



TOGETHER WE SUCCEEDED!

thank you



MUSTAFA VARANK

Minister of Industry and Technology of the Republic of Turkey

Distinguished Young and Future Scientists, Ladies and Gentlemen

Welcome to the International Chemistry Olympiad award ceremony.

I am very pleased to address you today.

We are hosting this Olympiad in Turkey for the second time since 2011.

We wish we could have welcomed you in Istanbul as our honored guests.

As you know, we had to organize this event virtually due to the pandemic.

Yet we are doing our best to keep its spirit alive.

Since March, we have all realized that science is the only weapon to fight this battle.

And chemistry is the most

powerful tool we have.

I hope you have enjoyed the last 6 days, which were full of excitement, hard work, and, of course, sleepless nights.

We are grateful for **your efforts**.

Here we have two hundred thirty-five high school students from sixty countries.

I would like to congratulate all of you who have taken on the responsibility of making the world a better place in the light of science.

We are very proud of you, like your families and teachers are.

Dear Students,

Let me give you one simple piece of advice.

When it comes to science, go as far as you can...

Your limit is indeed beyond the sky.

Needless to say, there is an exponential growth in science and technology.

No one can predict its outcome from today to tomorrow.

What we know for sure, it will change our life drastically from what it is today.

Fundamental sciences, such as chemistry, physics, biology, and mathematics will continue to grow.

Keep your eyes open and follow your passion.

And of course train yourself both scientifically and socially.

What we need is well-educated and curious young generations who have a holistic view about the world.

Let me finish here by quoting the distinguished Professor Richard Feynman.

He says:

"Nobody ever figures out what life is all about, and it doesn't matter.

Study hard what interests you the most, in the most undisciplined, irreverent and original manner possible."

I congratulate you all again.

Take care and be safe!

Good bye



PROF. DR. HASAN MANDAL

President of the Scientific and Technological Research Council of Turkey

Excellencies, Minister of Industry and Technology, Distinguished Scientists and Mentors, Olympiad Team Members, Students, and Guests,

As President of the Scientific and Technological Research Council of Turkey, TÜBİTAK, I express my greatest pleasure in **hosting the 52nd International Chemistry Olympiad in Turkey**, a country where the continents and cultures **bond** as in our ceremony today.

In the name of our Council, I am most honored to have welcomed **235 talented young scientists from 60 countries and 8 observer countries** in this year's Olympiad.

"Chemistry for a Better Tomorrow" is the theme that brought us all together and you are the chemists that will create a better future for humanity as a whole.

Chemistry is the energy of life and a cross-cutting discipline in support of the future that we want to see. Chemistry provides contributions to biotechnology, molecular biology, pharmacy, and environmental and material sciences, among many others.

Knowledge of chemical compounds is also opening up exciting new frontiers in the way that we are able to manage and treat the COVID-19 infection caused by the SAR-CoV-2 virus to make an impact for a **healthier society during the ongoing pandemic**.

Among these compounds, drugs with the **active ingredient Favipiravir that has a molecular weight of 157.1 grams per mole (g/mol)** is effectively used in treatments.

Chemistry also plays a role not only in treatments but also in other solutions, such as vaccine development, where **innovations in biotechnology and chemistry are essential for vaccine stability and preservation**, as well as chemical reagents for diagnostic kits.

Our Laurate Prof. Dr. Aziz Sancar, who received the 2015 Nobel Prize in Chemistry for the **mechanistic studies of DNA repair**, also combined chemistry with its interactions for health.

Now in Turkey, the **COVID-19 Turkey Platform** has been initiated by TÜBİTAK with **intense multi-disciplinary interactions among 400 plus researchers to make an impact.**

Beyond collaboration, this multidisciplinary interaction with a culture of sharing resources and research infrastructure across a wide range of actors in our ecosystem defines an important trend that we call **“co-creation”, which is revolutionizing the research landscape.**

With co-creation, the **actors in the ecosystem bond together with a common goal and interact openly to realize the impact that will have a transformative effect.**

As future chemists, scientists, and researchers, we sincerely hope that all of the **bright minds at this ceremony will apply co-creation** when interacting with the respective fields, because this is **what is needed to transform our world for the better.**

□ **It is with “co-creation” that the ecosystem can achieve the impact that is urgently needed, including for a healthier and sustainable society.**

□ **It is with “co-creation” that the potential of our human resources can be multiplied because of teamwork.**

□ **It is with “co-creation” that qualified knowledge that is dispersed in the ecosystem can come together to reach higher levels of achievement.**

All of these important characteristics are also **what define the dedicated researchers and Olympians of our future societies** since we need collaborative teams that can join hands when addressing challenges and advancing our knowledge to reach new heights.

According to the World Economic Forum, data-driven processes will create **a new era in medicine by the year 2025.** Chemistry will also support solutions for grand challenges, including new materials for energy transition and the elimination of CO₂ emissions.

The pandemic situation has also allowed us to elevate food supply security and biosecurity among our priorities, which also necessitates **a firm understanding of biochemistry as a powerful tool** not only for medicine but also for agriculture and food science.

By the year 2025, most of the bright minds at this ceremony will have completed their undergraduate degrees and will be in the process of **deciding on the direction of their graduate studies to become top researchers in universities and industry.**

Image your future careers and realize that your presence here

today as an Olympian will open up many important paths for you to make an impact in the world **with a strong knowledge of chemistry that cross-cuts multiple other disciplines.**

It is my advice to always have a **connected view of chemistry**, whether **theoretical chemistry, materials and nanotechnology, sustainable development, health technology, agricultural technology, renewable energy, or others.**

As you seek connections with a better tomorrow and societal challenges, you will also **discover your potential to generate solutions from health to global climate change.**

Regardless of whether or not a medal is received at this Award Ceremony, you are an Olympian who has accomplished great success that is only a beginning of many more to come.

As young talents that have reached a high peak based on this Olympiad, let me emphasize that this peak is only the **first step in a continuous process.**

The challenges that require contributions from chemistry are endless and the solutions that YOU can provide to these challenges are without bound.

Challenge the future and challenge your excellent skills in chemistry to find solutions that will make a positive impact for a better and more sustainable tomorrow.

TÜBİTAK together with the Ministry of Industry and Technology has had great pleasure in hosting this **memorable Olympiad.**

Let me express my utmost and sincere appreciation to the Academic Committee and all the distinguished scientists, mentors, and teams, who made this Olympiad memorable.

This Olympiad has been memorable because it represents **how science and technology can combat the challenges that we are facing, including the pandemic.**

This Olympiad is also memorable because it represents a **similar approach that our future talents will need to take to tackle the challenges that require new solutions.**

I sincerely believe that the **excitement of the 52nd International Chemistry Olympiad that we had the greatest pleasure of sharing** will continue as we hand over the IChO flag to our colleagues from Japan who will host the upcoming 53rd International Chemistry Olympiad.

Thank you and best wishes for the continued success of IChO.

PROF. DR. ARIF DASTAN

Chairperson of Academic Committee



Dear Guests, Participants, Colleagues;

Dear Distinguished Scholars, Mentors, Students, Observers;

Dear Friends, Welcome to the IChO 2020 Turkey 52nd International Chemistry Olympiad. I feel privileged to be the Head of the Scientific Committee of this very important, challenging, and high-level scientific event.

As the host, we are happy to organize for the first time ever a virtual Chemistry Olympiad. We were expecting to host you in charming Istanbul but we hope there will be a chance to do so in the future. We tried our best to realize the on-site Olympiad, but this was not possible due to the global Covid pandemic. Actually, we were almost ready for the real Olympiad.

Anyway, we changed our plan and organized a remote access exam. Fulfilling this plan, despite the difficulties, is very important for us because we know that all of the Olympiad students, their families, their teachers, their mentors, and their countries put in a lot of effort to be able to participate. We could not ignore this.

