **13 lecture sessions** and **8 poster sessions** on the following **main topics**:

1. Exploitation of renewable resources
2. New reaction pathways
3. Energy saving
4. Food safety
5. Climate Change damages mitigation
6. Education
7. Health

This Summer School by Remote was of course more than ever: we wanted to have a school that can be joined in person and online for those who cannot come to Venice yet.

We tried to engage the participants with the outstanding scientific quality of the teachers, involving them in the discussion of the lectures and, not less important, through the poster sessions.

The experience from the past 12 Summer Schools on Green Chemistry, held from 1997-2020 with more than 1000 students attending, tells us that young people are particularly attracted by Green Chemistry, because they look at it as a means to invest their talent at a particular, strategic moment of their lives. Green Chemistry is a good key for students to look around the scientific disciplines and to decide how and where to go forward.

From the outcomes of this hybrid Summer School we will learn on how to manage the future Schools in Venice, which will become permanent; the Green Sciences for Sustainable Development Foundation will surely support and follow the activities of this initiative.

Our goal is to make the Summer School a permanent event, to be held every Summer in Venice, and thanks to the involvement and the participation of outstanding teachers and partners we are making this objective real.

THE SUMMER SCHOOL 2021 PROGRAMME

MONDAY 5 JULY MORNING

OPENING CEREMONY

The ceremony kicked-off with the welcome message by Prof. **Pietro Tundo**, *Chair of the Summer School*.

Then, the following personalities took the floor:

- **Salvatore Orlando**: *Department of Environmental Sciences, Informatics and Statistics (DAIS) Director*;
- **Christopher Brett**: *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*;
- **Andrey Guryev**: *CEO of PhosAgro, Russia*;
- **Natalia Tarasova**: *Director, Institute of Chemistry and Problems of Sustainable Development, Mendeleev University of Chemical Technology of Russia*;
- **Sandra Averous-Monnery**, *Programme Officer at the United Nations Environment Programme (UNEP)*

1st SESSION - Moderator: Mirabbos Hojamberdiev, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan and Technische Universität Berlin, Germany*

- **Jean-Marie Lehn**, *Nobel Prize in 1987 in Chemistry for the synthesis of Cryptands: innovation in the field of supramolecular chemistry, France*

Perspectives in Chemistry: Molecular – Supramolecular – Adaptive Chemistry.

- **Pietro Tundo**, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

Reaction mechanism and energy profiles: how Green Chemistry complies with them. The case of Dimethyl Carbonate

- **Buxing Han**, *Secretary of Interdivisional Committee of Green Chemistry for Sustainable Development, P. R. China*

Catalysis in Green Chemistry

MONDAY 5 JULY AFTERNOON

2nd SESSION - Moderator: Aurelia Visa, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*

- **Emiliano Cazzola**, *Cyclotron & Radiopharmacy Department Sacro Cuore- Don Calabria Hospital, Negrar, Verona, Italy*

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Green Radiochemistry: dream or reality?

- **Elena Pomari**, *Infectious - Tropical Diseases and Microbiology, Department Sacro Cuore- Don Calabria Hospital, Negrar, Verona, Italy*

Green chemistry and coronavirus

1st POSTER SESSION ONLINE - Moderator: Neil Coville, *Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*

3rd SESSION - Moderator: Aurelia Visa, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*

- **Oliver Kappe**, *Institute of Chemistry, University of Graz, Graz, Austria*

Greening the Manufacturing of Pharmaceuticals Applying Continuous Processing Principles

- **Natalia Tarasova**, *Director, Institute of Chemistry and Problems of Sustainable Development, Mendeleev University of Chemical Technology of Russia*

Green Chemistry within Planetary Boundaries

Roman Warchol, *Senior Programme Officer at Organisation for the Prohibition of Chemical Weapons (OPCW)*

Activities of the Organisation for the Prohibition of Chemical Weapons in relation to green chemistry

POSTER SESSION for attending students.

