

**Interdivisional Committee on Green Chemistry
for Sustainable Development, ICGCSD
Virtual Meeting
Friday 15 May h 16-18 CET (Central Europe Time)
Minutes of meeting**

(Thanks to Aurelia Visa, who managed the virtual meeting thru GoToMeeting site and prepared the Minutes of meeting).

1. Welcome and apologies for absence

The Chair Professor Pietro Tundo welcomed the committee members and division representatives. He conveyed apologies from absent members.

IN ATTENDANCE: ICGCSD titular members, associate members and division representatives:

Prof. Pietro Tundo (PT), STC-Chair, Italy
Prof. Buxing Han (BH), STC-Secretary China/Beijing
Prof. Natalia Tarasova (NT), TM, Russia (17-18 CET)
Prof. Klaus Kümmere (KK)r, TM, Germany
Prof. Jane Wissinger (JW), AM, USA
Prof. Florent Allais(FA), AM, France

Dr. Aurelia Visa (AV), AM, Romania
Prof. Ana Aguiar-Ricardo (AAR), DR IV, Portugal
Prof. Nadia Kandile (NK), DR VI, Egypt
Prof. Zhimin Liu (ZL), AB, China/Beijing, *invited*
Prof. Konstantinos Triantafyllidis (KT), Greece, *invited*
Prof. Anna Makarova (AM), Russia, *invited*

APOLOGIES:

Dr. Jonathan Forman (JF), TM, Netherlands
Prof. Jorge Colón (JC), DR II, Puerto Rico
Prof. Liliana Mammino (LM), DR III, South Africa

Prof. Zoltan Mester (ZM), DR V, Canada
Prof. Alan Hutton (AH), DR VIII, South Africa
Prof. Pierangelo Metrangolo (PM), DR I, Italy

2. Call for additional agenda items

No additional items were added to the Agenda. ICGCSD information and reports will continue to be upgraded on IUPAC site.

3. Communications

PT thanked Aurelia and Zhimin for their support in the communications. On March 2020 ICGCSD Newsletter, prepare by AV, was added to the IUPAC-ICGCSD website. Communication with Dr. Lynn Soby and Dr. Fabienne Meyers was conducted by ZL.

The Advisory Board, approved by all attendance - and also via email from ICGCSD members who couldn't attend the virtual meeting on 30th January 2020 - should appear on the website. ICGCSD information and reports will be upgraded constantly on IUPAC site when necessary. However, no updated are still observed and ZL needs to have the access to it.

4. Chair's report from the 104th Bureau meeting - 25 April 2020

All members received in advance the slides presented by PT to the Bureau meeting: our activities, the ICGCSD Statement and the awards presented. The Statement of ICGCSD must be discussed further among IUPAC officers and President.

Another topic which was introduced was the role of the interdivisional committees which are not in competition with the Divisions. This needs to be stressed in order to avoid misunderstandings. Every IUPAC Body has to comply with their own terms of references.

Mark Cesa, ex-IUPAC President, is chairing a panel who will suggest how IUPAC structure should be modified in order to conform to its mission in the present times.

The next face-to face Bureau meeting will be next year in Montreal.

5. Interaction/collaboration with IUPAC Divisions/Committees

The Division representatives should be more involved and have a voice in communication and decisions with ICGCSD. Also ICGCSD should strength the cooperation with other committees, to open dialogs and to be better at service for IUPAC. A discussion was just starting between PT and COCI Chair (Dr. Robert Audette,) CCE Chair (Prof. Jan Apotheker) and Chemrawn Chair (Dr. Francesca Kerton).

AAR asks more details about the persons to understand more clearly the situation. KK discussed about the divisions and interdivision committees that we have to collaborate with.

6. Collaboration with Professional Bodies, Stakeholders and Industry: UNESCO, OPCW, UNEP, OECD, EuChemS Division on Green and Sustainable Chemistry

PT presented the relations or collaboration pre-proposals with UNESCO, OPCW, UNEP, OECD, EuChemS Division on Green and Sustainable Chemistry.

OPCW

JF, who was a key person in Organisation for the Prohibition of Chemical Weapons (**OPCW**), cannot participate in the meeting. Hemda Garelick on a meeting held in Paris last July, took the responsibility to propose a collaboration with the OPCW. Just recently, she sent an email to many people asking for their interest in collaboration: IUPAC could open a dialogue with this organization. Such a list was made known by PT to ICGCSD; the Office invited to collaborate with IUPAC is the Office of Strategy and Policy (**OSP**); this is the former Office of JF. However, there is a division in OPCW, namely the International Cooperation and Assistance Division (**ICA**) directed by Dr. Kayoko Gotoh, and its International cooperation Branch directed by Dr. Li Zhao (**ICB**). Such Division (ICA and its ICB) is dealing with the peaceful utilization of chemistry, collaboration with industry and specifically on Green Chemistry and education. Such OPCW Division and its branch do not usually finance projects (but in a few cases, they did so), but they support participation to events (conferences and workshops) and organize meetings in the Hague with an international audience. A few members of ICGCSD were invited many times in the OPCW Headquarters to attend such ICA/ICB events in the last few years. A discussion was followed.

