

JULY 6-10, 2020 – ONLINE



GREEN CHEMISTRY ONLINE POSTGRADUATE SUMMER SCHOOL

6-10 July 2020
Venice, Italy

Organizers:

Pietro Tundo Chairman

Fabio Aricò

Aurelia Visa

Elena Alfine

Emilia G. Pasta

Topics:

Exploitation of renewable resources

New reaction pathways

Energy saving

Food security

Green Chemistry for cultural heritage

Climate Change mitigation

Info at www.unive.it/ssgc

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
University
of Venice**

Endorsed by



Organizzazione
delle Nazioni Unite
per l'Educazione,
la Scienza e la Cultura

Con il patrocinio della
**Commissione
Nazionale Italiana
per l'UNESCO**



United Nations
Educational, Scientific and
Cultural Organization



Network "Green Chemistry Excellence
from the Baltic Sea to
the Mediterranean Sea and Beyond"



**MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE**

**CITTA' DI
VENEZIA**



Con il patrocinio di



Platinum Sponsors



PHOSAGRO®



OPCW

**Kaimei Technology
Co. Ltd., China**

Sponsors



EuChemS
European Chemical Society



ACS
Chemistry for Life®



IYCN



**Green
Chemistry**

Greenovator

JULY 6-10, 2020 – ONLINE

We thank Ca' Foscari University of Venice, for assisting and making available the web site of the Summer School at www.unive.it/ssgc

JULY 6-10, 2020 – ONLINE

TIMETABLE

CEST – Central European Summer time

MONDAY 6 July		TUESDAY 7 July		WEDNESDAY 8 July		THURSDAY 9 July		FRIDAY 10 July	
9:00-10:15	OPENING CEREMONY	9:00-9:30	EuChemS - A. Aguiar-Ricardo ICGCSD - Buxing Han	9:00-9:30	ACS - Mary Kirchhoff Nottingham University - Martyn Poliakoff	9:00-9:30	OPCW - Gaetano Carminati Ca' Foscari BAS - Alessandra Zorzi	9:00-9:30	Società Chimica Italiana - Carmine Capachione Marco Bella
10:15-11:00	Michael Graetzel (Aurelia Visa)	9:30-10:15	Haoran LJ (Buxing Han)	9:30-10:15	Konstantinos Triantafyllidis (K. Barta)	9:30-10:15	Marco Eissen (A. Visa)	9:30-10:15	Oliver Kappe (K. Triantafyllidis)
11:00-11:45	Mario Marchionna (Aurelia Visa)	10:15-11:00	Pietro Tundo (Buxing Han)	10:15-11:00	Peter Licence (K. Barta)	10:15-11:00	Francesco Trotta (A. Visa)	10:15-11:00	Florent Allais (K. Triantafyllidis)
11:45-12:15	Q&A (Aurelia Visa)	11:00-11:30	Q&A (Buxing Han)	11:00-11:45	Liu Zhimin (K. Barta)	11:00-11:30	Q&A (A. Visa)	11:00-11:45	James Clark (K. Triantafyllidis)
12:15-12:45	Break	11:30-12:00	Break	11:45-12:15	Q&A (K. Barta)	11:30-12:00	Break	11:45-12:15	Q&A (K. Triantafyllidis)
12:45-13:15	POSTER SESSION (N. Coville)	12:00-13:00	POSTER SESSION (A. Aguiar-Ricardo)	12:15-12:45	Break	12:00-13:00	POSTER SESSION (Gloria Obuzor)	12:15-12:45	Break
13:15-14:00	Giuseppe Mazzitelli (F. Arico)	13:00-13:45	Krzysztof Matyjaszewski (C. Brett)	12:45-13:45	POSTER SESSION (Y. Chebude)	13:00-13:45	Sergey Zinoviev (P. Jessop)	12:45-13:30	Jean-Marie LEHN (P. Tundo)
14:00-14:45	Emiliano Cazzola (F. Arico)	13:45-14:30	Paul Anastas (C. Brett)	13:45-14:30	Philip Jessop (F. Allais)	13:45-14:30	Jonathan Forman (P. Jessop)	13:30-14:00	Q&A (P. Tundo)
14:45-15:30	Buxing Han (F. Arico)	14:30-15:15	Alexander Sharabai (C. Brett)	14:30-15:15	Fabio Arico (F. Allais)	14:45-15:30	Ferruccio Trifiro (P. Jessop)	CLOSING CEREMONY AND POSTER AWARDS	
15:30-16:00	Q&A (F. Arico)	15:15-16:00	Klaus Kümmerer (C. Brett)	15:15-16:00	Katalin Barta (F. Allais)	15:30-16:00	Q&A (P. Jessop)		
16:00-16:30	Natalia Tarasova (N. Coville)	16:00-16:30	Q&A (C. Brett)	16:00-16:30	Q&A (F. Allais)	16:00-16:30	Mary Kirchhoff (J. Wiesinger)		
16:30-17:00	POSTER SESSION (N. Coville)	16:30-17:00	Jane Wissinger (A. Aguiar-Ricardo)	POSTER SESSION (M. Kirchhoff)		16:30-17:00	Liliana Mammìno (J. Wiesinger)	14:00-17:00	
		17:00-17:30	POSTER SESSION (A. Aguiar-Ricardo)						