TUESDAY 6 JULY MORNING

SPONSORS and INSTITUTIONS:

EuChemS - **Ana Aguiar-Ricardo**, *President of EuChemS Division on Green and Sustainable Chemistry, Portugal*

ICGCSD - **Buxing Han**, *Secretary of Interdivisional Committee of Green Chemistry for Sustainable Development, P. R. China*

4th SESSION - Moderator: Christopher Brett, *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*

- **Michael Graetzel**, *Laboratory of Photonics and Interfaces, Ecole polytechnique fédérale de Lausanne, Switzerland*

Mesoscopic Photosystems for the Generation of Electricity and Fuels from Sunlight

- **Zhimin Liu**, *Institute of Chemistry, Chinese Academy of Sciences, 100190, Beijing, P. R. China*
Ionic Liquids Catalyze Chemical Reactions

2nd POSTER SESSION ONLINE - Moderator: Christopher Brett, *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*

5th SESSION - Moderator: Christopher Brett, *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*

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- **Haoran Li**, *Department of Chemistry, Zhejiang University; Director of NHU R&D Center; Director of ZJU-NHU United R&D Center, P. R. China*

Aerobic oxidation in vitamin industry

- **Konstantinos Triantafyllidis**, *Aristotle University of Thessaloniki, Department of Chemistry, Thessaloniki, Greece*

Integrated biorefinery for lignocellulosic biomass valorization to fuels, chemicals and polymers

TUESDAY 6 JULY AFTERNOON

4th SESSION - Moderator: Konstantinos Triantafyllidis, *Aristotle University of Thessaloniki, Department of Chemistry, Thessaloniki, Greece*

- **Jane Wissinger**, *Distinguished Teaching Professor of Chemistry and Organic Chemistry Laboratory Director at the University of Minnesota, United States*

Green Chemistry Curriculum: Training Chemists for a Sustainable Future

- **Philip Jessop**, *Canada Research Chair of Green Chemistry at Queen's University in Kingston, Canada, and Technical Director of GreenCentre, Canada*

CO₂-Switchable Materials

3rd POSTER SESSION ONLINE - Moderator: Konstantinos Triantafyllidis, *Aristotle University of Thessaloniki, Department of Chemistry, Thessaloniki, Greece*

- **Paul Anastas**, *Teresa and H. John Heinz III Professor in the Practice of Chemistry for the Environment, United States*

Green Chemistry:

It's not just about what you do with chemistry.

It's about how you do chemistry.

It's about why you do chemistry.

POSTER SESSION for attending students.

WEDNESDAY 7 JULY MORNING

SPONSORS and INSTITUTIONS

PhosAgro - **Alexander Antonov**, *Head of department for international projects, PJSC PhosAgro*

PhosAgro Awards for attending students.

7th SESSION - Moderator: Oliver Kappe, *Institute of Chemistry, University of Graz, Graz, Austria*

- **Alessandro Martinis**, *Vice President, Danieli Centro Metallics*

Low Carbon Emission Green Steelmaking is possible

- **Carlo Barbante**, *Institute of Polar Sciences and Ca' Foscari University of Venice, Italy*

Too late for 2°C? From the Paris Agreement to the Climate of Tomorrow

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- **Florent Allais**, *Professor of Green Chemistry & Director, URD ABI – AgroParisTech, France*
Biomass upgrading through the combination of Biotechnology, Green Chemistry & Downstream Process

4th POSTER SESSION ONLINE - Moderator: Oliver Kappe, *Institute of Chemistry, University of Graz, Graz, Austria*

WEDNESDAY 7 AFTERNOON

SOCIAL EVENT

THURSDAY 8 JULY MORNING

SPONSORS and INSTITUTIONS

OPCW - **Gaetano Carminati**, Senior Technical Expert from the National Authority for the Prohibition of Chemical Weapons

Ca' Foscari BAS - **Alessandra Zorzi**, Director of Ca' Foscari Library of Scientific Area

8th SESSION - Moderator: Pietro Tundo, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

- **Krzysztof Matyjaszewski**, *Department of Chemistry Carnegie Mellon University, Pittsburgh, United States*

