

50th ANNIVERSARY OF THE INTERNATIONAL CHEMISTRY OLYMPIAD SUCCESSFUL FOR THE MACEDONIAN OLYMPIAD TEAM

This year the International Chemistry Olympiad (IChO) was different in many ways. The reason for that is multiple. For the first time in the history of IChO, the competition took place in two different cities from two different countries. The event started in Bratislava, Slovakia and finished in Prague, Czech Republic [1]. The other thing that contributed to the festive feeling was the anniversary of the competition. This year's slogan - "Where it all began" is more than informative about the history of the competition. It began exactly 50 years ago in Prague, the city that in 1968 was the first host of the competition that was attended by 3 countries only (Czechoslovakia, Poland and Hungary). That is why for the 50th anniversary Czech Republic and Slovakia had the chance to reunite once again for much higher ideals rather than politics. The flawless and well-planned organization was evident and contributed for the pleasant stay in both cities. This also resulted in efficient preparation and translation of the problems, both for the practical and theoretical part.

The goal of this academic event is to stimulate students' interest in chemistry through independent and creative problem solving in the field of chemistry [2]. The most talented high school students from the entire globe gather at the same place at the same time to show their abilities in conducting chemistry experiments and to show their knowledge in chemistry (Fig.1) [3].



Fig. 1. Pages from the daily journal "Catalyzer" regarding the "day by day" activities during IChO, a) theoretical exam at IChO-2019 [4] b) part of the mentor and student activities [5].

The Society of Chemists and Technologists of Macedonia (SCTM) and its division for Education in Chemistry has the accreditation by the Ministry of Education and Science of the Republic of Macedonia to organize the state competitions and to assemble the Macedonian team that will represent the country at international chemistry competitions. Macedonia has been participating at IChO since 2013 and SCTM organizes the preparations since 2015 [6].

Last year (2017) was very successful for the Macedonian team. Filip Trajkovski, student from the City's High School "Rade Jovchevski – Korchagin" in Skopje got a bronze medal - the first one ever from Macedonia to win a medal at the International Chemistry Olympiad [3, 7]. That gave the

mentors and students a will to continue with the hard work and to proceed to the next level with the preparations.

For 2018 preparation cycle, the teaching methods were improved and better planning and organization was set. The results were inevitable. At the IChO anniversary, the Macedonian team had a reason plus to celebrate. Not only to celebrate the anniversary, but also to celebrate the achievement of the team. This year (2018) two bronze medals were won (Figure 2). The winners are Antonio Andonovski and Stefan Damčevski.



Fig.2. Award ceremony at Rudolfinum concert hall in Prague, Czech Republic

At the 50th International Chemistry Olympiad exactly 300 students from 76 countries competed at the most prestigious competition in chemistry under supervision of 256 mentors.



Fig. 3. The Macedonian team after the award ceremony. From left to right: professor Slobotka Aleksovskva, Magdalena Zlatanova – student, Antonio Andonovski – student (medal winner), Stefan Damčevski – student (medal winner), Stefan Stojković – student, assistant professor Miha Bukleski

The Macedonian team consisted of 4 students and 2 mentors (Fig. 3):

- Antonio Andonovski, student at 4th year in the City's High School "Rade Jovchevski Korchagin" in Skopje;
- Stefan Damčevski, student at 3th year in the Private High School "Yahya Kemal" in Struga;
- Stefan Stojković, student at 3th year in the City's High School "Rade Jovchevski Korchagin" in Skopje;
- Magdalena Zlatanova, student at 4th year in the Private High School "Yahya Kemal" in Strumitsa;
- Assistant professor Miha Bukleski, head mentor, Institute of Chemistry, Faculty of Natural Sciences and Mathematics in Skopje and member of SCTM;
- Full time professor Slobotka Aleksovska, mentor, Institute of Chemistry, Faculty of Natural Sciences and Mathematics in Skopje, member of SCTM.

As already mentioned, the results achieved this year are better than the last years. If we take into consideration only the experimental part, the achievement of Stefan Damčevski is one of the best (ranked at 54th place, Fig. 4) and at the same time better than eight gold medal winners. On the other hand, Antonio Andonovski's experimental result was among the hypothetical silver medal positions. Even though the preparations were done under poor experimental conditions, we were able to achieve relatively good results only by the hard work of both the students and the mentors. What the students need to improve at, in the future, is the theoretical knowledge.