*(Moderators)

JULY 6-10, 2020 – ONLINE

REPORT

GREEN CHEMISTRY POSTGRADUATE SUMMER SCHOOL 6TH-10TH JULY 2020, ONLINE

<https://www.unive.it/ssgc>

The Green Chemistry Postgraduate Summer School, as a result of the crisis caused by the Coronavirus (COVID-19) ongoing outbreak and the limitations on travelers' mobility, was held online from 6th to 10th July 2020.

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

This 12th edition of the Green Chemistry Summer Schools follows the 11 previous editions, of which the last one was held at Palazzo Ducale in Venezia, in July 2018.

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 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 and the Web managers, Enrico Siviero, Daniele Barzazzi, Andrea Cester and Fabrizio Romano from Ca' Foscari University of Venice, Italy.

JULY 6-10, 2020 – ONLINE

SUMMER SCHOOL COMMITTEES

CHAIR OF THE SUMMER SCHOOL

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

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*
- **Elena Alfine**, *Green Sciences for Sustainable Development Foundation, Italy*
- **Emilia G. Pasta**, *Green Sciences for Sustainable Development Foundation, Italy*

WEB MANAGERS

- **Daniele Barzazzi**,
- **Andrea Cester**
- **Enrico Siviero**
- **Fabrizio Romano**, *Ca' Foscari University of Venice, 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*
- **Jane Wissinger**, *Environmental & Green Chemistry, Department of Chemistry, University of Minnesota*
- **Ana Aguiar Ricardo**, *Chemical & Biochemical Engineering, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa*
- **Aurelia Visa**, *Romanian Academy, "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*
- **Klaus Kummerer**, *Leuphana University of Lüneburg. Institute for Sustainable and Environmental Chemistry, Lüneburg, Germany*
- **Buxing Han**, *Chinese Academy of Sciences, Beijing, China*
- **Jorge Colon**, *Chemistry Department, College of Natural Sciences, University of Porto Rico*
- **Nadia Kendile**, *Chemistry Department, Faculty of Women, Ain Shams University, Heliopolis, Cairo, Egypt*
- **Mester Zoltan**, *Department of Chemistry Queen's University Kingston, Ontario, Canada*
- **Liliana Mammino**, *University of Venda, Thohoyandou, South Africa*
- **Natalia P. Tarasova**, *Mendeleev University of Chemical Technology, Moscow, Russia*
- **Konstantinos S. Triantafyllidis**, *Department of Chemistry Aristotle University of Thessaloniki, Greece*

INTERNATIONAL JURY FOR THE POSTER SESSIONS

- **Neil Coville**, *Chairman of the Jury and Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*
- **Ana Aguiar-Ricardo**, *Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal*
- **Mary Kirchhoff**, *Director of the ACS Green Chemistry Institute, Washington DC, United States*
- **Gloria Obuzor**, *Department of Pure and Industrial Chemistry, University of Port Harcourt, Nigeria*
- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*

The School was held in collaboration with IUPAC - Interdivisional Committee of Green Chemistry for Sustainable Development, ICGCSD, to which all the 15 members of the International Scientific Committee belonged, and Ca' Foscari University of Venice.

The event was endorsed by the Italian National Commission for UNESCO Roma, the Ministero dell'Ambiente e della Tutela del Territorio e del Mare, the GREENOMICS UNESCO/UNITWIN Network, the Municipality of Venice and ENEA.