After the decision to have a remote access exam, we planned to hold the exam on July 25 so that more countries could participate. Two hundred forty students from sixty countries registered for the IChO 2020 event, and we have eight observing countries. Twenty-two countries could not participate, as they were not able to *select and train their national teams*.

As the scientific committee, we have tried our best to make the content challenging, fair, and objective. We have attempted to produce novel, unusual, and challenging problems in order to select successful Olympiad medalists. We added relevant stories to the problems related to Turkey's structure and culture. I hope you have fully enjoyed the preparatory and actual exam problems.

This is a most extraordinary year but we have forced ourselves to take up new habits. We adapted the Oly-Exam Software to the IChO for the first time. In addition, we didn't want to

abandon our tradition, the Catalyzers, and we published more than ten issues. We hope you enjoy the Catalyzer magazines too.

As stated in our motto, chemistry is very important for a better tomorrow. So, dear students, as young, intelligent people chosen from your countries, your contribution to science and chemistry is very important for the future of the world. During the pandemic period, we again understand that science, especially chemistry, is of great importance for a better tomorrow.

Dear students, the medal winners will be announced shortly. The medals will be awarded according to your performance in the exam. I want to remind you that non-medalist students are also winners. They are winners because they have been selected from among millions of candidates. They are winners as they love and choose science and chemistry. I believe that you will maintain your

interest in chemistry.

We know that the human brain is the actual catalyst of all processes. Therefore, you are our future and our hope. It is our pleasure to see that your path will lead to your future. As Turkish Nobel Laureate Professor Doctor Aziz Sancar said: "whatever you do, do it well and work hard!"

Finally, once again I want to thank all participants, students, their parents, their teachers, and their mentors. I want to thank TÜBİTAK, including the Chair, Professor Doctor Hasan Mandal, Professor Doctor Feza Korkusuz, and all TÜBİTAK staff.

Special thanks also to our scientific committee, the IChO Steering Committee, and all my colleagues for their valuable contributions.

Enjoy the ceremony and results.

I wish the best of luck to you all.

PROF. DR. GABOR MAGYARFALVI

Chair of the Steering Committee

Dear participants of the 52nd Remote International Chemistry Olympiad,

I am recording this message in advance, eagerly awaiting this event that is unique out of necessity.

You will hear me at the very end of the Olympiad when the mood usually is very special. Faces are smiling, students are happy with the accomplishments of many years of work. And practically no one is paying attention to speeches.

I hope this special mood will be there this year even though the Olympiad was different due to the circumstances. You did not get to meet each other, you did not get to travel to magnificent Istanbul, and you did not take a boat ride on the Bosphorus. You did not get to work in a laboratory what is so important in the study of chemistry. Unfortunately, some countries could not send their students due to the global pandemic.

I still hope that you still enjoyed the challenge of the tasks, you enjoyed learning about the new chemistry in those tasks. I myself am looking forward to seeing those tasks tomorrow when I will be taking a test exam during the preparations.

I congratulate your results. I am quite sure that many of you did better than I will do tomorrow. I am certain that you enjoyed the

road that took you here.

Now, I take the liberty of speaking on behalf of you and thanking your teachers and mentors who paved the road in front of you. Let us think of how many people are involved in the Olympiad. There are more than eighty countries where students prepare. In each country there are numerous students, their teachers, mentors, so many thousands are involved in the Olympiad.

This would be the moment when all of us would be clapping and applauding the organizers of this Olympiad. They had a very unique challenge this year and I am sure that they fulfilled their role and solved that challenge wonderfully.

Let us thank the organizing committee, the science committee, the staff of TÜBİTAK, the agency who organized the details of the Olympiad. We all, all over the globe appreciate your work. Thank you.

I declare the 52nd Remote International Chemistry Olympiad closed.

Thank you.

ANALYSIS OF IChO 2020 PROBLEMS

IChO

52nd IChO 2020
International Chemistry Olympiad

Istanbul, Turkey

60
COUNTRIES



166 ACADEMICS



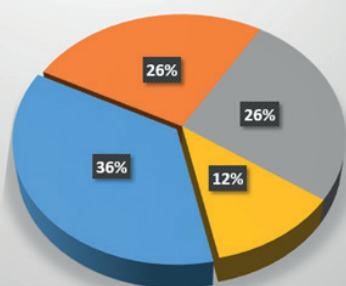
235 FUTURE SCIENTIST

23.07.2020-29.07.2020



Percentage of Problems by Subject

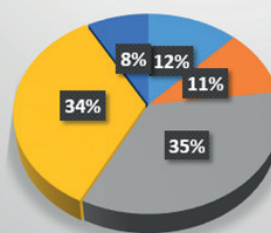
- Organic Chemistry
- Physical Chemistry
- Inorganic Chemistry
- Analytical Chemistry