KK proposed to contribute to OPCW activities, also on how to handle and domesticate toxic chemicals. BH and ZL are interested to collaborate. PT has a long term of collaboration with ICA and ICB.

The collaboration should be realized by ICGCSD as IUPAC body, not by individuals. It was recommended that ICGCSD has a pivotal role in this pre-proposal where also ICA and ICB should be involved.

ICGCSD decided to send an email to Prof. Garelick accordingly, and to inform about the matter also OPCW, namely ICA/ICB Division and OSP Office.

UNEP

UN Environment Program (**UNEP**) – organized last year meeting in Geneva and invited individual persons to collaborate in proposing some, so called, Manuals on green/sustainable chemistry. PT proposed to make some suggestions from ICGCSD to these Manuals. For IUPAC/ICGCSD it should be noteworthy to be present and to make such contributions and suggestions. Everybody was asked to send to PT two pages by next

Monday (18 May 2020). We should assist UNEP from a scientific point of view. PT will send to UNEP a proposal for possible projects to be agreed together.

OECD

The Organization for Economic Cooperation and Development (**OECD**) planned to have a meeting last April on risk management and on substitution of hazardous materials; however, due to the Covid 19 situation the workshop was held virtual on April 28th. PT attended and contributed with some comments to the final document; the latter will be sent when approved.

PT said it is difficult to collaborate with OECD because they have a very structured office; it is a self-refereeing organization where IUPAC has not yet a role.

EuChemS

ARR is the President of EuChemS Division on Green and Sustainable Chemistry. She pointed out the importance to strength the collaboration plan. A summer school was planned to be organized in Lisbon in August, but postponed because of the pandemic. AAR organized online green chemistry classes for students in Poland. This event can be improved with professors in green chemistry, the output for collaboration between IUPAC-ICGCSD and EuChemS Division on Green and Sustainable Chemistry. PT completed that the collaboration is very useful and this is a good platform for discussions.

ISC

Next point collaboration with the International Science Council (**ISC**). Natalia Tarasova is member of ISC.

7. Projects

Regarding the project Metrics for Green Syntheses https://iupac.org/projects/project-details/?project_nr=2017-030-2-041, PT who is the Chair of the related Task Group, introduced the progress on the IUPAC project; a final conclusion is needed in order to proceed further with a meeting which will be a key moment to proceed to the Project proposal Metrics No. 2 which will deal on Recommendations.

The project on the 17UNSDGs was sent on 14th March and received the evaluation results two weeks ago. This Project followed the Special Symposium held last July in Paris; Dr. Mirabboss Hojamberdiev already collected and presented there the most important IUPAC projects for the last 20 years dealing with 17UNSDGs; this Symposium was organised and coordinated by ICGCSD with the fundamental contribution of the majority of IUPAC Divisions.

The Task Group Chair Mirabboss Hojamberdiev will modify the project proposal in accordance with reviewer's suggestions with ICGCSD inputs related to the budget and collaborations with the other IUPAC Bodies interested/involved in it.

In fact, real collaborations by the Divisions and STCs representatives is absolutely needed.

At this regards, a discussion were conducted by PT also with Robert Audette, Chair of COCI and Jan Apotheker, Chair of CCE. They agreed to collaborate in this project and to co-financed by 2k\$ each.

AM discussed about the results of this project and in the future will be done recommendations and meeting. AM in the name of SAICM and COCI says that will be interested that the result to have a presentation document, webpage, papers, good activities for creating a dialog. Good impact for people will be –short documents, short presentations.

The Chair PT proposed to support the project with 6k\$ from ICGCSD budget, and to ask PC to supply 5k\$ to get 15k\$ project final budget. ICGCSD can contribute to this own generated project because we will not able to meet in person and to spend entirely the 23k\$ of our current 2020-2021 budget. ICGCSD unanimously approved. Mirabboss Hojamberdiev will be invited to revise the project, according to such figures and to include in the task group members of COCI and CEE and Division representatives who will contribute as the real links among their respective division to this important project. PT will inform COCI and CEE about such a conclusion.

8. New project proposal: Systems Thinking in Chemistry for Sustainability: Toward 2030 and Beyond (STCS 2030+), chairs Peter Mahaffy and Stephen Matlin

The new project proposal was introduced by AV. The goals of the project are related to three strands focused on (a) sustainability, (b) formal chemistry education, and (c) chemical industry.

NK highlighted that the idea of this project is excellent and everybody agreed to be pursued.

Since it is necessary to have a closer collaboration between IUPAC Bodies, ICGCSD highlighted the good outcomes of the proposed project and agreed to continue, to support the project with some additional and important proposals. PT informed on the position of COCI at this regards is unfavorable since many concerns originate from the participation and the content of this project as well. Actually it is very important to have collaborations with industry.