The Summer School was sponsored by the Organization for the Prohibition of Chemical Weapons - OPCW, PhosAgro Russia, Kaimei Technology Co. Ltd. China, the European Chemical Society - EuChemS, the American Chemical Society/Green Chemistry Institute, the International Young Chemists Network, ICAS International, the Royal Society of Chemistry and GreeNovator.

Thanks to the participation of these Sponsors, about half of the postgraduate students attending the School, coming from developing countries, have been awarded with a scholarship.

In total, 210 applications arrived and 180 were considered eligible to attend the school after a strict selection made by the 15 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.

The 180 selected post-graduated attendees coming from 42 different countries (the list can be found on the GSSD Foundation's website) and 30 teachers from all over the world participated in the Summer School online. We also had the pleasure and honor of hosting the Nobel Prize Jean-Marie LEHN, who gave his lecture before the Closing 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, five Alumni who now occupy important positions in their respective countries came back to the School as teachers:

JULY 6-10, 2020 – ONLINE

- Prof. Peter Licence (*School of Chemistry, University of Nottingham, United Kingdom*),
- Prof. Katalin Barta (*Full Professor in Renewable resources and Organic chemistry at the University of Graz, Austria*),
- Dr. Sergey Zinoviev (*Senior International Cooperation Officer at OPCW, The Netherlands*),
- Prof. Fabio Aricò (*Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*) and
- Dr. Aurelia Visa (*Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*)

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

After the Summer School, all participants have received 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 **7 poster sessions** on the following **main topics**:

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

This Summer School by Remote was of course more challenging than an event in person: while the students had the opportunity to be connected from everywhere, at the same time it was necessary to keep their attention high; this was possible only by the engagement reached with the outstanding scientific quality of the teachers. The real participation of the students in the Summer School activities was gained involving them in the discussion of the lectures and, not less important, through the poster sessions. The aim of the Summer School is to spread the scientific know-how on Green Chemistry, making it accessible for every student all around the world; in this uncertain times, doing it by remote was the way to reach this goal.

The outcomes and the success of this online Summer School will be important for the next Summer School which will be held in person in Venice; the Green Sciences for Sustainable Development Foundation will surely support and follow the activities of this challenging but rewarding initiative.

THE SUMMER SCHOOL 2020 ONLINE PROGRAMME

MONDAY 6 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:

- **Tiziana Lippiello**: *Vice Rector of Ca' Foscari University of Venice, Italy and Representative for International Relations*;
- **Christopher Brett**: *IUPAC President and Professor of Chemistry at University of Coimbra, Portugal*;
- **Natalia Tarasova**: *Member of Governing Board of the International Science Council, Director of Institute of Chemistry and Problems of Sustainable Development, Mendeleev University of Chemical Technology of Russia and Chairholder of UNESCO in Green Chemistry for Sustainable Development, Russia*;
- **Andrey Guryev**: *CEO of PhosAgro, Russia*;
- **Zhigang Shuai**: *Vice President of Chinese Chemical Society, P. R. China*;
- **Gaetano Guerra**: *President of Società Chimica Italiana, Italy*;
- **Massimiliano De Martin**: *Councilor of the Municipality of Venice, Italy*.

1st SESSION - Moderator: Aurelia Visa, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*

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

Energy Beyond Oil, Solar Cells that Mimic Natural Photosynthesis

- **Mario Marchionna**, *Corporate Head of Technology Innovation of Saipem, Italy*

Hydrogen: the Missing Piece of the Zero-Carbon Puzzle?

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

MONDAY 6 JULY AFTERNOON

2nd SESSION - Moderator: Fabio Aricò, *Ca' Foscari University of Venice, Italy*

- **Giuseppe Mazzitelli**, *ENEA, Fusion and Nuclear Safety Department, Italy*

An affordable and clean energy: nuclear fusion

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

Green Radiochemistry: dream or reality?

- **Buxing Han**, *Professor at Institute of Chemistry, Chinese Academy of Sciences (CAS), P. R. China*

Catalysis in Green Chemistry

JULY 6-10, 2020 – ONLINE

3rd SESSION - Moderator: Neil Coville, *Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*

- **Natalia Tarasova**, *Member of Governing Board of the International Science Council, Director of Institute of Chemistry and Problems of Sustainable Development, Mendeleev University of Chemical Technology of Russia and Chairholder of UNESCO in Green Chemistry for Sustainable Development, Russia*

Green Chemistry within Planetary Boundaries

2nd POSTER SESSION - Moderator: Neil Coville, *Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*