Two Beauties of Turkey: the Van Cat and the Ankara Cat

Average points/Total points

$$5.26/8 = 65.8\%$$



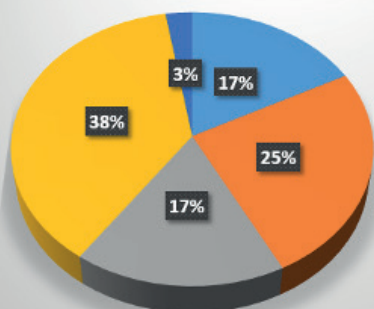
Point Range

- 0-3.5
- 4-9.5
- 10-19.5
- 20-23.5
- 24-24

A Tale of a Reactive Intermediate

Average points/Total points

$$5.46/10 = 54.6\%$$



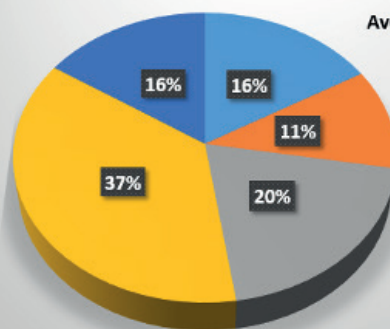
Point Range

- 0-10
- 11-39
- 40-59
- 60-76
- 77-77

(±)-Coerulescine

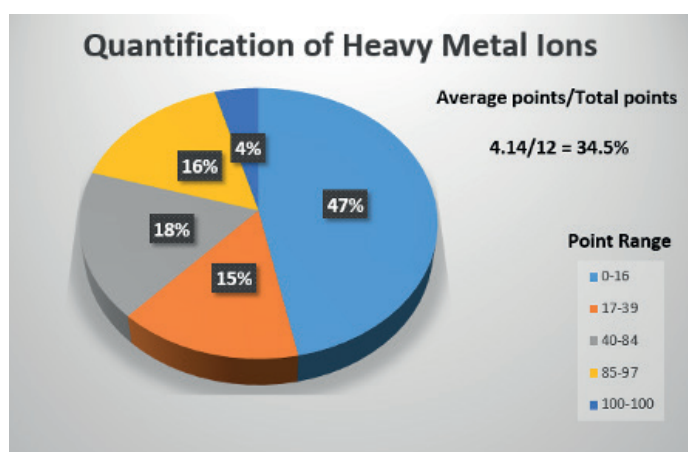
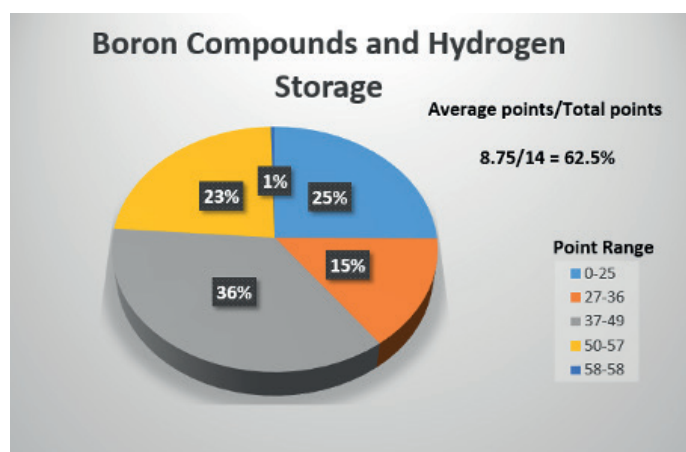
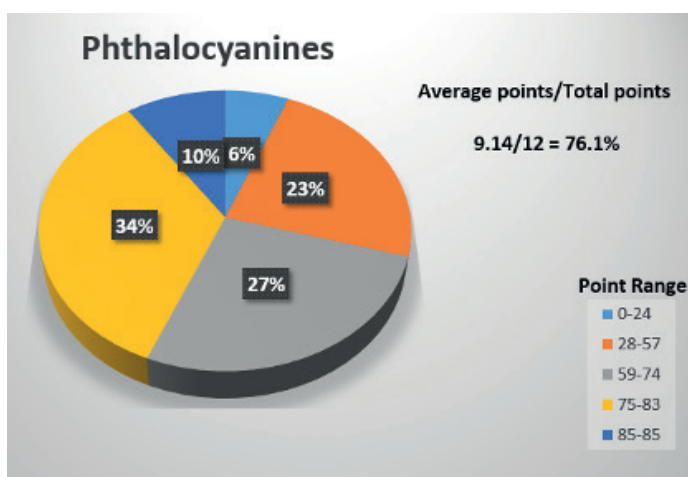
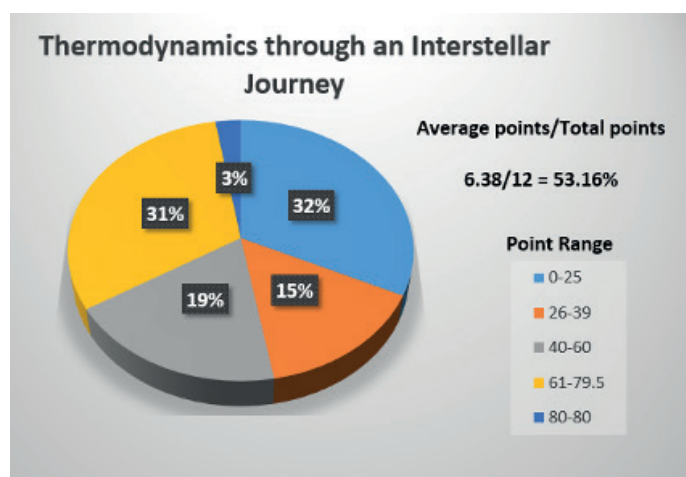
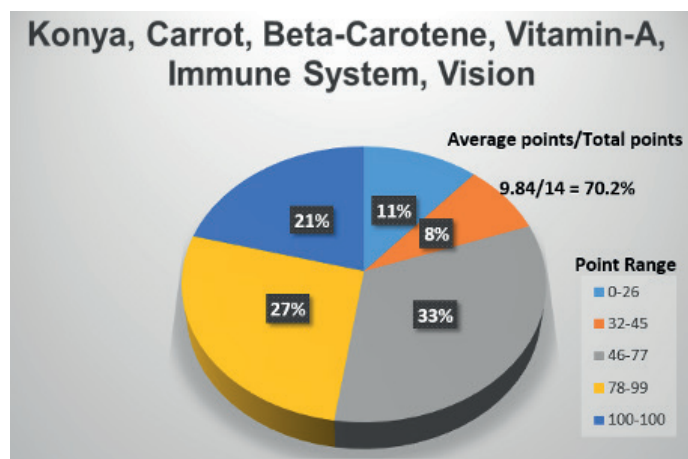
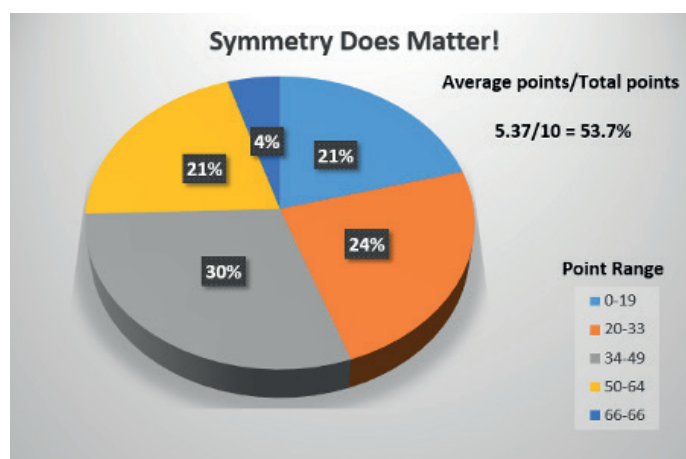
Average points/Total points