Towards Green ATRP Processes & Products

5th POSTER SESSION ONLINE - Moderator: Pietro Tundo, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

9th SESSION - Moderator: Pietro Tundo, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*

- **Francesco Trotta**, *Associated professor of Industrial Chemistry University of Turin, Italy*
Exploitation of renewable resources in Polymer Chemistry

- **Fabio Aricò**, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*
Bio-based platform chemicals and dialkyl carbonates: a green match

THURSDAY 8 AFTERNOON

10th SESSION - Moderator: Fabio Aricò, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*

- **Ferruccio Trifirò**, *Emeritus Professor of the University of Bologna, Italy*
The green and sustainable synthesis of methacrylic acid methylmethacrylate

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6th POSTER SESSION ONLINE - Moderator: Fabio Aricò, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*

11th SESSION - Moderator: Fabio Aricò, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*

- **Klaus Kümmerer**, *Institute for Sustainable and Environmental Chemistry and ISC Research and Education Hub, Leuphana University Lüneburg, Lüneburg, Germany*

Design of chemicals and pharmaceuticals for environmental mineralisation

- **Liliana Mammino**, *School of Mathematical and Natural Sciences, University of Venda, South Africa*
Computational chemistry and green chemistry. An overview of promising synergies

- **Jonathan Forman** *Science and Technology Advisor, Global Security Technology and Policy, Pacific Northwest National Laboratory (PNNL), Seattle, USA*

Chemical Disarmament, Non-Proliferation, and Security: Where Does Green and Sustainable Chemistry Fit?

- **Mary Kirchhoff**, *Director of the ACS Green Chemistry Institute, Washington DC, United States*
Greening Chemistry Education

FRIDAY 9 MORNING

SPONSORS and INSTITUTIONS

Marco Bella – Member of Parliament of the Italian Republic in the Chamber of Deputies and Professor at La Sapienza University of Rome

12th SESSION - Moderator: Francesco Trotta, *Associated professor of Industrial Chemistry University of Turin, Italy*

- **Burkhard König**, *Faculty of Chemistry and Pharmacy, University of Regensburg, Regensburg, Germany*

Using visible light for more sustainable organic synthesis

- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*
Metal organic frameworks: complexity and diversity in structures and green applications

- **Mirabbos Hojamberdiev**, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan and Technische Universität Berlin, Germany*

Essential Retrospective Overview of IUPAC Projects on Sustainable Development Goals

- **Peter Licence**, *School of Chemistry, University of Nottingham, Nottingham, NG7 2RD, United Kingdom*

Ionic Liquids: The good, The Bad and The Ugly.

- **James Clark**, *Professor of Chemistry at the University of York; Founding Director of the Green Chemistry Centre of Excellence and the Bio-renewables Development Centre, United Kingdom*
Bio-Based Solvents

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FRIDAY 9 AFTERNOON

13th SESSION: Moderator: Pietro Tundo, *Chair of the Summer School, Venice, Italy*

UNEP - **Sandra Averous-Monnery**, *Programme Officer at the United Nations Environment Programme (UNEP)*

Christopher Brett: *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*

Pietro Tundo, *Chair of the Summer School, Venice, Italy*

JULY 6-10, 2020 – ONLINE
POSTER WINNERS AWARDS

79 Posters were received, and the students had the opportunity to expose their research work at the **poster sessions** from Monday 5th July to Thursday 8th July, for a total of 6 poster sessions.

13 of the posters received were presented in-person in two different poster sessions on Monday and on Tuesday from the attendees, in the classroom 2D, in San Basilio.

The poster sessions can be considered a highlight of the Summer School, for the originality and the scientific value of the contributions, for the significant number of young people that shared their researches with the other attendees and for the interest shown by the participants.

During the poster awarding ceremony six participants were awarded for their posters and gave an oral presentation on their work.