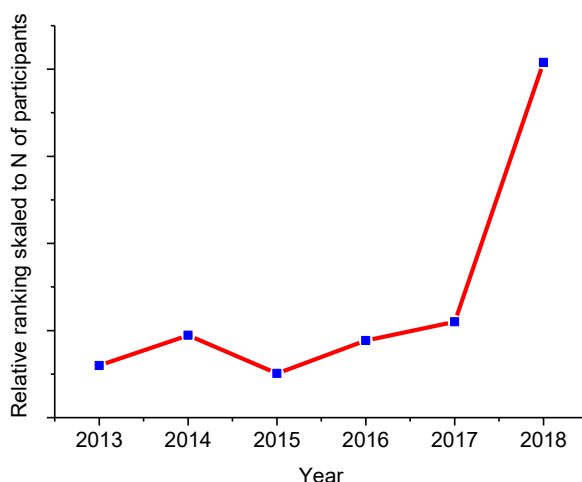


Fig. 4. Best relative single ranking improvement for the experimental achievements over the years of the student with highest score, scaled to the number of participants.

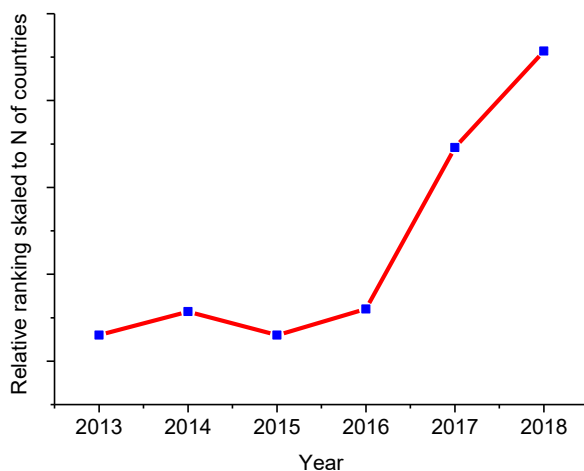


Fig. 5. Team ranking achievements over the years scaled to the number of participating countries

In addition, a statistics regarding the performance of the team can be made. From Figure 5 the progress in the team ranking over the years starting from 2015, is obvious. 2015 is the year when SCTM took over the organization for IChO. For these statistics, the ranking of all 76 teams and their 300 students were considered.

The achievements in 2018 were inspiration for requesting participation at the International Mendeleev Olympiad for 2019. The request was approved and SCTM got an official invitation by the head of the Mendeleev Olympiad. Hopefully SCTM will find finances to support this participation. The whole team that is involved in the preparation process hopes that the conditions will improve together with the achievements of the students.

Miha Bukleski

Institute of Chemistry, Faculty of Natural Sciences and Mathematics

Skopje, Macedonia

mihabukleski@yahoo.com

References:

- [1] 50th International Chemistry Olympiad, official site, <https://50icho.eu> (last accessed 19.12.2018)
- [2] IChO, International Information Centre, <http://www.iuventa.sk/en/Subpages/ICHO/ICHO.alej> (last accessed 19.12.2018).
- [3] M. Stefova, M. Bukleski, V. Petruševski, Rising motivation for learning Chemistry by participation in national and international competitions, Book of Abstracts, East West Chemistry Conference, Skopje, Macedonia, 2017.
- [4] International Chemistry Olympiad Slovakia and Czech Republic, Marking Vs. Exploring, *Catalyzer* 9, 1-12 (2018).
- [5] International Chemistry Olympiad Slovakia and Czech Republic, Bonding with Theory, *Catalyzer* 8, 1-12 (2018).
- [6] Society of Chemists and Technologists of Macedonia, <http://sctm.mk/ICHO-en.htm> (last accessed 28.11.2017).
- [7] M. Bukleski, Achievements of the Macedonian Olympiad Team at the International Chemistry Olympiad, *Maced. J. Chem. Chem. Eng.* 36 (2), 291–294 (2017).