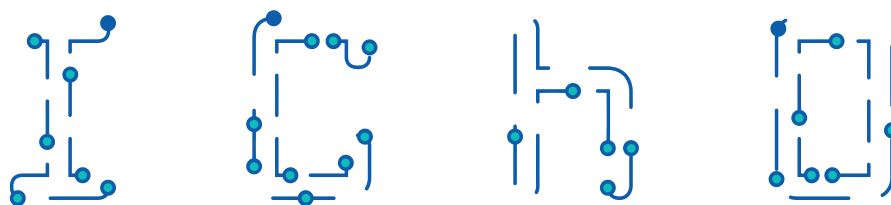
$$5.42/8 = 67.7\%$$



Point Range

- 0-11
- 12-29
- 30-39
- 40-50
- 51-51





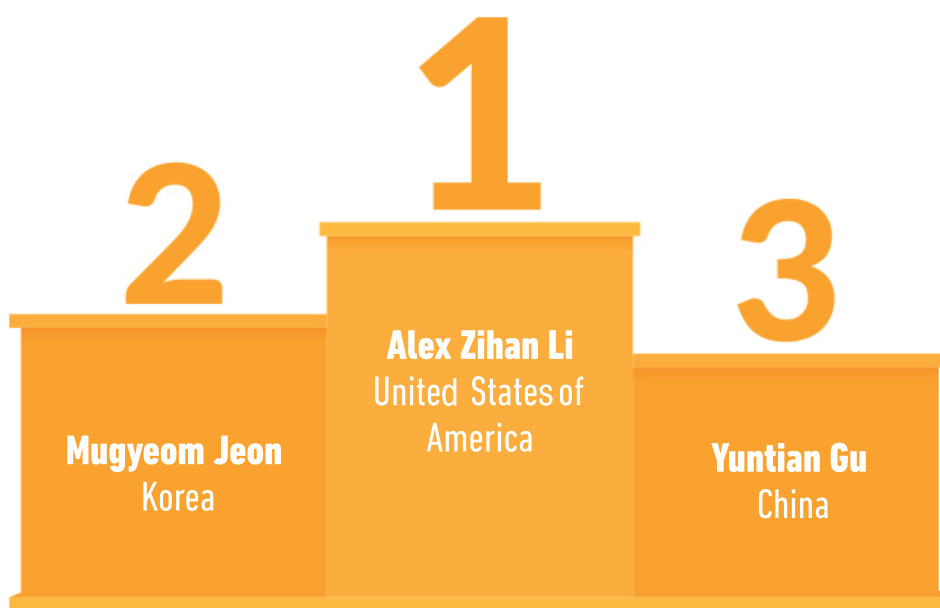
52nd IChO 2020

International Chemistry Olympiad

Istanbul, Turkey

IChO 2020 RESULTS

Best of IChO 2020



GOLD MEDAL

Rank	Name	Surname	Country	Total	Medal
1	Alex Zihan	Li	United States of America	99,07	gold
2	Mugyeom	Jeon	Korea	98,60	gold
3	Yuntian	Gu	China	98,07	gold
4	Zhuo Yang	Zhang	China	97,07	gold
5	Dang Hai	Ly	Vietnam	96,97	gold
6	Letian	Li	China	96,55	gold
7	Şebnem	Gül	Turkey	96,48	gold
8	Alec Chen	Zhu	United States of America	95,98	gold
9	Duong Hoang	Nguyen	Vietnam	94,08	gold
10	Mohammad Shahabaddin	Daneshvar	Iran	93,51	gold
11	Jan	Oboril	Czech Republic	93,23	gold
12	Ananthan	Sadagopan	United States of America	92,98	gold
13	Agustin Alejandro	Lorusso Notaro Francesco	United Kingdom	92,71	gold
14	Sean	Leong	Singapore	92,62	gold
15	Anh Quoc Trung	Pham	Vietnam	92,50	gold
16	Heng-Jui	Chang	Chinese Taipei	92,42	gold
17	Junha	Hong	Korea	92,15	gold
18	Deniz	Güner	Turkey	92,15	gold
19	Ilia Dmitrievich	Chaika	Russian Federation	92,11	gold
20	Richard Yanzhou	Huang	Australia	92,01	gold
21	Shih Peng	Huang	Chinese Taipei	91,99	gold
22	Trang Minh Thi	Dam	Vietnam	91,38	gold
23	Charles Jordi	Windle	Singapore	91,31	gold
24	Anugrah George	Chemparathy	United States of America	91,29	gold
25	Jovan	Liau	Singapore	90,92	gold
26	Roi	Peer	Israel	90,35	gold

SILVER MEDAL

Rank	Name	Surname	Country	Total	Medal
27	Meng-Fu	Chen	Chinese Taipei	89,89	silver
28	Tomasz Jan	Slusarczyk	Poland	89,85	silver
29	Junha	Park	Korea	89,61	silver
30	Teng Wei	Ngwan	Singapore	89,59	silver
31	Mirakbarov Xodjiakbar O G Li	Mirumid	Uzbekistan	89,27	silver
32	Haonan	Sun	China	88,91	silver
33	Jan	Vavrin	Czech Republic	88,90	silver
34	Ygor De Santana	Moura	Brazil	88,73	silver
35	Evgeniy Yurievich	Epifanov	Russian Federation	88,67	silver
36	Chien-Yi	Wu	Chinese Taipei	88,34	silver
37	Nikita	Zoglo	Estonia	88,23	silver
38	Magdalena	Lederbauer	Austria	87,02	silver
39	Worawit	Tangamornchaipattana	United Kingdom	86,95	silver
40	Maximilian	Mittl	Germany	86,43	silver
41	Mohammadaryan	Taghvaeearabi	Iran	86,20	silver
42	Kamil	Kubanychbek	Kyrgyzstan	85,44	silver
43	Vasilisa Vadimovna	Kislitsyna	Russian Federation	84,98	silver
44	Ayça Melis	Keskin	Turkey	83,95	silver
45	Alexander Ramsey	Thow	United Kingdom	83,34	silver
46	Ron	Shprints	Israel	83,31	silver
47	Akito	Ai	Japan	83,23	silver
48	Maximilian	Spitaler	Austria	82,66	silver
49	David	Benko	Hungary	82,49	silver
50	Bar	Sheffer	Israel	81,80	silver
51	Levon	Kharatyan	Armenia	81,15	silver
52	Dilshodakhon Kamolkhon Kizi	Isaeva	Uzbekistan	81,04	silver
53	Minjeong	Lee	Korea	80,45	silver
54	Martin	Brokes	Slovakia	80,37	silver
55	Filip	Koldzic	Serbia	80,35	silver
56	Ayşe İrem	Durmuş	Turkey	80,29	silver
57	Wasin	Tiarawut	Thailand	80,20	silver
58	Rtvik	Patel	United Kingdom	80,00	silver
59	Yuma	Yoshida	Japan	79,72	silver
60	Ramin	Assempour	Iran	79,61	silver
61	Zarko	Ivkovic	Serbia	79,42	silver
62	Michael Cole Moises	Tantoco	Philippines	79,27	silver
63	Viktor Gennadievich	Nosov	Russian Federation	79,16	silver
64	Filip	Hulek	Czech Republic	78,99	silver
65	Chananthorn	Arssiri	Thailand	78,51	silver
66	Ivan Candra	Gunawan	Indonesia	78,49	silver
67	Jirapat	Rujirayuk	Thailand	78,48	silver
68	Khanim	Yagublu	Azerbaijan	78,43	silver
69	Frederik Laurin	Walter	Germany	78,40	silver
70	Abhichaya	Tungwongkitsiri	Thailand	78,39	silver
71	Jovan	Markovic	Serbia	77,98	silver
72	Rinako	Hayashi	Japan	77,97	silver
73	Reo	Shibayama	Japan	77,92	silver
74	Mark	Soesanto	Indonesia	77,49	silver
75	Damyan Stoyanov	Frantzov	Bulgaria	77,30	silver
76	Filipp	Petuhhov	Estonia	77,08	silver

BRONZE MEDAL

Rank	Name	Surname	Country	Total	Medal
77	Michal Piotr	Lipiec	Poland	75,47	bronze
78	Linus Albert	Schwarz	Germany	75,40	bronze
79	Caleb Hsien-Yen	Hsiung	Australia	75,03	bronze
80	Kevin Arturo	Urrutia Alvarez	El Salvador	74,89	bronze
81	Amir	Mahboubi	Iran	74,75	bronze
82	Hung	Nguyen	Canada	74,13	bronze
83	Pedro Yudi	Honda	Brazil	73,80	bronze
84	Khaidar	Kairbek	Kazakhstan	73,38	bronze
85	Azhdar	Farzullazade	Azerbaijan	73,00	bronze
86	Steven	William	Indonesia	72,93	bronze
87	Osama	Alali	Saudi Arabia	72,73	bronze
88	Uvindu Praveen	Sumanasekara	Sri Lanka	72,63	bronze
89	Thiago Jose Veloso	De Souza	Brazil	71,65	bronze
90	Pavel Atanasov	Nikolov	Bulgaria	71,11	bronze
91	Istvan David	Ficsor	Hungary	70,62	bronze
92	Adam Szymon	Sukiennik	Poland	70,27	bronze
93	Fernando Juan Jose	Rodriguez	Venezuela	70,01	bronze
94	Abilmansur	Muzhubayev	Kazakhstan	69,68	bronze
95	Nathan Wayne Fontanilla	Ariston	Philippines	69,08	bronze
96	Kamil	Mambetov	Kyrgyzstan	68,73	bronze
97	Teodor Svilenov	Maslyankov	Bulgaria	68,43	bronze
98	Stefan Marcus Ang	Ong	Philippines	68,27	bronze
99	Samuel	Novak	Slovakia	68,08	bronze
100	Andrej	Kovacs	Slovakia	67,86	bronze
101	Shahzod	Nazirov	Tajikistan	67,60	bronze
102	Davi Medeiros Fortunato	Catanhede	Brazil	67,50	bronze
103	Wojciech Jan	Michalski	Poland	66,81	bronze
104	Vasilije	Pantelic	Serbia	66,21	bronze
105	Ioannis	Karageorgiou	Greece	66,03	bronze
106	Dzonatans Miks	Melgalvis	Latvia	66,01	bronze
107	Nursultan	Soodonbekov	Kyrgyzstan	65,73	bronze
108	Bakdaulet	Seysenkul	Kazakhstan	65,67	bronze
109	Filips	Ecis	Latvia	65,58	bronze
110	Arulanantham	Abbinanthan	Sri Lanka	65,46	bronze
111	Ursa	Konda	Slovenia	65,24	bronze
112	Aleksandar	Trajkovski	North Macedonia	64,75	bronze
113	Jakub	Schimmer	Czech Republic	64,71	bronze