The 79 best posters were selected by a **Scientific Jury, composed by the following Members:**

- **Neil Coville**, *Chairman of the Jury and Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*
- **Pietro Tundo**, *Chair of Interdivisional Committee of Green Chemistry for Sustainable Development and President of Green Sciences for Sustainable Development Foundation, Venice, Italy*
- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*
- **Mirabbos Hojamberdiev**, *Uzbekistan-Japan Innovation Center of Youth, Uzbekistan*
Technische Universität Berlin, Germany
- **Fabio Aricò**, *Associated professor of Organic Chemistry, Ca' Foscari University of Venice, Italy*

There were 11 Awards: 4 by PhosAgro (500 € each) for in person poster presenters, and 7 by the Jury of the Summer School for online poster presenters.

The 4 in-person winners were:

- Felipe Sanchez Bragagnolo, *Faculty of Agricultural Sciences, São Paulo State University, São Paulo, Brazil*

A green approach to valorize soy agro by-products

- Manar M. Taha, *Energy Materials Laboratory, School of Sciences and Engineering, The American University in Cairo, New Cairo*

Controlled Fabrication of Mesoporous Electrodes with Unprecedented Stability for Water Capacitive Deionization Under Harsh Conditions in Large Size Cell

- Mohammed Kadhom, *Department of Environment, College of Energy and Environmental Science, Alkarkh University of Science, Baghdad, Iraq*

Improving the Performance of TFN Membranes by Incorporating UiO-66 and MIL-125 MOFs Nanoparticles Used for Water Desalination

- Monika Horvat, *University of Ljubljana, Faculty of Chemistry and Chemical Technology*

Selective Oxidative Cleavage Of C-C Double Bond By Hydrogen Peroxide

They presented their research work with a PowerPoint presentation on the last day of the Summer School.

The Awards of 500 € each were kindly sponsored by PhosAgro and delivered to the students who could benefit from the money during their stay in Venice.

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The 7 online winners were:

- Luca Filippi, *Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*

Fully renewable NIPUs via thiol-ene polymerization

- Stephanie A. Fraser, *University of KwaZulu-Natal, South Africa*

A novel solvent-based approach towards luminescent cellulose paper

- Giulia Rando, *Department ChiBioFarAm, University of Messina, Italy*

Pillararene-Based PES blended polymers: Design, Preparation and Sustainable Applications

- Caterina Rovegno, *Department of Chemical, Pharmaceutical and Agricultural Sciences, University of Ferrara, Italy*

Efficiency improvements of CO₂ utilization: the case of styrene carbonate synthesis in microdroplets conditions

- Gabriele Soriano, *Department of Chemical Sciences, University of Naples Federico II, Naples, Italy*

Plant metabolites as stimulants and/or inhibitors of parasitic plant seed germination

-Solange M. Selzer, *Physical Chemistry Department, Faculty of Chemistry Science, Universidad Nacional de Córdoba, Argentina*

Study of Toxicity and Cellular Uptake of Magnetic Nanoparticles With Different Coatings

- Yanru Zhang, *Institute of Chemistry, Chinese Academy of Sciences, P.R. China*

Synthesis of Higher Carboxylic Acids via the Hydrocarboxylation of Alcohols with CO₂ and H₂

The Award consists in an original print of Venice, which will be sent to the winners through postal service. The prints will be purchased from a Bookstore in Venice specialized in antiquities:

<https://www.libreriaemiliana.com/>

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CLOSING CEREMONY

The Closing Remarks were given by **Sandra Averous-Monnery**, *Programme Officer at the United Nations Environment Programme (UNEP)*, who presented the UNEP feedback after collecting the Surveys from students, and by **Christopher Brett**, *IUPAC President, Portugal*.

The last Closing Remarks were given by the Chair of the Summer School, Prof. **Pietro Tundo**.

At the end of the closing ceremony a group photo with all the participants of the Summer School, including teachers and students, were taken. The photo can be found on the Green Sciences for Sustainable Development Foundation's website (www.gssd-foundation.org).

These and more information could be found on the **Green Sciences for Sustainable Development Foundation's** website (www.gssd-foundation.org)

- Proceedings (Book of Abstracts)
- Group photo

Venice, July 13th 2021

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