TUESDAY 7 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: Buxing Han, *Professor at Institute of Chemistry, Chinese Academy of Sciences (CAS), P. R. China*

- **Haoran Li**, *Professor at 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

- **Pietro Tundo**, *Emeritus Professor of Organic Chemistry at Ca' Foscari University of Venice, Italy*

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

3rd POSTER SESSION - Moderator: Ana Aguiar-Ricardo, *Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal*

TUESDAY 7 JULY AFTERNOON

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

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

Towards Green Atom Transfer Radical Polymerization

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

The Periodic Table of the Elements of Green and Sustainable Chemistry

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

Green Chemistry for Life

- **Klaus Kümmerer**, *Leuphana University of Lüneburg. Institute for Sustainable and Environmental Chemistry, Lüneburg, Germany*

6th SESSION - Moderator: Ana Aguiar-Ricardo, *Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal*

JULY 6-10, 2020 – ONLINE

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

Green Chemistry Education: Pathway to a Sustainable Future

4th POSTER SESSION - Moderator: Ana Aguiar-Ricardo, *Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal*

WEDNESDAY 8 JULY MORNING

SPONSORS and INSTITUTIONS:

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

Nottingham University - **Martyn Poliakoff**, *The School of Chemistry, University of Nottingham, United Kingdom*

7th SESSION - Moderator: Katalin Barta, *Full Professor at the University of Graz, Austria*

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

Adding value to biorefinery and pulp industry side-streams. Lignin valorization to fuels, chemicals and polymers

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

Chemistry in-vacuo: Suck it and see!

- **Zhimin Liu**, *Institute of Chemistry, Chinese Academy of Sciences, 100190, Beijing, P. R. China*

Ionic Liquids-Catalyzed Chemical Reactions

5th POSTER SESSION - Moderator: Neil Coville, *Emeritus professor of University of the Witwatersrand, Johannesburg, South Africa*

WEDNESDAY 8 AFTERNOON

8th SESSION - Moderator: Florent Allais, *Professor of Green Chemistry & Director, URD ABI – AgroParisTech, France*

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

CO₂-Switchable Materials

- **Fabio Aricò**, *Associated professor of organic Chemistry, Ca' Foscari University of Venice, Italy*

Bio-based platform chemicals and dialkyl carbonates: synthesis, functionalization and applications

- **Katalin Barta**, *Full Professor in Renewable resources and Organic chemistry at the University of Graz, Austria*

Cleave And Couple: Embracing Complexity In Renewable Resources

6th POSTER SESSION - Moderator: Mary Kirchhoff, *Director of the ACS Green Chemistry Institute, Washington DC, United States*

THURSDAY 9 JULY MORNING

SPONSORS and INSTITUTIONS:

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

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

9th SESSION - Moderator: Aurelia Visa, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry – Timisoara, Romania*

- **Marco Eissen**, *Gymnasium Ganderkesee, Germany*

Synthesis design with mass related metrics and health metrics

- **Francesco Trotta**, *Associated professor of Industrial Chemistry University of Turin, Italy*

Exploitation of renewable resources in Chemistry

7th POSTER SESSION - Moderator: Gloria Obuzor, *Department of Pure and Industrial Chemistry, University of Port Harcourt, Nigeria*

THURSDAY 9 AFTERNOON

10th SESSION - Moderator: Philip Jessop, *Canada Research Chair of Green Chemistry at Queen's University in Kingston and Technical Director of GreenCentre, Canada*

- **Sergey Zinoviev**, *Senior International Cooperation Officer at OPCW, The Netherlands*

Green Chemistry in the Context of the Chemical Weapons Convention, its Contribution to Chemical Safety and Security and the Peaceful Uses of Chemistry

- **Jonathan Forman**, *Science and Technology Advisor in the Global Security Technology and Policy Group under the National Security Directorate of Pacific Northwest National (PNNL), United States*

Chemical Disarmament, Non-Proliferation, and Security. Is there a role for green and sustainable Chemistry?