BRONZE MEDAL

Rank	Name	Surname	Country	Total	Medal
114	Povilas	Dapsys	Lithuania	64,61	bronze
115	Anete Patricija	Raiskuma	Latvia	63,57	bronze
116	Ward	Yahya	Israel	63,05	bronze
117	Bulcsu	Fajsz	Hungary	61,77	bronze
118	Rifqi Naufal	Abdjul	Indonesia	61,76	bronze
119	Tom Erik	Steinkopf	Germany	61,40	bronze
120	Mohammad	Bilal	Syria	61,33	bronze
121	Kibriyanur	Abdugafarova	Kazakhstan	61,18	bronze
122	Artyom	Petrosyan	Armenia	61,10	bronze
123	Karam	Khaddour	Syria	60,81	bronze
124	Maciej Krzyszt	Swiatek	Austria	60,75	bronze
125	Gerardo Manuel	Ramirez Valladares	El Salvador	60,47	bronze
126	Andrei Mihai	Banica	Canada	60,21	bronze
127	Abdulaziz	Aljuaid	Saudi Arabia	59,77	bronze
128	Edvards Mikelis	Mezciems	Latvia	59,66	bronze
129	Ghayrat	Samiev	Tajikistan	58,66	bronze
130	Eyad	Alsahhi	Saudi Arabia	58,17	bronze
131	Jasmin Maria	Frei	Switzerland	58,08	bronze
132	Justin Qi Hua	Cheng	Canada	57,49	bronze
133	Ravindu Sanwara	Rathnayake	Sri Lanka	57,43	bronze
134	Mohammad	Alhudaithi	Saudi Arabia	57,24	bronze
135	Sariena	Ye	Australia	57,19	bronze
136	Laurens	Smulders	Netherlands	56,90	bronze
137	Nicholas Jiawei	Wu	Australia	56,82	bronze
138	Georgi Neliyanov	Nedyalkov	Bulgaria	56,51	bronze
139	Matus	Tomco	Slovakia	56,28	bronze
140	Abraham	Antonio Pineda	Mexico	56,17	bronze
141	Firdavs	Sobirov	Uzbekistan	56,16	bronze
142	Istvan Attila	Garamvolgyi	Hungary	56,08	bronze
143	Humberto	Tovar Salazar	Mexico	55,79	bronze
144	Lukas	Rost	Austria	55,54	bronze
145	Valentas	Olikauskas	Lithuania	55,29	bronze
146	Adam	Modic	Slovenia	54,54	bronze
147	Patrik	Znidarsic	Slovenia	54,33	bronze
148	Aleksandr	Beditski	Estonia	54,31	bronze
149	Ron Angelo Atienza	Gelacio	Philippines	53,64	bronze

HONORABLE MENTION

Rank	Name	Surname	Country	Total	Medal
150	Akobir Azamat Ogli	Narzullaev	Uzbekistan	52,36	honorable mention
151	Lennart Eneas	Horn	Switzerland	52,01	honorable mention
152	Konstantinos	Karakaras	Greece	51,83	honorable mention
153	Jorge	Garcia Ponce	Mexico	51,53	honorable mention
154	Axel	Dian	France	51,24	honorable mention
155	Nikolaos	Tsakiris	Greece	51,18	honorable mention
156	Mathieu	Salzburg	France	50,13	honorable mention
157	Thomas	Arkwright	France	48,49	honorable mention
158	Hasan	Abdul Rahman	Syria	48,12	honorable mention
159	Marcelo Josue	Escalante Barrera	El Salvador	47,58	honorable mention
160	Emile Norbert	Eeckhoudt	Belgium	47,17	honorable mention
161	Darko	Stojchev	North Macedonia	46,81	honorable mention
162	Tadas	Danilevicius	Lithuania	46,12	honorable mention
163	Tomas	Kvietkauskas	Lithuania	45,91	honorable mention
164	Shakindi Vihangana	Mahanaida Badalgei	Sri Lanka	44,60	honorable mention

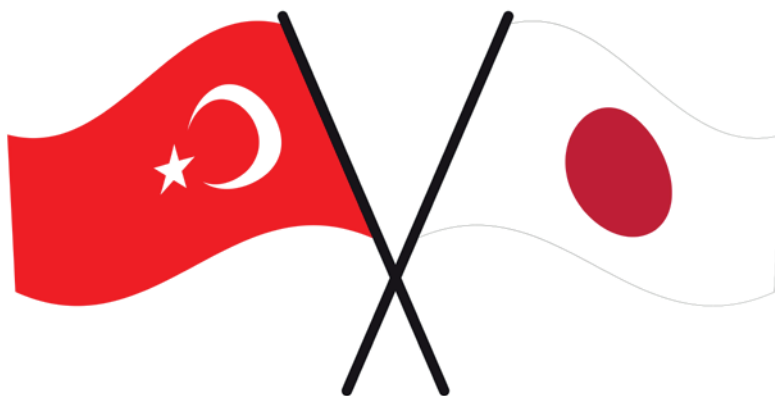
Rank	Name	Surname	Country	Total
165	Sajjan	Raja	Pakistan	44,14
166	Edward	Chen	Canada	43,91
167	Ali	Alhasan	Syria	43,70
168	Nino	Abesadze	Georgia	42,50
169	Altti Olavi Juhanpoika	Makela	Finland	42,23
170	Alfredo Alessandro	Martinez Jimenez	El Salvador	42,14
171	Jens Peter	Nielsen	Denmark	41,63
172	Anne-Sophie Denise	Tilleman	Belgium	41,58
173	Ioane	Kapanadze	Georgia	41,14
174	Michael Ciaran	Gadaloff	Ireland	38,28
175	Samuel Joonatan	Klaver	Finland	38,06
176	Pascal Damain	Ojochide	Nigeria	37,67
177	Augusto	Palotti Amado	Uruguay	37,27
178	Ceri Jean	Arnott	Ireland	37,02
179	Wamiq Ali	Shaikh	Pakistan	36,97
180	Dimitrios-Polykarpos	Karakostas	Greece	36,20
181	Daniel Alexander	Isler	Switzerland	35,73
182	Ivana Sofia	Espinoza Bojorquez	Mexico	35,01
183	Said	Gasimov	Azerbaijan	34,60
184	Muhammad Hazim Bin	Saleem	Pakistan	34,54
185	Joao Pedro	Bonito Caldeira	Portugal	34,29
186	Jesus Alejandro	Colmenares	Venezuela	33,92
187	Ravshanoy	Mu	Tajikistan	33,86
188	Joseph Michael	Martyn	Ireland	33,59
189	Leonid	Sajkov	North Macedonia	33,56
190	Auriel	Guarino	Ireland	32,38
191	Dante	Breitwiller	France	32,29
192	Örn Steinar	Sigurbjörnsson	Iceland	31,26
193	Simon	Pitte	Belgium	31,13
194	Pascal	Otjens	Netherlands	30,05

