

53rd International Chemistry Olympiad

Jan 14-15, 2021

Steering Committee Meeting Agenda

A) Members

Elected:

- I-Jy Chang, Taiwan
- Alexander Gladilin, Russia
- JL Kiappes, USA
- Gábor Magyarfalvi, Hungary, chair
- Petra Měnová, Czech Republic
- Martin Putala, Slovakia

Ex officio:

- Yunus Emre Türkmen, Turkey
- Nobuhiro Kihara, Japan
- Dong-Sheng Gao, China
- Patrik Willi, Switzerland
- Badr Al-Majrathi, Saudi Arabia
- Abdallah Elmarhoune, UAE, absent from the meetings

Co-opted:

- Worawan Bhanthumnavin, Thailand

Present in various meetings:

Representatives of Japan: Kohei Tamao, chair of Organizing Committee, Yoshiki Chujo chair of Executive Committee, Hiroshi Nishihara chair of Scientific Committee, Hiroshi Seta Head Office Manager, Shinya Sasaki Head Secretary, and members of the Science Committee

B) Agenda points

Jan 14, Session 1 17.00-20.00 (JST)

1. Introductions

2. Concise report about IChO 2021 plans and preparations

An emphatic welcome convinced all SC members that Japan is fully committed to organizing an IChO in July 2021. They are determined to provide students with an unforgettable experience and encourage students to study chemistry and to get to know Japanese culture. Two scenarios are actively being worked-on: on-site and a remote olympiad.

The organizers enjoy broad governmental and industrial support, and the budget is ensured for both options. The final decision on the format (on-site vs. remote) will be made at the end of February; invitations will arrive, and registration will open in early March.

Participating countries are strongly encouraged to organize national olympiads and work on the selection of their teams. Japan would like to welcome the delegations of all IChO participating countries.

Prof. Nobuhiro Kihara presented outlines of the two scenarios to the SC.

On-site olympiad:

Arrival of the teams is scheduled for July 24th (with a 3-day mock exam/vetting beforehand). The schedule is the conventional IChO format with the closing on Aug. 1st. The participation fee for teams is 3000 USD (4 students and 2 mentors), the observer fee 1500 USD, the guest fee 3000 USD.

Arrival hubs will be Osaka and Kansai International airports. Students will stay in Nara, mentors in Kyoto. Kindai University will host the exams. A handful of cultural visits and activities are planned. OlyExam software will be used throughout the event to comment on, translate and grade the exam.

At the moment immigration controls and epidemic precautions limit travel to Japan. Some social distancing measures will certainly still be in effect in the summer, and some meetings might be limited to video conferences (most importantly the Jury meetings). Lab capacities may be halved.

Remote olympiad:

The tentative schedule starts with an online opening ceremony on July 25th. The theoretical exam is scheduled for July 28th, and the closing ceremony for Aug. 2nd. The processes will use the OlyExam software and Zoom video conferences and a direct messaging tool (e.g. Telegram). Independent local invigilators will administer the exams similarly to 2020.

The proposed registration fee is 1000 USD for teams and 500 USD for observers (1000 USD for guests if any).

Student activities beyond the ceremonies and exam will include virtual reality and other online cultural activities and visits. The aim is to give students a special experience and an attractive program.

The importance of laboratory work will be emphasized by the practical tasks published on the homepage with demonstrations by Japanese students. Videos of the experiments being done all over the world will be solicited from the delegations.

The remote olympiad was very successful in 2020 in Turkey. The event, although prepared on a short notice, proceeded with no difficulties, and the feedback from the participating countries was positive. The organization of a remote Olympiad in situations when in-person gathering is not allowed ensures the continuity of the IChO.

The SC will have another meeting after the decision about the final form of IChO 2021 to review and discuss the details.

3. Overview of participation

- 84 teams with competitors and 6 observers will be invited to IChO 2021.

- All 81 regular member countries will be officially invited by Japan in early March. 21 countries could not participate in the remote IChO 2020, often due to the cancellation of national olympiads. All are hoped to participate this year.
- Liechtenstein has a special status due to their cooperation with Switzerland; however, no student is expected from them in 2021.
- Three new countries will join the olympiad with a team because they finished their observation period in 2020: Bangladesh, Oman, Trinidad and Tobago.
- Afghanistan, Albania, Ecuador, Nepal and Paraguay were recommended to be invited as second-year observers to IChO 2021. They will get close access to the procedures of the olympiad during observation this year, even if the olympiad is remote. These countries will receive extra assistance at their first olympiad from the community if their entire observation period is remote.
- Idealab has applied to represent Egypt as an observer. The SC recommended their invitation. During the observation period they are expected to show a recent national endorsement.

Jan 14, Session 2 21.00-24.00 (JST)

4. Reports from Olympiad organizers

- The IChO 2020 Turkey final report was presented by Yunus E. Turkmen to the Steering Committee. Soon, the official report will be distributed to mentors.

Members of the IChO community praised the organizers in their feedback for taking up the challenge to host an olympiad under adverse circumstances and succeeding in superbly hosting the first remote IChO. This sentiment was shared and voiced by the SC.

The new technical tools of the olympiad (OlyExams for the exams and Telegram for direct messaging) were also very well received. It is planned that their use will continue. The upcoming hosts and the SC will pursue further improvements in OlyExams based on experiences gathered in 2020.

Lessons learned:

- The remote exam format was based in part on trust, and no incident was observed.
- Organizers found the mock exam very beneficial.