Just to start, if ICGCSD will contribute with its own budget, it would be necessary that in the composition of the Task Group Chair(s) needs to be modified. One member from ICGCSD should have a pivotal position in it. AV gave her availability to join Mahaffy, as co-chair and JW and KK said that they are glad to be members of the Task Group.

From COCI side AM is involved in this project and stressed the following: the project is really good in education, ST and organize ST as part of education, but the main problem from COCI side is goal 3- involvement of industry. What is not understand how to do it? What benefits, concrete tools are needed. COCI wants concrete and clear activities in this project.

The position of ICGCSD, interested in this project because the sustainability main goals, is almost the same of COCI. In particular, the support of 2k\$ is allowed on condition of having a co-chair (Aurelia Visa) and two people in the task group (Jane Wissinger, Minnesota University and Klaus Krummerer, Lufthansa University, Germany). We cannot let money continue to be spent in this way without the actors being radically renewed.

ICGCSD agrees with this conclusion and to co-finance the project with 2k\$ from ICGCSD budget.

It was concluded that PT will write to Fabienne Mayer accordingly and will inform COCI and CEE Chairs about.

9. Prizes and awards (PhosAgro, NHU and Chemrawn VII)

- The NHU award is renewed and financed by the corresponding Chinese chemical industry with 20k\$. The objective of NHU award is to encourage young professional chemists and experienced chemists of the importance of advancements in Green Chemistry. The awards will be given during the IUPAC Congress in Montreal 2021.
- Chemrawn VII Award received 3 applications, but the deadline is still open (May 31st). The Chemrawn VII prize (5k\$) is given every two years during the International Conference on Green Chemistry. The current question is that we have to decide according to the conclusion of the Item 10: when will the Athens conference be held?
- Phosagro/UNESCO/IUPAC green chemistry Grants: these grants will not be awarded this year because the coronavirus didn't allow meeting in Paris (informal communication by PT). It will be postponed to the next year 2021.

10. Congress in Athens (October 18-22, 2020) and proposals for 2022

KT presented the situation of the International Conference on Green Chemistry which should hold in Athens October 18-22, 2020. Were received 160 abstracts from 50 countries and was expected 100 more applications. After long discussions with the people and officials from Greece, KT worries about the safe of participants due to the pandemic; therefore, the suggestion was to postpone it.

KK highlighted that the important thing is to lose as little as possible, and KT completed that is hard to decide. NT said that there are two possibilities: in September 2021 together with the EuChemS GC Conference in Thessaloniki or to be in September-October 2022 in Athens. AAR suggests that having a joint conference it will be a good opportunity to stronger the interactions.

Also in 2021 will be the IUPAC General Congress in Montreal. It was decided to wait for the Greek colleagues' final decision. And, in case of cancellation, to hold the ICGCSD conference in 2022, in Athens. PT suggested in the meantime, if permitted by the pandemic, to meet in Thessaloniki in 2021, so strengthening the cohesion among ICGCSD Members and the collaboration with EuChemS Division led by AAR as well. Everybody agreed on this suggestion.

11. Summer School on Green Chemistry in Venice (July 6-10, 2020)

PT reported that these difficult times forced us to deliver the post-graduate Green Chemistry Summer School 2020 by remote. AV, BH and ZL are tightly collaborating to bring it to the success. This would be the first summer school in the world to be delivered by Remote and this is a challenge with all the risks associated therewith.

The website www.unive.it/ssgc is restructured accordingly and will be constantly updated. The Summer School registration fee is reduced to 60 Euro.

The Jury is composed by all the ICGCSD Members who accepted to take this responsibility (17 Persons); the Jury are selecting those students with the strongest CVs and references; the summer school is strictly reserved for students in their latest year of PhD or post-doc.

Moreover, in order to deliver the best possible service to teachers and students, we are taking into strong consideration the different time zones of their Countries of origin; therefore, we are trying to establish 3 hot spots to deliver the lessons: Venice, Beijing and Washington DC.

We expect to have a strong class of qualified teachers as well as high quality students.

12. Any other business

FA, chair of the conference *Combining Biotechnologies, Green Chemistry and Downstream Process to Convert Biomass into Biobased Products* which will be held in Newry, ME, US during May 30 - June 4, 2021, advertised it and ask for IUPAC endorsement (<https://www.grc.org/biomass-to-biobased-chemicals-and-materials-conference/2021/>)

JW announced a conference *The Green Chemistry & Engineering Conference*, June 15-19, (<https://www.gcande.org/>) is now virtual and open to everyone for free and invited us to be part of it.

13. Venue and timing of next Committee meeting

A primary need is that the committee to meet in person in 2021 in Thessaloniki to strength the links to EuChemS. NT supports this idea.

Prof. Pietro Tundo
Chair, IUPAC ICGCSD

PS: lately, PT suggested that ICGSD might initiate the production of a monthly communication to be sent toward an established email addresses, having the aims to inform on relevant initiatives and facts which will be suggested by ICGCSD Members; items to be let know to such international audience includes conferences, projects, workshops and in general the scientific activities dealing with green chemistry and sustainable development.