Rank	Name	Surname	Country	Total
195	Agustin Marcelo	Di Salvatore Vomero	Uruguay	29,68
196	Danijel	Aleksic	Montenegro	29,13
197	Mihail	Trajkov	North Macedonia	29,04
198	Salman	Huseynov	Azerbaijan	28,49
199	Netta Karoliina	Karjalainen	Finland	28,41
200	Gagok	Tadevosyan	Armenia	28,36
201	Henrik Elias	Solheim	Norway	28,03
202	Jerome	Mayolet	Belgium	27,35
203	Blaz	Frelih	Slovenia	27,16
204	Wanjing	Li	Norway	26,85
205	Mathias Abildgaard	Alminde	Denmark	26,83
206	Thomas Svava	Mortensen	Denmark	25,99
207	Birta Rakel	Oskarsdottir	Iceland	25,57
208	Casper	Tops	Netherlands	24,71
209	Beatriz	Crisostomo Valerio Figueiredo	Portugal	24,25
210	Avtandil	Giorgadze	Georgia	24,02
211	Amna	Qaisar	Pakistan	23,42
212	Nursultan	Raimjanov	Kyrgyzstan	22,83
213	Miguel	Rodrigues Carrilho Borges	Portugal	21,78
214	Valentijn	Tromp	Netherlands	21,29
215	Oluwasola Mervelous	Olurankinse	Nigeria	20,50
216	Albert	Shang	Switzerland	20,44
217	Pavle	Dzuverovic	Montenegro	19,64
218	Solange Alejandra	Montero Gelves	Uruguay	18,42
219	Andrija	Djurovic	Montenegro	18,28
220	Kristin Sif	Daoadottir	Iceland	18,03
221	Emil Andsbjerg	Holm	Denmark	17,56
222	Aren	Hakobyan	Armenia	16,87
223	Ugonna Samuel	Umeh	Nigeria	15,26
224	Candela Soledad	Gomez Da Costa Leites	Uruguay	14,41
225	Baldur	Daoason	Iceland	14,13
226	Samu Matias	Huovinen	Finland	11,89
227	Ana Leonor	Alves Banquart Leitaó	Portugal	10,62
228	Vuk	Ljumovic	Montenegro	9,40
229	Mukhammadzhon	Otakhonov	Tajikistan	9,18
230	Nino	Khelidze	Georgia	8,26
231	Joshua Omachonu	Abdullahi	Nigeria	8,01



IChO

FLAG HANDOVER CEREMONY



TURKEY AND JAPAN



Prof. Dr. Hasan Mandal

President of the Scientific and Technological Research Council of Turkey

Esteemed Minister of Industry and Technology, Distinguished Scientists and Masters, Olympiad Team Members, Students, and Guests;

Now that the flag of the International Chemistry Olympiad has been handed over to our colleagues in Japan, it gives me great pleasure to start the process that will continue the excitement of today and successfully lead to the 53rd International Chemistry Olympiad.

For the Olympians here today, indulge in your deep knowledge of chemistry, pursue advancements in your knowledge, make connections with the challenges of our world, and have the courage to utilize your creativity to find solutions.

For new or returning Olympians that will participate next year, enjoy the challenging process, which will open many possibilities for your future.

I hereby declare that the great organization of IChO always has our support, near or far. Sincere greetings to everyone.



Prof. Dr. Kohei Tamao

President of the Japan Committee of IChO 2021

Ladies and Gentlemen, Boys and Girls;

I am Kohei Tamao, Chairman of the Organizing Committee and President of the Japan Committee of IChO 2021.

I am just happy to receive the IChO flag by computer from Professor Hasan Mandal, Chairman of the Organizing Committee of the IChO Turkey 2020.

Here it is. So, thank you very much Professor Mandal. On this occasion, I would like to express my heart-filled appreciation and congratulations to all the members of the IChO 2020 Organizing Committee and the Steering Committee for their great effort to make this IChO 2020 so successful. And the online theory exam on the 25th of this month and the online closing ceremony today under the difficult conditions due to the Covid-19 pandemic worldwide.

I am convinced that the great success of the online IChO 2020 and the first attempt in IChO history should be worthy of note for the following three points. Firstly it provided a precious opportunity to many talented high-school students around the world to enjoy chemistry in their own countries. Secondly, they were given hope and the courage to overcome unprecedented difficulties. Thirdly, the international trust and friendship have been strengthened among over fifty participating countries.

So we have a longer road from the online IChO 2020. The next IChO 2021 will be here in Osaka, Japan next year from Saturday, July 24th to Monday, August 2nd.

The situation is still uncertain but we organized committee members altogether will concentrate our effort to make IChO 2021 Japan successful.

We are looking forward to welcoming many talented students and their mentors from all over the world to IChO 2021 Japan next year.

Thank you for your kind attention.



IChO

ACADEMIC COMMITTEE



Abdullah AYDOĞAN
İstanbul Technical University



Arif DAŞTAN
Atatürk University



Ayfer Kalkan BURAT
İstanbul Technical University



Caner ÜNLÜ
İstanbul Technical University



Gürkan HIZAL
İstanbul Technical University



Hamdullah KILIÇ
Atatürk University



İsmail YILMAZ
İstanbul Technical University



Mine YURTSEVER
İstanbul Technical University



Murat ALANYALIOĞLU
Atatürk University



Mustafa ÖZCAN
İstanbul Technical University



Nevin ÖZTEKİN
İstanbul Technical University



Nurullah SARAÇOĞLU
Atatürk University



Ömer DAĞ
Bilkent University



Önder METİN
Koç University



Turan ÖZTÜRK
İstanbul Technical University



Yunus Emre TÜRKMEN
Bilkent University

ORGANIZING COMMITTEE



Feza KORKUSUZ
TÜBİTAK



Ömer Faruk URSAVAŞ
TÜBİTAK



Burcu ÇALIŞKAN KARA
TÜBİTAK



Harun ARSLAN
TÜBİTAK



Nurayet ALIMLI
TÜBİTAK



Nursel ÜSTÜNSOY
TÜBİTAK



Mehmet Ali ÖZGÜL
TÜBİTAK

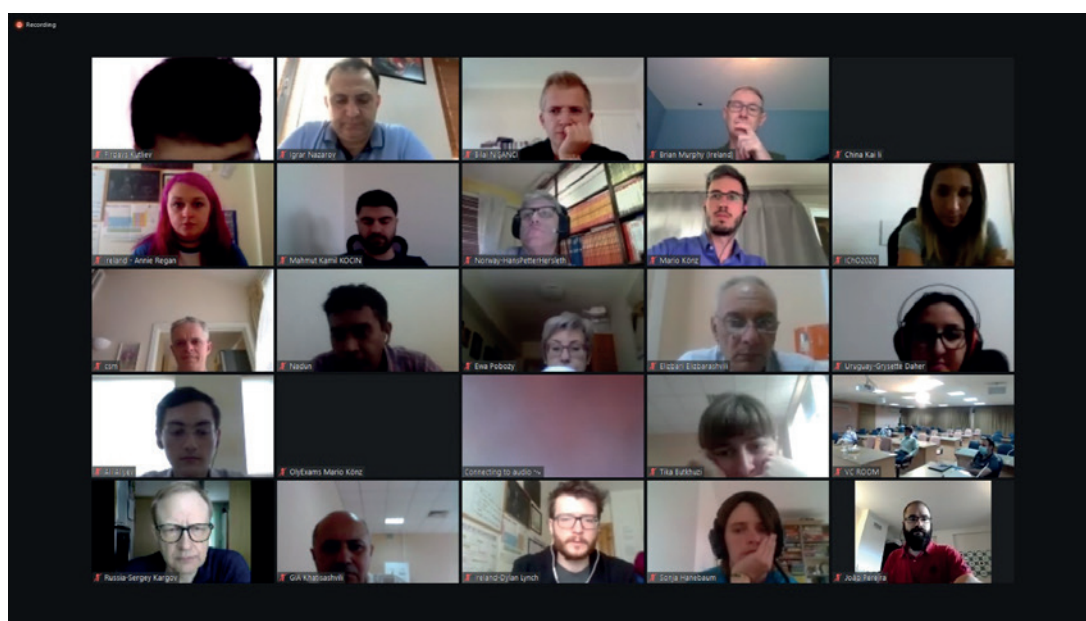


Mahmut Kamil KOÇİN
TÜBİTAK

OLY-EXAMS TRAINING FOR THE MENTORS AND THE INVIGILATORS: 21.07.2020

In order to manage the IChO 2020 process more regularly, a software called Oly-Exams was used for the first time in IChO history. 213 people consisting

of mentors and invigilators from all over the World attended this software training before the Olympiad process started.