Constructive feedback from participants concerned the length and details of the Jury meetings and the arbitration. Both are determined by the interactions of the mentors and organizers – and indeed the IChO procedures need further improvement. Another point was that the challenge of the exams was in the past years compounded with their length and that is a trend that hopefully will turn around.

- 2022 China, Tianjin, Nankai University
Tianjin is easily reached after arrival in Beijing (30 min on train).
The olympiad at Nankai University is widely supported (Ministry of Education, Tianjin municipality, China Association for Science and Technology, Chinese Chemical Society, chemical industries). Finances are assured, and the preliminary budget is around 2 M USD.

Committees were established and are working hard. The Science Committee is meeting monthly and includes experienced IChO mentors.

Two campuses of Nankai University (separated by 30 km) will be used as venues. Lab spaces are being renovated in 2021. Accommodation is being finalized. The SC pointed out that quality student housing is a realistic alternative to hotels.

The tentative timeframe for the olympiad is July 10-20, 2022, a day longer than the practice.

The website and a more detailed program will be presented to the Jury in July.

- 2023 Switzerland
The dates are fixed for July 16-25, 2023. The host institution is ETH Zürich, and accordingly, the arrival city will be Zürich.
Committees were formed and their work already started.
- 2024 Saudi Arabia
The location of the event will be in Riyadh. King Saud University will host the exam. The Ministry of Education is supporting the Olympiad, and the final approval by the Royal Court is expected to arrive in the first quarter of 2021.
- 2025 United Arab Emirates
The UAE was not represented at the meeting. The SC is concerned, because participation is key for an organizer to gather experience about the complexities of organizing an olympiad. Work should already have started for 2025.
- 2026 and later – there are no confirmed future hosts yet. The SC encourages countries with interest to come forward as soon as possible and will try to assist all interested parties. Even though student numbers increase, challenging laboratory exams can be organized without 350 conventional chemistry laboratory seats.

5. Discussion of financial support

Countries having difficulties to raise their participation fee can receive support. A part of the funding comes from organizations: IUPAC (2500 USD), the Chinese Chemical Society at Taipei (-2021, 2000 USD) and the American Chemical Society (-2021, 2000 USD). A portion of the participation fees can be redirected from other countries' fees. The allocation of the support is the task of the SC. The details of the procedure will be worked out after the circumstances of the 2021 IChO are fully clear. A fast application and decision process will be put in place and participating countries will be informed after the February SC meeting. Full (100%) support will not be given out unless extremely well justified.

6. Business issues

A set of proposed minor regulation changes is already in circulation since 2018 and was discussed and supported by the Jury in 2019. This set (attached to the minutes) will be introduced for acceptance in 2021.

If the IChO in 2021 will have to be again organized remotely, the set of extraordinary regulations approved for 2020 will have to be accepted by the supermajority of participating countries for 2021.

Another issue that the SC would like to propose concerns the arbitration procedure. Now the marking by the mentors and the authors are compared by the mentors, and this is also ensured by the Regulations. However, the method used by other olympiads when marks are mutually shared is much more just, and it is already implemented in OlyExams. Authors have very limited time for marking and can overlook mistakes.

The SC recommends that the Jury accept this deviation from the regulations in 2021 (2/3rd majority required) and change the regulations accordingly if the trial is successful.

Election of the SC members was not carried out in 2020 and the mandate of the members was extended. However, in 2021 the term of four 4 SC members will expire. No matter if remote or in person, elections will take place. The election process (nominations, introductions) will be organized by Martin Putala and Gabor Magyarfalvi. Election of the SC Chair for 2022 will be organized by Yunus E. Türkmen.

7. Miscellaneous issues

Sasha Gladilin reported on the Metropolis Olympiad that was organized remotely and included a well-designed remote laboratory part. Although not feasible for a remote IChO this year, and hopefully not necessary in the future, national competitions can think of similar set-up for their local competitions.

Volunteers from the SC will try to compile a set of exemplary IChO problems for the benefit of future exam boards. Petra Menova will lead this effort.

Established practices from the past years will be followed: The Jury meeting chairs, and co-opted SC members will be nominated by host countries and formally approved by the SC in a secret ballot. Voting procedures and results in the Jury will be transparent to all Jury members. A mock exam will be organized to anticipate and preclude extensive discussions in the Jury. Attempts will be made to improve the flow of the Jury meetings and arbitration sessions while keeping discussions open and amicable. Meeting rules from Paris (speaking order, seconding, etc.) will be kept in effect.

Jan 15, Session 3 17.00-20.00

Jan 15, Session 4 21.00-24.00

8. Discussion of preparatory problems

Steering Committee members received the draft preparatory problem set for review before the meeting. They provided feedback on the actual questions to authors who were receptive to suggestions. Generally, the individual problems were found to be well-written, in line with olympiad practices, and providing interesting challenges to students. The length of some problems and of the whole set is exceeding past examples.

An emphatic part of the discussion was where the SC members called the attention of the authors to the regulation examples for advanced fields. Although the number of fields nominally complied with regulations, some were broader than the typical examples (in Appendix C of the regulations).

SC members emphasized that questions not explicitly listed in the syllabus or the prep. problems can still appear in the exams if sufficient explanation is given. Also, if preparatory problems touch on advanced concepts that are not necessary for the preparation to the olympiad, then these topics might be added to the list naming these extra topics.

The finalization of the prep. problems can only be made by the local Science Committee based on the discussion points considering the planned olympiad exam. Utmost care was taken that the SC members do not receive any clues about the competition tasks. The preparatory problems will be released at the end of January.

9. Review of the final IChO schedule and details will take place at an additional SC meeting with Japanese organizers (tentative date: Feb. 27th)