- **Ferruccio Trifirò**, *Emeritus Professor of the University of Bologna, Italy*

The elimination of toxic reagents to realize a sustainable chemistry

11th SESSION - Moderator: Jane Wissinger, *Distinguished Teaching Professor of Chemistry and Organic Chemistry Laboratory Director at the University of Minnesota, United States*

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

- **Liliana Mammino**, *School of Mathematical and Natural Sciences, University of Venda, South Africa*

The Study Of Molecules And The Design Of Substances: Interfaces Between Green Chemistry And Computational Chemist

- **Fun Man Fung**, *elected Secretary of the International Younger Chemists Network, Singapore*

FRIDAY 10 MORNING

SPONSORS and INSTITUTIONS:

Carmine Capacchione, *Professor of Inorganic Chemistry at Salerno University Società Chimica Italiana.*

Marco Bella, *Professor of Organic Chemistry at La Sapienza University of Rome and Parlamentare della Repubblica Italiana, presso la Camera dei Deputati, Italy*

JULY 6-10, 2020 – ONLINE

12th SESSION - Moderator: Konstantinos Triantafyllidis, *Professor at the Department of Chemistry, Aristotle University of Thessaloniki, Greece*

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

Going with the Flow – The Use of Continuous Processing in Organic Synthesis

- **Florent Allais**, *Professor of Green Chemistry & Director, URD ABI – AgroParisTech, France*

Biomass upgrading through the combination of Biotechnology, Green Chemistry and Downstream Process

- **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 and their selection

FRIDAY 10 AFTERNOON

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

- **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.

JULY 6-10, 2020 – ONLINE

POSTER WINNERS AWARDS

83 Posters were received and 60 students had the opportunity to expose their selected posters at the **poster sessions** from Monday 6th July to Thursday 9th July. 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 60 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*
- **Ana Aguiar-Ricardo**, *Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal*
- **Mary Kirchhoff**, *Director of the ACS Green Chemistry Institute, Washington DC, USA*
- **Gloria Obuzor**, *Department of Pure and Industrial Chemistry, University of Port Harcourt, Nigeria*
- **Aurelia Visa**, *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry, Timisoara, Romania*

The 6 winners were:

- Carlos Alberto Da Silva Junior, *University of Campinas (UNICAMP), Brazil*

Teaching Green Chemistry To Deaf Students: A Brazilian Case Study

- Melissa Greta Galloni, *Università degli Studi di Milano, Italy*

Iron functionalised hydroxyapatites as efficient eco-friendly catalysts for air-quality protection

- Tafadzwa Precious Mabate, *University of Johannesburg, South Africa*

Inorganic-Perovskite Catalyzed Transfer Hydrogenation Reaction of Cinnamaldehyde Using Glycerol as a Hydrogen Donor

- Li-Qi Qiu, *Nankai University, P. R. China*

Highly Efficient Visible Light-Driven Rhenium Catalysis for CO₂ Reduction through Second-Sphere-Modification Strategy

- Kristy Stanley, *University College Dublin, Ireland*

Effect of Ni NP morphology on catalyst performance in non-thermal plasma-assisted dry reforming of methane

- Kevin Weibel, *Karlsruhe Institute of Technology (KIT), Germany*

A more sustainable and highly practicable synthesis of aliphatic isocyanides

They held a talk on their research of about 10 min each.

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/>

JULY 6-10, 2020 – ONLINE

CLOSING CEREMONY

The Closing Remarks were given by **Christopher Brett**, *IUPAC President, Portugal*, **Ana Aguiar-Ricardo**, *President of EuChems Division on Green Chemistry, Portugal*, and by the Organizing Committee of the Green Chemistry Postgraduate Summer School: **Fabio Aricò** from *Ca' Foscari University of Venice, Italy*, **Paula De Waal** from MENTAT, **Elena Alfine** from GSSD Foundation and **Aurelia Visa**, from *Romanian Academy "Coriolan Drăgulescu" Institute of Chemistry in Timisoara, Romania*.

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 find on the **Green Sciences for Sustainable Development Foundation's** website (www.gssd-foundation.org)

- Proceedings (Book of Abstracts)
- Students' motivations to attend the Summer School
- Group photo

Venice, July 24th 2020

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
University
of Venice

Endorsed by



Organizzazione
delle Nazioni Unite
per l'Educazione,
la Scienza e la Cultura

Con il patrocinio della
**Commissione
Nazionale Italiana**
per l'UNESCO



United Nations
Educational, Scientific and
Cultural Organization



Network "Green Chemistry Excellence
from the Baltic Sea to
the Mediterranean Sea and Beyond"



MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

CITTA' DI
VENEZIA



Con il patrocinio di



Platinum Sponsors



PHOSAGRO®



OPCW

Kaimei Technology
Co. Ltd., China

Sponsors



EuChemS
European Chemical Society



ACS
Chemistry for Life®



IYCN



Green
Chemistry

GreenNovator