Important Terms - Other

- **Board Meeting:** the assembly of all delegation leaders and academic committee members.
- **Official exam version:** the exam questions as prepared by the organizers [in English] and unlocked before the Board Meeting.
- **Translations:** translation of the official exam version from English to the national language of every participating country.
- **Marking:** grading of the student answers, both performed by the delegation leaders and the organizers [markers].
- **Release of marks:** after the organizer have entered the official marks, the delegations can see these marks.
- **Moderation/Arbitration:** arbitration/discussion between the delegation leaders and markers in case of difference between the awarded marks.

Participants (213)

Yao LUO, Yener Tolop, Yuhai Chao, Zeyn Gross, 光澤 聖, Finland_JussiHakkarinen, Hades Bermudez, Portugal João M. P. Pereira, Yasin

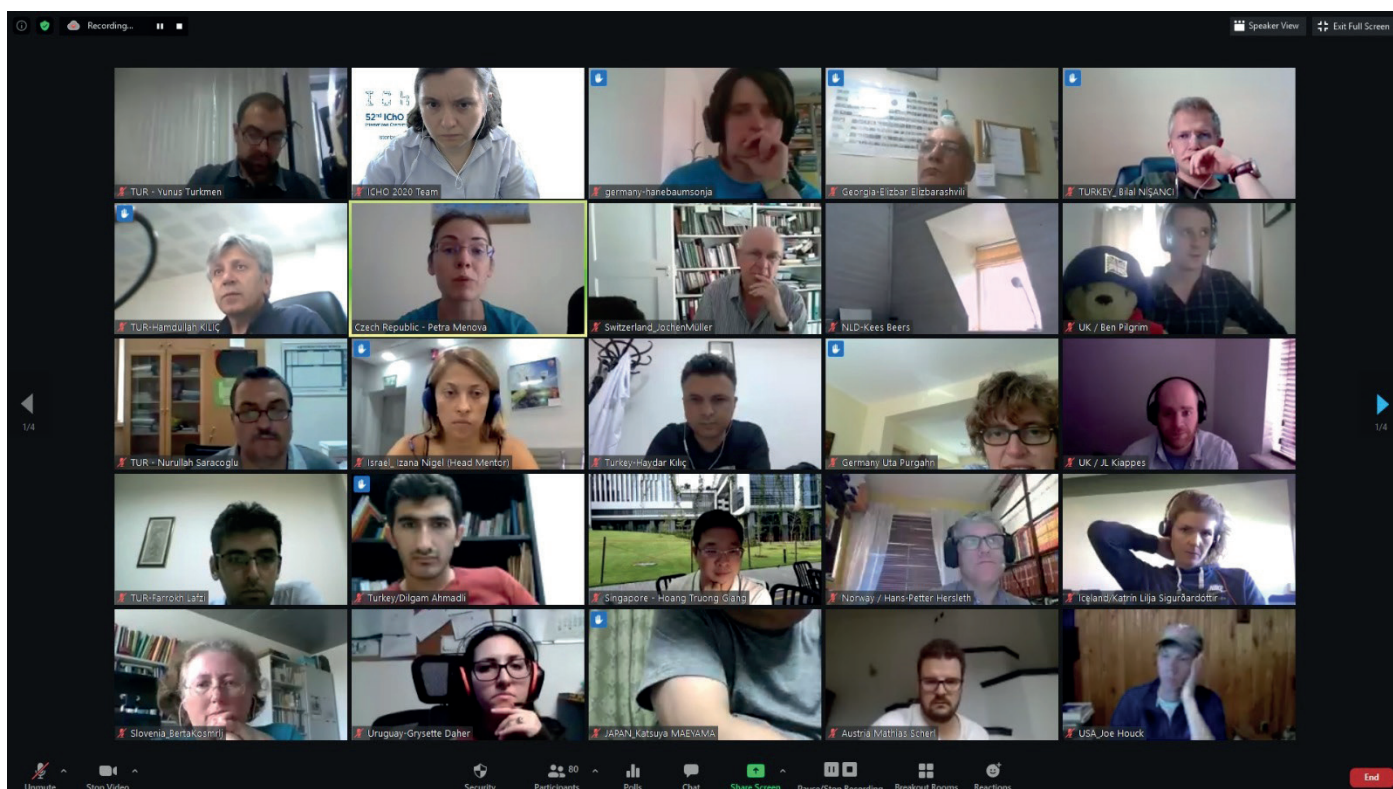
Zoom Group Chat

and transfer the text to the system?
From Isahange to Everyone 01:20 PM
Can other country share their translations with other countries?
From Martin Putala to Everyone 01:21 PM
will we work in word and submit as pdf?
From San_MiguelAlvarado to Everyone 01:21 PM
Do we have access to the pdf version of all questions?
From Greece Panoulakis to Everyone 01:21 PM
we must type the translation in the system or we could transfer it to the system?
From Gabur Maggafalio to Everyone 01:21 PM
Mario will show the process in detail, let him do it

JURY MEETING 23.07.2020

Apart from being miles away from each other, many things should have been like the real Olympiad process. The International Jury Meetings conducted as two separate zoom sessions on July 23rd with the

attendance of 161 mentors. Votings were performed using the OlyExam software during the Jury Meeting sessions.



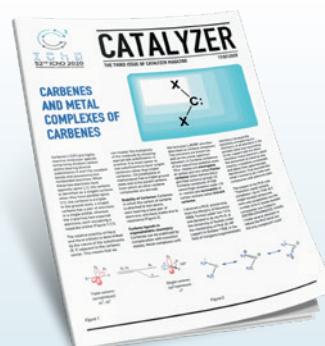
FIRST LEVEL SUPPORT STAFF

Twelve staff, who were competent in the Oly-Exams were ready to help countries 24 hours a day during the Olympiad process.



REDMI NOTE 8 PRO
AI QUAD CAMERA

OUR CATALYZER MAGAZINE RECEIVED 48489 HITS ONLINE IN JULY 2020!



<https://icho2020.tubitak.gov.tr/catalyzer>



MESSAGES FROM THE COUNTRIES

Dear colleagues,

ICHO 2020 has just finished and I am writing this short message to thank you for the great job you have done. Although the world has been upside down for several months, your hard and dedicated work allowed us to keep the continuity of the Olympiad. Thank you for not giving up. Thanks to you, another generation of students had the opportunity to show their talent and make use of what they have been working on for many years. The whole event was really smooth and although we could not meet in person, we all felt the strong bond among us.

Please, express the thanks to the whole team and take a well-deserved rest.

Best regards,

Petra

Dear colleagues,

on behalf of the whole Russian team I want to express our deepest gratitude to you for this outstanding event, for all your efforts, hard work, patience and generosity. Wishing you good health and good luck in the future.

Vadim Eremin
Russia

Dear Tubitak Team,
thank you for everything, you did amazing job, concerning the situation around the globe. See you tomorrow, take care, and regards from Slovenia,
Andrej Godec
HM, Slovenia

Dear Organizing Committee of IChO 2020,
We would like to give a great appreciation for all the efforts and full dedication of your organization. This year's IChO will be the most memorable event of our lifetime. Therefore, again we would like to thank you all for great performances to organize this event. May we'll meet again in the future IChO with better condition than we're facing now.

Sincerely Yours,
On Behalf of Indonesia Team for IChO 2020
Deana Wahyuningrum

Dear Organizing Committee,

We wish to thank you for allowing us to experience the 52nd IChO even via a remote access exam. It showed that despite a very challenging time, people can truly be resilient. It definitely gave us a chance to connect with our team members (students, parents and coaches) in a different way and perhaps made the bond much stronger which gave us the motivation to do our best for the competition.

We cannot imagine the many challenges that the Organizing Committee had to face - it must be very tiring but we think that your hard work paid off. We congratulate you all for making this a very pleasant and enjoyable endeavor of friendly competition between countries.

It was an honor and an enchantment to have had face-to-face encounter (even if it's just via Zoom) with the authors and the other mentors. We are humbled of the friendly hospitality that you have shown towards us.

We hope that in the future when it is allowed, that we can say hello to each other personally and spend some time over academic or rhetorical exchange of ideas.

Sincerely,

Team PHL Delegation:

Eric Punzalan - PNCO-IChO Coordinator
Jennifer Sy - Secretariat PNCO-IChO
Faith Marie Laguna - Head Mentor
Jose Andaya - Country Coordinator
Hilbert Magpantay - Mentor
Nestor Valera - Mentor
Irene Villaseñor - Coach
Ian Ken Dimzon - Coach
Virgilio Ebajo - Coach
Raymond Malabed - Coach
Valerie Miclat - Coach
Laurenzo Alba - Coach

Thank you very much for the final tally of scores. Everything is correct and it matches our internal check as well.

Good luck tomorrow!

Faith

Dear friend organizers,

We are very grateful for participating in this great competition, and we are also very happy for the opportunity to meet your wonderful group of people, interested in promoting not only Chemistry but also international friendship. It has been a wonderful and unique opportunity for our students that, without your effort, would miss this kind of challenging event. We understand that it has been very difficult to organize everything and we will be looking forward to attending tomorrow's ceremony.

We hope that in the near future you all could visit our country in order to retribute your kindness during these days.

Sincerely,

Carlos

Dear Friends and Colleagues,

Many thanks for excellent organization on the IChO-52. It was very great challenge against our Turkish colleagues. They did a great job and made happy many students, mentors and teachers, especially that ones, for whom this Olympiad was first and last chance.

Among the Organizing committee, many thanks to SC committee members and especially to Gabor. He became a good crisis manager too (IChO-2016, IChO-2020).

Looking forward to see you in Japan next year.

All the bests,

Elizbar

Dear IChO 2020 Team,

On behalf of all the Uruguayan delegation, we would like to thank you for organizing this great event. We are very happy to be a part of this great event in a virtual experience and to be able to meet you online.

Best regards,

Uruguayan Delegation

Grysette Daher.

Dear IChO 2020 Team,

Thank you very much for your team's big efforts from the beginning to the last. We will follow great IChO 2020 competition and are sure to prepare next year IChO 2021 Japan.

Best regards,

Masaya Sasaki, Administration Manager
IChO 2021 Japan Committee

Dear All,

Congratulations to all on such a successful event!
Best wishes,

Cecilia

Dear organizers IChO2020,
thank you for the very precise
instructions regarding the
organization
of the Olympics from the
beginning and the effort you
have invested in
organizing this year's ICHO in
very difficult conditions. It was
an
honor to be part of that big
family.
all the best
Miljan Bigovic
team leader of team of
Montenegro

--
dr Miljan Bigović
Prodekan za nastavu
Prirodno-matematički fakultet
Univerzitet Crne Gore
Podgorica

Dear IChO Team,
thank you for all your effort, you
are amazing. In spite of the fact
that there is no "live" Olympiad,
you did every-thing what was
possible, and did it good. We still
have arbitration of course, but I
am sure that will also go fine.
Congratulations to all of you!
Take care, and best regards,
Andrej Godec
Slovenia

P.s. And thank you Georgia for
your gift, will print it.

Dear colleagues,

I also wanted to join the praises and to
thank everyone who contributed
to make this very special Olympiad as
successful as it could be.
As you can imagine, on many occasions
this year, my French teammates and
myself tried to imagine how we would
have handled this kind of
situation, if it had happened last year:
from this very special
perspective, I would like to express my
most sincere admiration for you
who found the energy to keep going and
held on until the end despite the
chaotic situation we were all facing.
I hope you could really enjoy the satisfac-
tion of having made it happen.
As for me, this year also, I could feel
deeply the strong bound of our
community: even if remote, this Olympiad
was for sure a reality.

Thank you again and I hope you can take
now the rest you deserve so much!

Kind regards,

Clem

Dear friends,

I also would like to thank
the entire team of hosts and
express my deepest gratitude
for the decision to do the remote
access IChO. I trust it was a huge
success! We all understand what
a hard work is behind!

I am really proud of our
international chemistry
community. We face challenges,
help and trust each other, thus
giving an excellent example of
true cooperation to our students.

I wish everyone enjoys summer
break!

Very truly yours,
Sasha

Dear colleagues,

My congratulations to all on the fact that such a difficult, first remote Olympiad
was successful!

I join the thanks. I would like to note the skillful approach of the organizing
committee to such an unusual situation and the brilliant implementation of all
ideas. The Azerbaijani delegation also appreciated the work of the OlyExam
team (I like an idea to use the software during the live Olympiad too at some
stages). Everyone also appreciated the idea of simulating the audience hall at
the closing ceremony, it was unexpected and pleasant.

Thanks to everyone and who helped the 52nd International Chemistry Olympiad
happen and make it possible for the students to get this invaluable experience.
Thank you for such hard work and everything that was done.

Looking forward to seeing everyone in real life.

Sincerely,
Igrar

Dear Colleagues,

Thank you for organizing and steering everything very well. After April, the decision of remote IChO, you have worked so hard for three months to make the first remote Olympiad successful.

We received the flag yesterday. It does not mean the next IChO is also remote, although I learned that any difficulty will be overcome with the trust in community. Thank you very much again.

Best regards,
Nobu

Dear organizers,

Many thanks for this email.
You did a great job – Many thanks for very nice organization of the IChO.

All the bests,
Elizbar

Dear IChO 2020 team,
We would like to thank the IChO 2020 Organization Team, Academic staff and all personnel involved in this unique event.

We are wondering how and when we can get certificates and medals of students.

Would there be an electronic version of the certificate of medals until we get the hardcopy of the certificates?

Best regards,
Munarbek Aitiev

Dear Sir/Madam,

Greetings from the Philippines!

Allow me to congratulate all members of the different committees for the success of the 52nd International Chemistry Olympiad held last week in Istanbul, Turkey. You all deserve a warm round of applause! Good job everyone!

Sir, on another note, we understand that the sending of medals to all IChO winners will take time, but may we know when can the organizers send the certificate of participation to be given to all students? I am asking this because one of the members of Team Philippines would like to use his IChO certificate in applying for a University scholarship in another country. We hope that their certificate of winnings and participation in the Olympiad can be sent to their email in time for their scholarship application.

Once again, please extend our congratulations to everyone. We hope that this COVID-19 pandemic will end soon and we also hope that we'll see each other again in the next International Chemistry Olympiads.

Sincerely,

JOSE M. ANDAYA
Head Mentor/Country Coordinator
Team Philippines

I agree with everyone- Petra said it so well. Huge congratulations and even bigger thanks for all of your hard work in determination in making this Olympiad a reality- it was a true gift to the students in this difficult period!!

Best wishes (for some well-deserved rest!)
JL

Dear All:
Absolutely feel the same as Petra. It is nicely done.

I enjoyed the award ceremony very much.

Thank you, Turkey and its people.

Best,
I-Jy

Dear Colleagues,

I was planning to send a congratulations message but Petra already did it and I could not do it better so I want to subscribe her message. We in Mexico are very happy with our results and, as Petra says, "another generation of students had the opportunity to show their talent".

Thanks for everything,

Carlos
Dr. Carlos Mauricio Castro-Acuña,
Prof. T.C. Facultad de Química

SEE YOU IN 2021, OSAKA



SPONSORS



Publisher : Scientific and Technological Research Council of Turkey
Editor : Hasan Seçen
Advisory Board : Arif Daştan, Nurullah Saraçaoğlu, Özlem Kılıç Ekici
English Editor : Russell Fraser
Graphic-Design : Prosigma Inc, Ankara, Turkey. | www.prosigma.net

Sponsors : Atabay, Turkey
Arçelik, Turkey
American Chemical Society, USA
Chemical Society Located in Taipei, China
International Chemistry Olympiad Japan Committee, Japan
International Union of Pure and Applied Chemistry, IUPAC